

**YOUTH ENGAGEMENT  
WITH CLIMATE CHANGE  
AND WELL-BEING:  
A STUDY OF DUTCH AND  
SOUTH AFRICAN  
UNIVERSITY STUDENTS**

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A thesis submitted to the University of Gloucestershire in accordance  
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# ABSTRACT

This doctoral study investigates the different forms, levels, and pathways of youth engagement with climate change and the implications for the well-being of youth in different contexts of vulnerability and adaptability. It aims to understand such engagement through the accounts and interactions of youth themselves and within their own environmental, socio-cultural, and political context, thereby contributing a holistic understanding of youth engagement in specific countries, an area under-researched in current literature.

The study aligns its conceptual and methodological rationale through applying a critical interpretivist research approach which ensures an analytical, contextual, and in-depth understanding of such engagement in different countries. It is conducted in the Netherlands and South Africa, which historically have had distinct vulnerabilities and approaches to climate change and diverse pathways for youth engagement. Particular emphasis is placed on higher education youth who constitute the future leaders, informed decision makers, and active and innovative agents of society.

Fieldwork was undertaken throughout 2011, coinciding with the International Year of Youth and the COP17 international climate change conference. In each country, focus groups were conducted with university and college students from diverse socio-demographic and academic backgrounds. These focus groups sought depth and meaning through critical reflection, futures thinking, and a profound and interactive dialogic process. Qualitative interviews investigated more in-depth the emerging themes; whereas participant-observation, meetings with key informants, and document review promoted a comprehensive and valid understanding of the context in which such engagement is taking place.

Key findings reveal: a) the contextual power differentials that strongly shape youth efficacy and agency, especially personal demographic and academic backgrounds,

cultural stereotypes, and socio-political worldviews and structures; b) the need for enhancing young people's skills and prospects for future employment and welfare within an increasingly interconnected, technologically-driven, and sustainability-oriented workplace, through incorporating more critical, futures-oriented, and interdisciplinary pedagogies of education and learning for sustainability within the higher education curriculum; c) the importance of academic and socio-political spaces and opportunities that foster critical reflection, interpersonal interaction, and collective action in strengthening young people's influence for change and their subjective and social well-being; and d) the need for more critical and empowering platforms and pathways that promote meaningful youth engagement and conscious power-sharing amongst youth and other stakeholders in society. Key recommendations emphasize multi-stakeholder partnerships with youth across political, academic, medical, civic and corporate spectrums to empower young people, especially higher education youth, to meaningfully contribute to future educational, developmental, and health agendas and strategies.

# **AUTHOR'S DECLARATION**

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed ..... Date ...23 July, 2013.....

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In the only section of the thesis that can overflow with researcher bias that does not have to be controlled, a few words to reflect a personal journey, and to share my gratitude with all the people who have walked with me throughout.

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*To my young research participants,*

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# LIST OF ABBREVIATIONS

AEF	Alberta Emerald Foundation
APF	Africa Partnership Forum
ARK	Dutch National Programme for Spatial Adaptation to Climate Change
ARIES	Australian Research Institute in Education for Sustainability
AYICC	African Youth Initiative on Climate Change
BBC	British Broadcasting Corporation
BEE	Black Economic Empowerment
CBDR	Common But differentiated Responsibilities
CDC	Centers for Disease Control and Prevention
CDM	Clean Development Mechanism
CEYE	Centre for Excellence on Youth Engagement
CIW	Canadian Index of Well-Being
COP	Conference of the Parties
CST	Critical Social Theory
DEA	Department of Environmental Affairs (South Africa)
DEAT	Department of Environmental Affairs and Tourism (South Africa) <sup>1</sup>
DECC	Department of Energy and Climate Change
DEFRA	Department for Economic,
DESD	Decade of Education for Sustainable Development
DFID	Department for International Development
DHO	Dutch Network for Sustainability in Higher Education
DMBO	Dutch Network for Sustainability in Vocational Education
EEA	European Environment Agency

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<sup>1</sup> DEAT became DEA in 2009

EEASA	Environmental Education Association of Southern Africa
EECI	Environmental Education Curriculum Initiative
EIM	Dutch Ministry of Economic Affairs, Agriculture and Innovation
EJCC	Environmental Justice and Climate Change Initiative
EHP	Environmental Health Perspectives
ESD	Education for Sustainable Development
EU	European Union
FGNL	Focus Groups in the Netherlands
FGSA	Focus Groups in South Africa
FAO	Food and Agriculture Organization
GCI	Green Campus Initiative
GHF	Global Humanitarian Forum
GHG	Greenhouse Gases
HEI	Higher Education Institution
HIV/AIDS	Human Immunodeficiency Virus /Acquired Immunodeficiency Syndrome
IAP2	International Association for Public Participation
ICE	Institution of Civil Engineers
IDEAS	Intellectual Decisions on Environmental Awareness Solutions
IFRC	International Federation of the Red Cross
ILO	International Labour Organization
INT NL	Interviews in the Netherlands
INT SA	Interviews in South Africa
IPCC	Intergovernmental Panel on Climate Change
IWGCCH	Interagency Working Group on Climate Change and Health
JMA	Young Friends of the Earth Netherlands
JNM	Youth League for Nature and Environment Study

KIG	Key Informant Groups
KNMI	Netherlands Meteorological Institute
KvK	Climate Changes Spatial Planning (Netherlands)
KvR	Knowledge of Climate (Netherlands)
KZN	KwaZuluNatal
LfSD	Dutch Programme 'Learning for Sustainable Development'
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
MEA	Millennium Ecosystem Assessment
MEMD	Municipal Environmental Management Department (South Africa)
MNP	Netherlands Environmental Assessment Agency
MVO	Main Knowledge Center of Corporate Social Responsibility (CSR)
Nef	National Economics Foundation
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NJR	Dutch National Youth Council
NRCNA	US National Research Council of the National Academies
NYC	National Youth Commission (South Africa)
OECD	Organization for Economic Cooperation and Development
OCW	Dutch Ministry of Education, Culture, and Science
PCAS	Policy Coordination and Advisory Services (South Africa)
ppm	parts per million
RIVM	Dutch National Institute for Public Health and the Environment
SARVA	South African Risk and Vulnerability Atlas
SP&E	Dutch Ministry of Spatial Planning and the Environment
TVET	Technical and Vocational Education and Training
UNAIDS	Joint United Nations Programme on HIV/AIDS

UNCSD	United Nations Commission on Sustainable Development
UNDESA	United Nations Department for Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
UNIYY	United Nations International Year of Youth
UNYP	United Nations Youth Programme
VROM	Dutch Ministry of Housing, Spatial Planning, and the Environment
WCED	World Commission on Environment and Development
WDR	World Development Report
WHO	World Health Organization
WSCSD	World Student Community for Sustainable Development
YF	Youth Forum
YFJ	European Youth Forum (from Youth Forum Jeunesse)

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# CHAPTER 1. INTRODUCTION

## 1.1 OVERVIEW OF THE CHAPTER

*"The world is facing many, often overlapping crises including financial, security, environmental and other socio-economic challenges hindering the achievement of the internationally agreed development goals. Investing in and partnering with youth is key to addressing these challenges in a sustainable manner".*

UN Statement on the International Year of Youth (UNIYY, 2010 ; p.3)

The United Nations' declaration of the International Year of Youth 2011 signifies the international community's formal recognition of youth as a vital human resource for development, positive social change, and innovation. Under the theme Dialogue and Mutual Understanding, this initiative has asserted the importance of youth empowerment to fully engage in dialogue and decision-making in public and private spheres, and the need for integrating youth-related issues into global and national development agendas (UNIYY, 2010). Amongst the overlapping problems that today's youth are facing, the global climate change crisis is particularly challenging. *"Climate change is the defining challenge of our era. No issue is more fundamental to the global challenges we face - reducing poverty...maintaining economic growth...ensuring peace and stability"*<sup>2</sup> (UN, 2009). This statement signals an alarming threat to human populations worldwide, but particularly to youth who will be confronted with the climate crisis continuously throughout their lives (UNDESA, 2010; UNFPA, 2009). The human-induced<sup>3</sup> variations in the climate system have

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<sup>2</sup> Secretary-General of the United Nations, at the UNFCCC COP-15 high-level segment

<sup>3</sup> Human-induced climate change remains contested despite the strong evidence and unity of the climate scientists that this is occurring.

been projected to cause severe global impacts, including the increase in mean global temperature, also known as global warming, the variation in precipitation patterns and cloud cover, the melting of glaciers and ice caps, and the rise in sea level (UNFCCC, 2007). According to the latest IPCC<sup>4</sup> 2007 report, the impacts of climate change are, and will continue to be, aggravated by a long list of interlinked factors, threatening the health and safety of populations, compromising food security, challenging livelihoods, and eroding economic security. The multiple challenges posed by climate change can be summarized by the following statement; "*events like weather-related disasters, desertification and rising sea levels, exacerbated by climate change, affect individuals and communities around the world. They bring hunger, disease, poverty, and lost livelihoods — reducing economic growth and posing a threat to social and, even, political stability*" (GHF, 2009; p.2).

Due to their possibly lifelong exposure to these risks, young people are at the forefront of climate change, although disproportionately affected across different communities and geographic areas (WHO, 2011). Today's 1.2 billion young people<sup>5</sup> (UNIYY, 2010) will be facing the climate challenges as future families, workforce, and communities.

Higher education youth in particular constitute the key leaders, decision-makers, and stakeholders of future society. They will need to function and flourish in an increasingly globalized world, and learn and lead in a growing green economy, all the while facing a climate threatened future (Bokova, 2010; Johnson, 2009; Pandve, 2009). Consequently, the long-term implications of these climate challenges could extend beyond the immediate physical impacts to entail various dimensions of young people's well-being. Such implications could encompass their emotional and mental health, social inclusion and participation, academic and professional functioning, and overall quality of life (Carlisle, 2008; El Ansari & Stock, 2010; Weissbecker, 2011). For instance, Newton (2007) highlights the complex implications from climate change on young people's long-term wellbeing: "...major

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<sup>4</sup> Intergovernmental Panel on Climate Change

<sup>5</sup> 18% of global population

*implications for youth identities (such as environmental victims or climate induced migrants), transitions (for example, survival agendas or possibilities of green collar work) and cultures (including street gangs and politicized youth agency), which will vary greatly depending upon where in the global North or South young people are socially and geographically positioned"* (p.17).

Therefore, climate change not only changes or threatens young people's current ways of life but also challenges their future possibilities for a secure and sustainable future in an increasingly globalized world. Youth in diverse contexts of vulnerability need to be empowered to have their voices heard, their contributions cultivated, and their engagement made meaningful (Bourn & Brown, 2011; UNFCCC, 2010). Youth engagement with climate change and sustainability issues could be at different levels of depth and understanding, could take various forms of involvement and frameworks for participation, and is generally influenced by multiple factors within their experiential and contextual settings (Packham, 2008; Sherrod, 2010). For instance, the Centre for Excellence on Youth Engagement indicates that; "*full engagement consists of a cognitive component, an affective component, and a behavioural component - Head, Heart, Feet*<sup>6</sup>." Across the globe, today's youth are increasingly finding their voice and mobilizing physical and human resources in their communities and internationally to face the rising climate challenges and to influence a sustainable future. For example, recent youth initiatives have developed networks for empowering and engaging global youth on international development issues (e.g. IDEAS, 2008<sup>7</sup>; One World Youth Project<sup>8</sup>) and strategies for engaging their communities in healthier and more sustainable lifestyles (e.g. WSCSD, 2010). They have organized protests and events for influencing governments, corporations, and the international community on climate change decisions and actions (e.g. 350.org; AYICC, 2009); and have actively and effectively participated in intergovernmental negotiations and processes such as the UNCSD & UNGA (UNFCCC, 2010). Young people's engagement in meaningful activities and having a

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<sup>6</sup> <http://www.engagementcentre.ca/vision.php>

<sup>7</sup> <http://ideasforum.org/>

<sup>8</sup> <http://oneworldyouthproject.org/>

sense of autonomy over decisions empowers them to actively build the future society, and can enhance their sense of control over their lives and future, develop their resilience, and improve their mental health and overall well-being (Bourn & Brown, 2011; Catalano et al., 2004; Hawkins et al., 2009).

The international community is increasingly recognizing the importance of youth's meaningful engagement and empowerment for managing the long-term climate challenges, and of their consultation on policies and decisions that affect their well-being and development (UNESCO & UNEP, 2011; UNFPA, 2009; World Bank, 2007; YFJ, 2008). Chapter 25 of Agenda 21 states that "*involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21*" (UNEP, 1992). Also, the World Youth Report indicates that "*addressing and adjusting to the challenge of climate change is certain to be a defining feature of the future of today's youth. It is therefore critical that young people educate themselves and become more actively involved in combating this threat*" (UNDESA, 2010; xvi). The focus on education highlights the critical role played by academic institutions in empowering young people for positive societal change. Today's youth need to develop the skills and competencies to live and perform in an increasingly interdependent and interconnected world (Mansilla & Jackson, 2011; Nyoni, 2009; Sheehan & Laitinen, 2010). Haslett et al. (2011) indicate that; "*the 2010's perhaps represent our last opportunity to drastically curb greenhouse gas emissions and moderate significant climate change impacts...In Higher Education, the next few cohorts of students are the last graduates that could effect meaningful change, both in their influence on political decisions, their roles in the workplace, and their behaviour as individuals.*" (p. 4) Also, the ILO (2012) and UNDESA (2010) have emphasized the importance of addressing the current skills gap amongst labourers as well as graduating youth to adjust to major shifts in the global market towards sustainability. "*Currently, too few of the green jobs that are being created are filled by youth, primarily because most lack the necessary skills. This is also hampering growth in green sectors*" (UNDESA, 2010; p.42).

Therefore, youth's understandings of, and action on, issues of global significance such as climate change and sustainability need to be nurtured for meaningful engagement (Council of the European Union, 2011; Cross et al., 2010). Education needs to engage young people in profound reflection, critical and systemic thinking, and process-oriented and participative learning experiences that encourage healthier, interconnected, and more sustainable lifestyles (Jones, 2008; Jones et al., 2010; Rappaport & Cleighton, 2007; Wals & Jickling, 2002; Yonezawa et al., 2009). El Ansari and Stibbe (2009) attest to the rising need for such crucial skills; "*gaining skills for surviving and thriving in the 21st century...learners need to have the skills necessary to be effective change agents. This is the acquisition of abilities to work towards changing practices in their own lives, in their workplace, and in their society to contribute towards efforts to increase human wellbeing in a sustainable way*" (p.426)

Nevertheless, it can be argued that the prevailing educational system has partly contributed to widening the global climate crisis through unidirectional and individualistic worldviews<sup>9</sup> which promote unsustainable values and practices (Kates et al., 2005; Orr, 2004; Sterling, 2008; Sterling & Schumacher, 2001). For instance, Orr (2004) argues that "*the ecological crisis concerns how we think and the institutions that purport to shape and refine the capacity to think*" (p.2). Taplin (2003) also attests to current educational challenges to sustainability; "*the Western society is epistemologically organised for materialism and economic development not for sustainability. Universities as institutions of research and teaching reflect this as well*" (p.3). The UNESCO's Decade of Education on Sustainable Development (DESD<sup>10</sup>) put forward a new purpose for education to replace the traditional informational approach of conveying "*just a body of knowledge*" (Tilbury et al., 2002; p.12). Its core vision is to engage all stakeholders in critical, holistic, and fore-sighted education and learning, and to encourage multi-stakeholder and intercultural dialogue and collaboration, which promote the pathway towards

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<sup>9</sup> "*The constellations of beliefs, values and concepts that give shape and meaning to the world a [stakeholder] experiences and acts within*" (Sexton et al., 2008, p. 192).

<sup>10</sup> DESD 2005-2014. Sustainability and the DESD are further discussed in Chapter 4.

positive and sustainable societal change (Tilbury, 2011; Tilbury & Mula, 2009; Yarime et al., 2012). At present, the particular implications of climate change on young people's lives and future prospects remain insufficiently explored in current literature. *"While climate change has received increased attention in recent years, and a myriad of books and reports have been published on the issue, youth as a group has received surprisingly little attention, despite the fact that their fate is inextricably intertwined with that of the planet* (UNFCCC, 2009; p.36). Knowledge and understanding need to be enhanced on the multiple dynamics of youth engagement with climate change and sustainability issues, and the short and long term implications on their well-being, in order to be adequately addressed in policy, practice, and research (Currie et al., 2004; Strazdins & Skeat, 2011).

This study aims to enhance the understanding of youth engagement with climate change and well-being, with a focus on higher education youth, through an in-depth and critical exploration of its different facets and frameworks in two distinct countries, the Netherlands and South Africa. The study considers that achieving a more comprehensive understanding is a socially constructed and contextually-shaped process (Radnor, 2001; Willis, 2007). It therefore emphasizes profound and interactive discussions amongst a diversity of participants, within various environmental, socio-cultural, academic, and political contexts (Sherrod, 2010; Tilbury & Mula, 2009). Furthermore, the study recognizes the importance of contextual power dynamics in influencing youth empowerment and meaningful participation in the debates and decisions that will shape their future (Checkoway, 2011; UNDESA, 2010). It therefore applies the sustainability lens and a critical research perspective, in order to promote reflective and future-oriented thinking and meaningful dialogues amongst diverse participants. Incorporating a critical research approach<sup>11</sup> enables the exploration of the power intersections across social, pedagogical, political, and institutional systems that hinder or promote youth's meaningful engagement and participation in different cultural settings (Giroux, 2003; Jennings et al., 2006). Thus, the study achieves conceptual and

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<sup>11</sup> Adopted from Critical Social Theory; further explained in Section 6.3

methodological alignment through applying a critical interpretivist research approach that seeks to understand and improve youth engagement. Methodologically, this research approach achieves in-depth and contextual understanding through emphasizing reflective thinking techniques<sup>12</sup>, profound and interactive discussions, and critical investigation of contextual settings and institutional cultures in which such frameworks of engagement are taking place.

Finally, the study coincides with three major international events related to the research themes. The first event is the UN's declaration of the International Year of Youth 2011, which signifies the value of youth as leaders for positive social change and development. This initiative highlights the importance of enhancing the understanding of youth in order to fully empower them to effectively engage in decision-making and action on global issues such as climate change (UNIYY, 2010). The second event is the UNFCCC Conference of the Parties (COP17) international climate change conference, which took place in South Africa in December 2011; hence providing further insight into South African and Dutch youth participation and empowerment prior to this international event. The third event is the Rio+20 UN Conference on Sustainable Development<sup>13</sup>, where the discussions and decisions also addressed the opportunities of the higher education sector for realigning priorities and programmes to support education and learning for sustainability (Jickling & Wals, 2012; Tilbury, 2012). An important parallel event also taking place was the Conference of Youth<sup>14</sup> for Rio+20, attended by over 3,000 youth from around the world, aimed at strategizing and mobilizing young people during and after the Rio+20 Conference. Overall, these events highlight the importance of young people's meaningful engagement on climate change and sustainability in order to ensure their long term quality of life and sustained well-being; thereby situating this study, which seeks to enhance the understanding of such engagement, within a timely research context for these themes.

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<sup>12</sup> Such as envisioning

<sup>13</sup> Also known as the Earth Summit. Key themes of Rio+20: Green Economy and Institutional Frameworks for Sustainable Development (Governance).

<sup>14</sup> Also called Youth Blast

This introductory chapter provides a general overview of the study. It clarifies the thematic and methodological coherence, and identifies the main research themes framed within a focus on youth. Section 1.2 articulates the main research questions and objectives, and explains the conceptual rationale guiding the overall research process. Section 1.3 frames the study within the basic philosophical and methodological principles of critical interpretivism and the sustainability worldview. Section 1.4 summarizes the core features of the research design and the conceptual and methodological alignment. Section 1.5 identifies the main theoretical perspectives influencing the development of the research process, regarding key themes, methods, and the researcher's role. Section 1.6 manifests the significance of the study by positioning the research themes within their current fields of literature and identifying the conceptual and methodological gaps that the study seeks to address. Finally, Section 1.7 presents a thematic outline of the chapter breakdown of this thesis.

## **1.2 RESEARCH AIMS AND CONCEPTUAL FRAMEWORK**

The main aim of this study is to achieve an enhanced understanding of youth engagement with climate change and well-being, in its different forms, depths, and frameworks, and within two different country contexts, the Netherlands and South Africa. Particular focus is placed on higher education youth, as key drivers of change and as leaders and decision-makers in future society (Bruinders et al., 2009; Corcoran & Osano, 2009). The key questions that the study aims to answer entail the following;

*RQ1:* Why is it important to enhance the understanding of youth engagement with climate change and the implications on their well-being?

*RQ2:* What are the current forms and pathways of engagement, and related opportunities and challenges, of Dutch and South African youth, especially university students, with climate change and well-being?

*RQ3:* How does each country context influence the youth's engagement with these issues?

*RQ4:* What recommendations can be generated to inform national and international policy and practice on youth engagement with climate change and well-being?

The importance of asking these questions lies in the fact that climate change threatens to disrupt multiple features of young people's current and future lives, yet their current engagement with such challenges remains less holistically understood (Sullivan, 2011; UNIYY, 2010). Current literature lacks systematic research that explores in profound and comprehensive approaches the various forms and frameworks in which youth in different countries are engaging with climate change, and the factors promoting or impeding their meaningful participation in diverse contexts (Starzdins & Skeat, 2011). Also, the present and future implications of climate change on the well-being of youth in different countries remains under-researched in the literature (Currie et al., 2004; Tschakert & Tutu, 2010). This poses important questions on the ways in which such global challenges are impacting diverse aspects of young people's personal, social, and professional lives and long-term quality of life. Higher education youth in particular will be leading future society through a development approach that is increasingly centered around a green economy, whilst being confronted with the long-term challenges and risks of climate change (Schreiner & Sjoberg, 2005; Fien et al., 2008; UNESCO, 2012a). Hence, the engagement of higher education youth with these issues needs to be more comprehensively understood in order to devise adequate policies and strategies that further empower youth towards a more secure and sustainable future.

In the following segments, three key questions are answered to help clarify the conceptual rationale underpinning this study:

- *Youth Profile in This Study: Why Focus on Higher Education Youth*
- *What is Meant By 'Youth Well-Being' in this Study?*
- *Why the Netherlands and South Africa<sup>15</sup>?*

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<sup>15</sup> Detailed contextualization of Netherlands and South Africa is presented in Chapter 5.

- *Youth Profile in This Study: Why Focus on Higher Education Youth<sup>16</sup>?*

Definitions of youth can vary widely across different national and institutional cultures (Cross et al., 2010; DFID, 2010; MacKinnon et al., 2007; Perezniето et al., 2011). The UN defines youth as those aged between 15 and 24. This study places particular focus on higher education youth (undergraduates & postgraduates), aged 18-30, with the aim of engaging a wide diversity of student educational and experiential backgrounds and enriching the generated findings.

The study places particular emphasis on exploring the engagement of higher education (HE) youth for numerous reasons. First, university and college students constitute the future leaders of society who will be making important personal and professional decisions and actions to face complex global challenges such as climate change (de la Harpe & Thomas, 2009; Fahey, 2012; Schusler & Krasny, 2008). They are also the active and innovative agents of society with multiple opportunities for learning and are of an action-oriented nature, who can influence various people within their social and professional spheres (Pandve, 2009; YF, 2009). Second, HE youth will be dealing with decisions and strategies in a future world that is increasingly oriented towards sustainability and a green economy (Ashford, 2010; Rappaport & Cleighton, 2007). As the long-term burdens of climate change and the pressing responsibility of a sustainability transition pose multiple complex challenges to young people over the course of their lives, they will need to develop important skills and competencies to successfully manage the rising complexities (Lyndoh, 2005; SustainAbility, 2008) and maintain a positive sense of well-being and quality of life (El Ansari & Stock, 2010; Hawkins et al., 2009). Skills such as interdisciplinary and systemic thinking, critical reasoning, dialogue, and collaborative work are becoming crucial in an increasingly interconnected world, in which a dynamic and holistic worldview is essential for effective decision-making

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<sup>16</sup> This section seeks to clarify the study rationale for focusing on higher education youth. A more thorough discussion on the role of higher education institutions in preparing youth to manage the climate challenges, and the various initiatives undertaken in this field, is presented in Chapter 4.

and action for a better society (Rappaport & Cleighton; 2007; Sterling, 2001, 2008; Orr, 2004; UNESCO, 2011). Afterall, *"today's graduates of higher education will have the responsibility for leading us to a sustainable tomorrow"* (McNamara, 2008; p. 27).

This study recognizes the value of higher education youth as a critical population group for meaningful engagement and empowerment on current debates, decisions, and actions on climate change and pathways to sustainable development (Arnold et al., 2009., UNEP, 2003). It realizes that the intellectual, social, emotional, and practical skills that HE youth develop through diverse educational and learning spheres, internships and placements, and youth forums and civic collaborations, can play an important role in empowering young people to contribute to their communities and to take initiatives that promote positive societal change (Pascarella & Terenzini, 2005; Thompson & Arsalan, 2007). Therefore, the study seeks to enhance the understanding of the diverse ways in which they are currently engaging with climate change in their personal, social, academic, and professional lives, their visions for the future within the reality of climate change, and the implications of such global challenges on their sense of well-being. The study considers youth's meaningful engagement with climate change and sustainability to entail various dimensions and facets. It transcends the general notion of active participation or involvement to entail a deeper level of reflection, exploration, interaction, valuing, and understanding, and a sense of perceived power and control for influencing or driving change (Colby et al., 2010; Packham, 2008; Tilbury, 2004).

Furthermore, the focus on higher education youth enables the exploration of the ways in which higher education institutions, as key agents of social change, are preparing young people to face the multiple and long term climate challenges and equipping them with necessary skills to advance towards sustainability (Cortese, 2003; Lozano et al., 2011). As the study recognizes the wide diversity of educational visions and programmes across different national and socio-cultural contexts (Tilbury & Mula, 2009; UNESCO, 2009b), it seeks to gain insight into the influence

of the diverse approaches and opportunities generated within these different academic institutions, as well as other contextual factors in young people's local setting, on their overall engagement with these issues in the Netherlands and South Africa. The importance of exploring such insights with higher education youth in particular also meets the growing interest in relationships between the processes of engagement and learning (Bourn & Brown 2011).

- *What is Meant By 'Youth Well-Being' in this Study?*

The concept of well-being is broad and multi-faceted, with no particular definition and with a range of overlapping categorizations, domains, and indicators (Carlisle & Hanlon, 2008; Dolan et al., 2006; Dodds, 1997; SDRN, 2005; Spence et al., 2011; White, 2008). In this study, well-being constitutes an important concept encompassing multiple features of young people's current and future lives at a subjective and social level. It is therefore viewed as a state as well as a process that is continuously influenced by the short and long term challenges of climate change. Youth well-being is closely linked to issues such as social inclusion & participation, equality, and sustainable development (Shaw et al., 2012., YFJ, 2008). The study incorporates a holistic and multi-dimensional perspective regarding well-being, seeking to explore the implications of climate change on personal, experiential, and social dimensions of youth well-being whilst considering the influence of their wider environmental, socio-cultural, academic, and political context (Hall et al., 2010a., White, 2008).

The particular domains of well-being that the study seeks to explore encompass: a) personal feelings (such as health, concerns, emotions, fears); b) personal perspectives (such as their hopes and beliefs, future visions, sense of security and perceived control); and c) personal and social functioning (with regards to their capacities, social relations, academic and professional functioning, self-efficacy and agency). Enhancing the knowledge of the implications of climate change on youth well-being is essential for devising relevant policies that can ensure their meaningful participation in society and safeguard their long-term quality of life (DEFRA, 2005;

Haines, 2008; Hamilton & Redmond, 2010). For instance, DEFRA (2005) describes the connection between people's well-being and their surrounding natural and social environment;; *"(well-being) requires that basic needs are met, that individuals have a sense of purpose, that they feel able to achieve important personal goals and participate in society....It is enhanced by conditions that include supportive personal relationships, strong and inclusive communities, good health, financial and personal security, rewarding employment, and a healthy and attractive environment"* (p.38). Also, the need for such in-depth and inter-subjective insight into young people's well-being in a particular context is highlighted by Hamilton and Redmond (2010), who emphasize *"the importance of qualitative research with young people in order to understand their social and emotional well-being and its correlates"* (p.24). A detailed discussion on youth well-being in relation to climate change is presented in Section 2.3.

- *Why the Netherlands and South Africa<sup>17</sup>?*

The study considers youth engagement with climate change and well-being to be a socially constructed and context-dependent process (Merriam, 2009; White, 2008). It seeks to explore such engagement from the experiences and interactions of youth from diverse socio-demographic, cultural, and academic contexts. The study was conducted in the Netherlands and South Africa, seeking to contextualize such youth engagement within the environmental, social, academic and political systems and the local culture of the two different countries. The Netherlands is geographically vulnerable to climate change, with 70% of its land below sea level. Yet, as a rich country, it holds the human, financial, and technical resources to manage the climate risks (Stive et al., 2011; VROM, 2009). South Africa's vulnerability to climate change is complex. It has more recently emerged from deep historical and socio-cultural struggles and is currently managing the ensuing challenges of overpopulation, social and economic inequities, and livelihood dependencies in certain areas of scarce natural resources (Madzwamuse, 2010; SARVA, 2010). Therefore, climate change burdens this economically developing country with an

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<sup>17</sup> Detailed contextualization of Netherlands and South Africa is presented in Chapter 5.

additional challenge which requires extensive technical and financial resources and political commitment. Furthermore, the two countries have had historically different pathways and causes driving their youth's civic engagement and participation, and their diverse socio-cultural and political systems have shaped such engagement in different ways (Dolby, 2001; Lotz-Sisitka, 2002; van Ewijk, 2011).

Hence, the two countries present diverse settings which are valuable for exploring in-depth the contextual engagement of young people with climate change and well-being. In addition, the focus in this study on higher education youth could provide interesting insight into the influence of the various academic visions and structures on youth engagement and empowerment with climate change and sustainability issues in different country contexts. Furthermore, it may be argued that other countries present similar profiles which are also worth exploring through this study. Therefore, in addition to guidance from the scientific and social literature on climate change challenges in the two countries chosen, it is important to note two additional factors which have guided the researcher's decision on choice of countries:

- The importance of having local contacts in the countries to be studied, which can provide an overall picture of the country context regarding key themes, and support in networking and establishing connections, in the identification of relevant events, and in fieldwork arrangements.

- The convening of COP17 in South Africa, which the researcher viewed as an opportunity to gain insight into the momentum within the South African youth community regarding this global issue and to explore their priorities, perspectives, concerns, and opportunities and challenges for participation and empowerment in various spheres.

### **1.3 CRITICAL INTERPRETIVIST RESEARCH**

The study employs a critical interpretivist research approach in order to generate meaningful and contextual data on the participants' engagement (Silverman, 2006).

Guided by interpretivism, the study recognizes the social construction of meaning and the influence of contextual dynamics on the participants' engagement. It considers knowledge regarding youth engagement with climate change and well-being to be local, situated within their particular socio-cultural and political context, and embedded in institutional structures and social interactions (Denzin & Lincoln 2003; Sherrod, 2010). Accordingly, youth's perceptions, understandings, and experiences, as well as existing systems of power relations, are enacted in these settings. The study therefore assumes a constructivist epistemology of knowledge, seeking to understand the youth's experiences, interpretations, and overall social reality through dialogic processes that place depth and meaning into context. It emphasizes subjective and contextual understandings and interactive discussions amongst a diversity of participants to collectively generate the data (Mason, 2002; Willis, 2007). It also seeks to enhance the understanding of the youth's engagement by investigating its multiple facets and pathways with diverse youth, and by placing it within its specific social context.

Furthermore, guided by the sustainability worldview, the study recognizes young people as key stakeholders in the pathway towards a safe and sustainable future, and the importance of their empowerment in their particular contexts (Tilbury & Ryan, 2011). It emphasizes the social construction of knowledge and the contextual influences on youth engagement, agency, and political efficacy. Therefore, a critical perspective is adopted from critical social theory in order to critically examine the forms and pathways for meaningful participation, agency, and empowerment amongst the Dutch and South African participants in their communities (Jennings et al., 2006). The importance of exploring such critical aspects of young people's meaningful engagement and empowerment is reflected by Few et al. (2007): *"references to 'participation', 'stakeholder engagement', 'bottom-up' processes and other terms associated with a discourse of inclusive governance are widespread, but have so far been dealt with largely uncritically within the climate change literature"* (p.47).

The study used focus groups to promote in-depth discussions based on the participants' inter-subjective interpretations and experiences (Barbour, 2007). The envisioning technique was applied at the beginning of the focus group sessions in order to encourage critical reflection and personalization of the research themes for the participants. This technique, often applied within sustainability research, is focused around reflective and systematic thinking, futures envisioning and dialogue (Tilbury & Wortman, 2004; Wayman, 2010). It encourages the participants to reflect on the values, assumptions, and settings which have influenced their visions of a climate-threatened future. This fosters more meaningful focus group discussions concerning the participants' subjective and shared understandings of, and concerns about climate change, their readiness to act and the existing opportunities and challenges, and their preferred pathways to a sustainable future. Qualitative interviews were used to gain in-depth insight into young people's accounts and experiences. The study also employed participant-observation, meetings with key informants<sup>18</sup>, and document review in order to comprehensively understand the particular Dutch and South African context in which such engagement is taking place (Flick, 2007; Ritchie & Lewis, 2003). It was expected that the in-depth, personalized, and contextual data generated through the critical interpretivist approach would be helpful in filling some gaps towards the holistic understanding of youth engagement with climate change and well-being from the perspectives and interactions of youth themselves (Tisdall, 2009; Wolf & Moser, 2011).

#### **1.4 BASIC FEATURES OF THE RESEARCH DESIGN**

The research design was chosen to ensure the coherence and clarity between the research questions and the most effective strategies and tools for generating the desired information. The main features characterizing this study design entail the following:

- a- The research is conceptually and methodologically designed to:

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<sup>18</sup> Policymakers, educators, researchers, members of youth or sustainability organizations, etc.

- Understand youth engagement with climate change and well-being from an emic (insider/participant) as well as an etic (outsider/researcher) perspective (Silverman, 2006; Mason, 2002)
  - Explore a diversity of participant perspectives, experiences, and understandings through their inter-subjective interpretations of their social worlds.
  - Foster critical reflection and interactive discussions concerning the research themes to ensure in-depth and contextual data generation.
  - Investigate the diverse environmental, socio-cultural, academic, and political settings in each country in order to understand the role of country context in shaping the youth's engagement with climate change and well-being.
  - Consider the contextual dynamics within each of the Netherlands and South Africa when planning and conducting the fieldwork.
  - Maintain research quality and validity, and ethical considerations, throughout the research process.
- b- The research fieldwork was conducted in the Netherlands and South Africa, and the research participants include Dutch and South African higher education students. Participant diversity was obtained through targeting; i) a wide range of universities - comprehensive and technical, located in different geographical regions in each country; and ii) various national and local youth forums and academic and social events related to the research themes.
- c- The research design was dynamic, continuously developing, and context-dependent. It employed interactive and flexible research methods such as focus groups and interviews that enable a diversity of participants to actively contribute to data generation in a critical dialogic space.
- d- The exploration of the context in which engagement took place, through participant-observation, meetings with key informants, and document review, is critical for achieving a comprehensive understanding of the research themes.

- e- The inter-subjectivity or shared understandings of the research themes formed the gist of the research findings. Acknowledging this inter-subjectivity implies recognizing the role and influence of the researcher in the research process. Hence, applying reflexivity is critical for managing personal biases and informing the research process (Denzin & Lincoln, 2005).
- f- The iterative nature of this research design implied that data collection and analysis take place simultaneously to identify emerging themes and to guide further fieldwork steps (Denzin & Lincoln, 2005).
- g- Inductive thematic analysis was applied in order to generate the research findings based on the participants' own experiences, constructions and interpretations<sup>19</sup> (Huberman & Miles, 2002).
- h- Validity and quality of the research were ensured through various techniques that entailed triangulation, prolonged engagement in the field, thick descriptions, researcher reflexivity, and conceptual and methodological alignment (Creswell, 2007).
- i- Ethical considerations were maintained through informed consent, voluntary participation, anonymity and confidentiality (Silverman, 2006).

Figure 1.1 presents the main features of the research design, revolving around key guiding concepts that highlight the importance of context, depth, diversity, and research quality and validity.

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<sup>19</sup> The analysis also recognizes the influence of the researcher on the data generation and interpretation process.

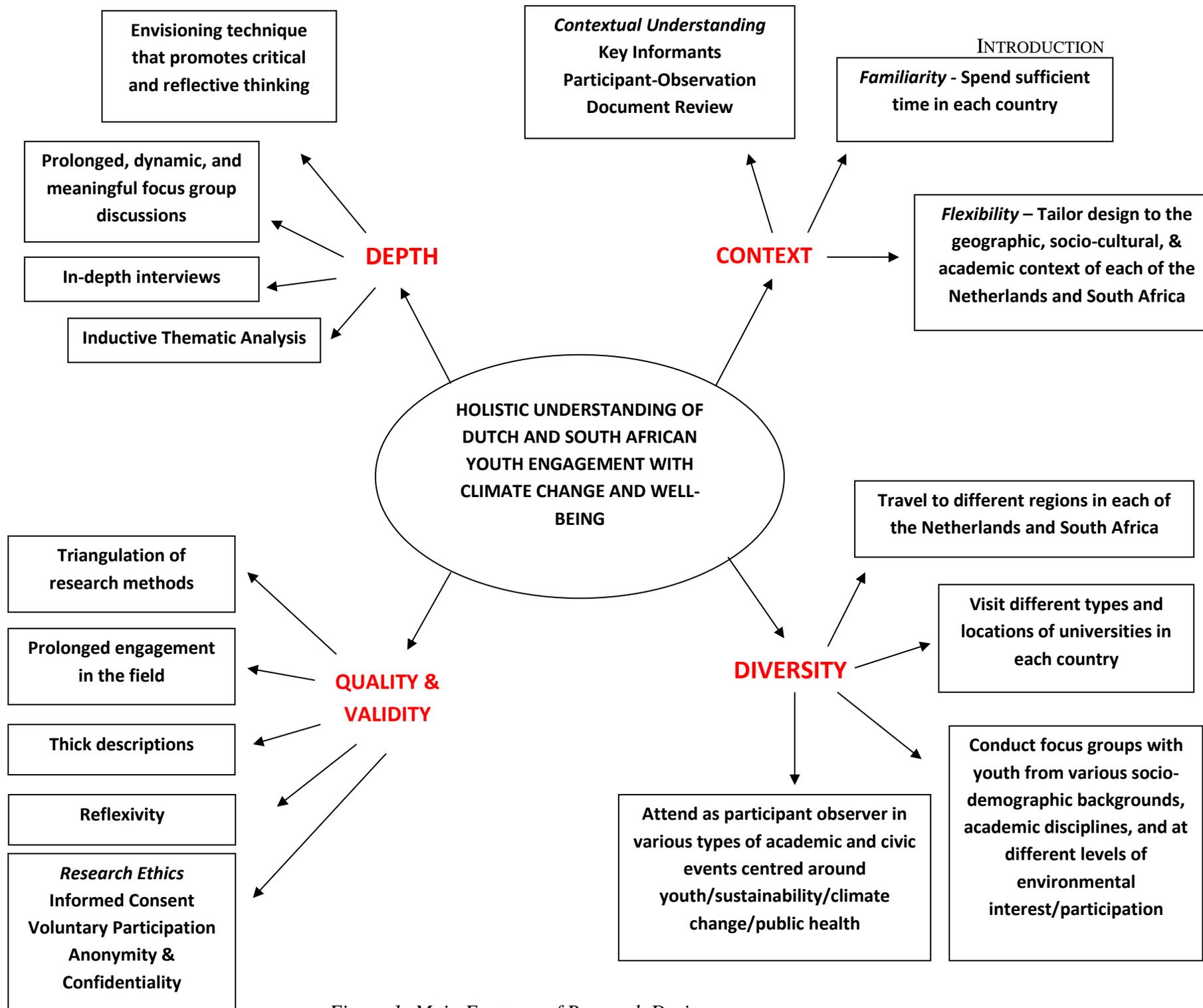


Figure 1: Main Features of Research Design

## 1.5 MAIN RESEARCH ASSUMPTIONS AND PERSPECTIVES

In this critical interpretivist study, it is important to recognize the influence of the researcher's worldview on the development of the research process, and to clarify the researcher's conceptual and methodological assumptions (Willis, 2007; Young & Collin, 2004). This enhances the research quality and validity by recognizing and managing the researcher's influence on the data generation and interpretation and on the overall study approach (Angen, 2000). The researcher's perspectives guiding this study entail the following:

*Concerning the research themes:*

- The researcher believes that climate change is a global and human-induced phenomenon with long-term and all-encompassing consequences which will disproportionately impact different countries and communities.
- The researcher recognizes that today's youth will be facing the climate challenges continuously throughout their lives and that they are challenged not only in their health, security, and lifestyle but also in their prospects for a sustainable future and their future possibilities at the personal, social, and professional levels.
- The researcher considers the continual and all-encompassing challenges of climate change to have implications for young people's short and long-term well-being<sup>20</sup>.
- The researcher believes that higher education youth, as the main leaders and decision-makers in future society, constitute key stakeholders in driving the fight against climate change and the pathways towards a more secure and sustainable future.
- The researcher recognizes that youth in different geographical and socio-political contexts will have different vulnerabilities and coping capabilities to climate change, as well as diverse opportunities, challenges, and power to

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<sup>20</sup> Well-being is considered to entail multiple aspects of youth's present and future lives, including physical, emotional, and mental health, sense of security, academic and professional functioning, social relationships, opportunity and employment, self-efficacy, and sense of empowerment

meaningfully engage in the decisions and actions which will shape their future.

Therefore, the study sought to enhance the understanding of the diverse forms, levels, and pathways of youth engagement with climate change and well-being, with particular focus on higher education youth in two particular countries, the Netherlands and South Africa.

*Concerning the research methodology:*

- The researcher believes that the role of research is more than studying and informing to generate 'knowledge just for knowledge's sake'. Research is also about seeking to improve society through the critique of current societal structures, practices, and power relations, and the forging of more equitable societal arrangements and development.
- The researcher believes that in-depth and contextual understandings of the diverse forms and pathways of youth engagement with climate change and well-being could highlight important focus areas for national and international policymaking and help guide future projects and strategies by practitioners in the field. It could also open new avenues for future research within this terrain.
- The researcher recognizes the importance of a holistic and aligned research perspective for attaining a comprehensive understanding of the research themes. In the context of this study, it is important that youth engagement be investigated from the profound perspectives, experiences, and interactions of youth themselves, and be contextualized within their wider environmental, academic, socio-cultural, and political setting.
- The researcher considers that enhancing such profound and holistic understandings of youth engagement requires in-depth and interactive methods that provide these youth with spaces for personal reflection and meaningful dialogues. It also requires critical exploratory methods that enhance the understanding of the contextual setting in which such engagement is taking place.

- The interpretivist element within this research seeks to explore the meanings that the participants ascribe to their own actions and experiences. The critical interpretivist researcher recognizes existing power dynamics in society and the importance of young people's empowerment to influence change in their communities. The critical interpretivist researcher seeks to identify her personal beliefs, experiences, and subjective understandings, and to recognize the ways in which such biases might influence or inform the research process. For instance, within the constructivist aspect of the study, the researcher recognizes her potential influence, through prior understandings or perspectives, on the interactive discussions taking place in the data collection sessions. Within the critical aspect of the study, the researcher recognizes a certain level of scrutiny or analysis derived through her critical interpretation of initial data sets and meanings within the explored contextual settings.

### ***Significance of the Study***

The significance of this study lies in the alignment of its conceptual and methodological rationale in order to achieve a holistic, in-depth, and critical and contextual understanding of youth engagement with climate change and well-being. Hence, the study contributes the following;

*1- A holistic perspective that seeks to explore interlinks and complexities between diverse themes.* The complex dynamics within different facets of young people's lives – engagement and participation, climate change, sustainability, well-being- have been less comprehensively explored in particular contexts. First, regarding the health dimensions of climate change, the critical implications on young people's well-being are still underexplored in current literature, especially across different countries and communities which will be disproportionately affected by its risks (McMichael, 2011; Strazdins & Skeat, 2011; UNICEF, 2008). Tschakert & Tutu (2010) discuss the importance of understanding personal perspectives and experiences and country contexts when investigating health vulnerabilities among African communities to climate change; *"the challenge is to understand how and why health impacts associated with climatic changes vary between individuals and groups in a society and to better connect health outcomes to social contexts by*

*analyzing personal and communal experiences and interpretations of health and ill-health" (p. 58). Second, discourses on youth engagement with environmental or developmental issues tend to be generally associated with activism or participation, less so with reflection, emotion, or exploration (Bourn & Brown, 2011). Yonezawa et al. (2009) attest to such unidirectional studies on engagement: "the literature on engagement has been a mix of studies that examined individual dimensions of the term. These studies which focused largely on behavioural conceptions of engagement were helpful in laying out a connection between engagement and achievement. But they are limited in how well they capture all the facets of engagement...More recently, researchers have called for a multidimensional interpretation of engagement—one that acknowledges the behavioural, cognitive, and affective components of engagement simultaneously" (p. 192; 194).*

The holistic approach employed in this study promotes a more comprehensive understanding by reviewing research on key themes in the study; by establishing critical understandings and patterns of relationships between these themes in a particular context; and by generating recommendations that address such interdisciplinary issues within the wider youth engagement spectrum.

*2- In-depth understanding of the different levels, forms, and frameworks through which Dutch and South African youth are engaging with climate change and well-being. Current literature lacks in-depth studies that explore youth engagement with climate change through their own views and experiences in their local settings (Bråten et al., 2009; Strazdins & Skeat, 2011). For instance, Wolf and Moser (2011) point out that the majority of studies to date have examined collective, public perceptions of climate change using primarily quantitative data drawn from large, often nationally representative samples. They highlight the need for; "deep insights into understandings, perceptions, and engagement among particular population segments" (p. 549). Also, Feinstein (2009) links engagement with climate change to connectedness; "how they think about climate change (what they know, what they decide to learn), but it also includes how they feel about it, and how their thoughts and feelings lead them to act in ways that, from their perspective, are connected to climate change.... peoples' reasons for connecting with climate change, and the meaning that climate change has for them" (p.3-4). Similarly, various researchers*

have emphasized the importance of qualitative research that seeks to understand young people's social and emotional well-being and its influencing factors from their own perspectives and experiences (Hamilton & Redmond, 2010; Fischer & Van De Vliert, 2011).

The critical interpretivist approach undertaken in this study delves into the profound and multidimensional aspects of youth engagement through promoting reflective and interactive discussions that generate depth and meaning. The study incorporates a multiplicity of participant profiles, perspectives, experiences, and contextual settings in each of the two countries being studied. This can serve to complement the statistical and numerical data generated in quantitative studies by personalizing as well as contextualizing the research themes (Tisdall, 2009). The detailed insight gained can inform national policymakers and practitioners on ways to enhance the youth's engagement and empower them to actively participate in the pathways to a more secure and sustainable future.

Finally, although this study does not claim to actively empower young people in their engagement with climate change and sustainability issues, it nevertheless considers that actively engaging youth in the data generation process is key towards a more comprehensive understanding of such engagement. Yonezawa et al. (2009) argue that "*current research on engagement must also incorporate a more critical dimension and discuss the role that the concepts of "setting," "identity," and "critical youth voice" should play in shaping the construct of engagement* (p. 192). It is also important to note that the study does not claim to cover the diversity and complexity of youth engagement forms and pathways or to make generalizations from the insights gained with the Dutch and South African participants. It rather seeks to critically explore such engagement through a diverse and rich data set which provides a bigger picture into the forms, pathways, opportunities, and challenges of youth engagement and ways it can be enhanced.

3- *Contextual understanding of the youth's engagement within their particular academic, socio-cultural, and political environment.* The study recognizes the importance of the environmental, socio-cultural, academic, and political context in influencing the ways in which young people make sense of and respond to climate change (Brace & Geoghegan, 2010; Lorenzonia et al., 2007; Slocum, 2004), and in

shaping their visions of sustainability and pathways of participation towards a sustainable future (Grønhøj & Thøgersen, 2009; Lindh, 2010; Tilbury & Mula, 2009). Overall, youth engagement with climate change remains largely surveyed and rarely contextualized in a profound manner (Rosev & Arjannikova, 2008; Wolf & Moser, 2011). Large-scale national and cross-national surveys generating widespread patterns of young people's concerns, attitudes, and behaviours on climate change (e.g. Brechin & Bhandari, 2011; Filho, 2010; UNEP, 2011) need to be complimented with in-depth and contextual understandings of such data. This would give voice to statistics and meaning to the factors influencing youth efficacy, agency, and opportunities for participation in different settings (Jennings et al., 2006). For instance, Bourn & Brown (2011) emphasize the importance of context in engagement, and the lack of systematic studies that have investigated the different forms of youth engagement with development-related issues; *"Few empirical studies have explored young people's experiences of opportunities to engage with development issues, and fewer still have compared this experience across different contexts, exploring the relationship between context and form of learning and engagement."* (p.22). Also, recent reviews of the influences on personal well-being highlight the lack of research on the links between well-being and the natural and contextual environment (e.g. Dolan et al., 2006; Rosev & Arjannikova, 2008) and the low regard for experiential and contextual settings (Newton, 2007; Tschakert & Tutu, 2010). Currie et al. (2004) stress that policy-makers, researchers, and practitioners interested in promoting the health and well-being of young people need to understand the influence of families, schools, peers and the socio-economic environment.

This study seeks to critically explore the contextual influence on youth engagement with climate change and well-being. It conducts interactive discussions amongst youth from diverse socio-demographic and academic backgrounds in each country, and explores the relevant institutional and legislative frameworks and overall socio-cultural setting in each of the Netherlands and South Africa (Radnor, 2001). Also, the study recognizes that the youth's active engagement with climate change and well-being is related to their sense of political efficacy<sup>21</sup> and empowerment within

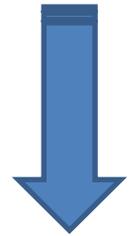
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<sup>21</sup> Belief that social change is possible and that we are capable of contributing to it through meaningful decisions and actions (Sherrod, 2010). Detailed discussion on youth empowerment in Section 3.4

their local or national community, and to the availability of supportive structures and power relations for enhancing engagement (Barber, 2009; Jensen et al., 2005). This is highlighted by Huckle (2008) who states that understanding the relationship between climate change and the social world "*can never be entirely neutral or objective because it is always partly a product of those social or power relations it needs to explain*" (p.1-2). Similarly, this study recognizes that achieving a holistic understanding on youth engagement cannot be entirely objective, as the researcher has to engage in a critical and analytical investigation of contextual elements and an interpretive judgement of their influence on such engagement.

Figure 2 highlights the main areas of contribution of the study through such holistic, in-depth, and contextual research approach.

**Generate in-depth, contextual, and critical meaningful dimensions of engagement of African higher education youth with climate change.**



**Inform national policy-making on the educational, organizational, & structural changes needed to facilitate Dutch & South African higher education youth's meaningful engagement with climate change & to empower them in their local communities.**

**Inform Dutch & South African academic institutions, local youth & sustainability organizations, & other practitioners on youth's priorities and preferences for climate change & sustainability communication & participation strategies.**

*Figure 2: Main Areas of Contribution of the Study*

## 1.6 THESIS OUTLINE

The thesis covers a total of 10 chapters.

Chapter 1 introduces the study, presents the key research questions, and clarifies the conceptual and methodological rationale guiding the research process and its contributions to the field of literature.

Chapter 2 reviews the literature on two key themes in this study, climate change and well-being, framed within a focus on youth. It discusses the scientific and socio-political aspects of climate change and the disproportionate vulnerabilities and coping capabilities of different countries. It also introduces the concept of well-being, its different dimensions, and the importance of exploring the short and long term implications of climate change on young people's personal and social well-being.

Chapter 3 introduces the multidimensional concept and process of youth engagement and summarizes the main forms and pathways for youth participation and the links to youth empowerment and contextual settings.

Chapter 4 discusses the important role of higher education institutions, and of education and learning for sustainability, in empowering young people to meaningfully engage with climate change and sustainability issues.

Chapter 5 contextualizes the research themes to enhance the understanding of each of the Dutch and South African settings, particularly concerning climate change vulnerability and adaptation, and the country's youth dynamics, education, and opportunities for engagement.

Chapter 6 explains the critical interpretivist research approach through which this study is framed, and outlines the key philosophical assumptions and principles guiding the research process.

Chapter 7 presents the research design and fieldwork phases. It first discusses the main data collection methods and techniques, and delineates the main phases of fieldwork in both countries. It then clarifies the process of data interpretation and analysis, and addresses issues of research quality and validity and ethical concerns.

Chapter 8 presents the main research findings, categorized under three main themes: youth vulnerability, efficacy, and agency.

Chapter 9 discusses the findings in relation to relevant literature and the contextual setting, focusing on the different themes which have emerged regarding: the participants' vulnerability, efficacy and agency; contextual influences; and well-being implications.

Chapter 10 provides a final discussion seeking to identify the complex interrelationships between generated findings on youth engagement with climate change and the implications on their well-being. It then provides relevant recommendations for policy, practice, and further research, and reflects on the main contributions and limitations of the study.

# **CHAPTER 2. CLIMATE CHANGE AND YOUTH**

## **WELL-BEING: A REVIEW OF THE LITERATURE**

### **2.1 INTRODUCTION**

Among the multiple complex challenges that the world is facing today, the significance of climate change lies in its grave threat to all dimensions of life, whether at the environmental, socio-cultural, economic, and political levels, or within the individual, public, local, and global spheres (GHF, 2009; UNESCO, 2009a). Scientific research has shown that the human-induced variations in the climate system have been projected to cause severe global impacts, mainly through the increase in mean global temperature, also known as global warming, the variations in precipitation patterns and cloud cover, the melting of glaciers and ice caps, and the rise in sea level (UNFCCC, 2007). The enormity of the climate challenges requires the collaboration of all stakeholders for ensuring long-term solutions (Adger et al., 2007). Youth are key stakeholders in this process, as the main population group who are threatened by the climate risks continuously over the course of their lives. They hold the right as well as the responsibility to secure a safe and sustainable future (Johnson, 2009; UNFPA, 2009). A sustainable future is critical for youth, as it embraces continuous human development and well-being while ensuring social justice, ecological sustainability, and long term equilibrium of the ecosystem (Wiek et al., 2011). Yet as "*the climate problem is ultimately one of values, not efficiency*" (Gardiner, 2004, p.575), at the heart of the climate solution lies a transformation in societal values and visions (Elzen et al., 2004; Robinson, 2011).

At the core of the sustainability worldview is a paradigm shift from the currently operating system that is central to several of today's global converging crisis, which in addition to climate change, include impoverished societies, disempowered communities, unfair markets, de-humanized values, and unsustainable behaviours

(Benessia et al., 2012; Geels, 2010). 'Unsustainable' signifies a way of thinking, feeling, and valuing that shapes people's actions in a manner that meets their own particular needs yet compromises the ability of others within various geographic spheres and current and future timeframes to meet their own needs (Monopolis, 2010; UNESCO & UNEP, 2011). Such unsustainable reasoning and behaviour is largely fitted within a history of educational, socio-economic, and political complexities that fail to engage people in a comprehensive understanding of the world and a critical perspective towards its various entities (Bettencourt & Kaurc, 2011; WCED, 1987). The current '*socio-ecological collapse*' (Evans, 2011; p.2) is the unfortunate outcome of such systems of living, with ensuing crisis that are global and local at the same time, such as climate change, loss of biodiversity, health deterioration, economic decline, and an overall quality of life that may be significantly threatened (McMichael et al., 2012; WHO, 2011).

In particular focus on youth and climate change, the long-term climate challenges impede the prospects towards a sustainable future for youth by threatening to disrupt multiple dimensions within their pathway to sustainability (WHO, 2011). For instance, climate impacts could damage physical and social infrastructure, threaten the viability of projects and investments, and increase water scarcity and lower food production. Prolonged climate risks could also threaten human security, public health, and overall quality of life (Engelman & Mastny, 2010; IWGCCCH, 2008; UNDP, 2004). The only constant across such temporal and spatial variations of climate risks is young people, who remain the primary stakeholders in today's and tomorrow's world. The ensuing physical and economic threats, mental and emotional distress, and social and professional disruptions from climate change can impact various dimensions of young people's well-being (Morin & Patino, 2010; The Climate Institute, 2011). Research has shown that personal and social well-being are partly related to people's ability to live safe, competent, happy, and autonomous lives, all of which are partly influenced by the environment in which they live (Kasser, 2009; Marks et al., 2006). However, such vulnerabilities and their response strategies would vary inequitably across different countries and communities (Adger et al., 2007; GHF, 2009). Also, the pathways and opportunities for youth to engage in a meaningful way in managing the climate risks and securing a sustainable future will be significantly shaped by their overall contextual setting (Camino & Zeldin,

2002). Therefore, the complexity of the climate crisis and its challenging implications for young people's long-term quality of life imply a greater need for understanding such interrelated themes in a holistic and integrative manner.

This Chapter provides an overall insight into two key themes in this study; climate change and youth well-being. Section 2.2 discusses the global crisis of climate change. It addresses the scientific evidence; political climate debates and key reports; climate scepticism and the role of media; and climate vulnerability and response strategies, and the implications on and responsibilities of youth. Section 2.3 clarifies the concept of well-being and its multiple definitions and dimensions; discusses the importance of exploring the implications of climate change, and youth engagement with climate change, on youth well-being; and presents the conceptual framework for well-being in this study. Finally, Section 2.4 discusses the importance of a sustainability pathway as an opportunity for youth to a more secure and sustainable future.

## **2.2 UNDERSTANDING CLIMATE CHANGE**

Climate change is an unprecedented global phenomenon that has rapidly gained high priority at the international arena. Scientific evidence points to the human impact on climate change, particularly from the burning of fossil fuels (industry, heating, agriculture, transport), and land use changes (deforestation, urbanization) (IPCC, 2007). This has led to an increase in the levels of greenhouse gases (GHG) in the atmosphere, mainly carbon dioxide, methane, and nitrogen dioxide; hence trapping heat from the sun that would otherwise be radiated back into space (UNFCCC, 2007). For instance, the concentrations of carbon dioxide, the primary greenhouse gas of concern, have dramatically increased from an average of 280 ppmv<sup>22</sup> for thousands of years preceding the industrial revolution, by almost 40% to 393 ppm in recent years (IPCC, 2007). At present, the global atmospheric temperature has increased by approximately 0.75°C in the last 100 years; an unusual rate of warming when compared to the average global temperature in the last 1800 years. The rate of

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<sup>22</sup> Parts per million per volume

increase in the last 25 years has notably been much higher, at over 0.18°C per decade (IPCC, 2007). The year 2010 has been reported, by several world-renowned research institutes<sup>23</sup>, as the hottest year, globally, on record since 1860 (McMichael & Lindgren, 2011).

Climate change experts and research institutes continue to present scientific evidence of anthropogenic or human-induced climate change, despite some critics and sceptics<sup>24</sup> who doubt the reality of this phenomenon (Poortinga et al., 2011; Quiggin, 2008). Overall, the ensuing changes to the global climate system are already being observed. Currently, at one-degree global warming, rising sea levels, extreme weather events, water shortages, and biodiversity loss are affecting the lives and livelihoods of various communities around the world. Leading climate scientists have warned that a two-degree global warming could have detrimental effects on humanity. If GHG emissions from human activities continue to rise without control, the Earth may be warmer by more than 4°C by the end of the century. If the current level of CO<sub>2</sub>, at around 390 ppm is sustained over the next few decades, this would result in a greater than 50% probability of a 2°C rise of average global temperature (IPCC, 2007; NRCNA, 2006). *"A rise greater than 2 °C would move the planet, and ourselves, into 'dangerous' territory"* (McMichael & Lindgren, 2011; p. 403). Yet if current GHG emissions are not reversed by close to 2020, global warming is projected to pass two degrees, as it would still take approximately 20 years to slow or reverse the warming that has already taken place (Hulme, 2009). Dangerous increases in the global warming of the atmosphere could pose great risks to future generations, of which today's youth constitute a central and critical population group.

The potentially abrupt or irreversible impacts of climate change could threaten biodiversity, disrupt ecosystems, and damage economic conditions and social and physical infrastructure. Furthermore, climate change poses grave risks on people's health and survival, particularly vulnerable populations who are dependent on natural resources for sustaining their livelihoods, and who generally have weaker capacities to protect themselves (Allison et al., 2009; Sandberg & Sandberg, 2010).

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<sup>23</sup> The US-based Goddard Institute for Space Studies (NASA), the National Climatic Data Center (US National Oceanic and Atmospheric Administration), the UK Meteorology Office's Hadley Centre (Climatic Research Unit)

<sup>24</sup> Climate Scepticism is further discussed at the end of Section 2.2.1 below.

The climate crisis has drawn wide inequalities and global debates of responsibility and vulnerability. The most developed nations<sup>25</sup>, and fast-developing economies such as China and India, have had the greatest contribution to GHG emissions through extreme industrial and technological advancement at the expense of environmental preservation and ecosystem health. Yet the climate impacts are projected to be disproportionately distributed across various regions of the world. Scientific evidence is mounting that the developing countries, who have contributed least to the global climate crisis, are most likely to suffer the consequences of climate change (IPCC, 2007; Moncel et al., 2011). According to Dryzek et al. (2011), such uneven distribution of climate challenges is due to three main reasons. First, most industrialized countries lie in northern mid and high latitudes, and warmer temperatures might even benefit their economic performance and agricultural productivity. Second, despite the increasingly unpredictable rainfall patterns, droughts and floods are most likely to hit already-prone regions, which mostly constitute of developing countries<sup>26</sup>. Third, developed countries have higher adaptive capacities to climate change than developing countries, due to their wealth of financial, technical, and human resources. Consequently, the global climate crisis has surpassed mere scientific observations and warnings to encompass wider socio-economic and political implications. This has driven the international community into continuous developments in research, debate, and policy (Bolin, 2007). Section 2.2.1 provides a summary of the key areas of scientific and political development concerning climate change.

### **2.2.1 Scientific and Political Development and Key Reports**

The rising scientific evidence of anthropogenic<sup>27</sup> climate change and its potentially dangerous consequences has enhanced the knowledge and widened the policy debate on climate change (Hall & Ashford, 2011). The first UN environment conference, the 1972 Conference on the Human Environment in Stockholm, marked the beginning of a new phase for international environmental policy, and was followed

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<sup>25</sup> Such as the United States, European Union, Japan, Russia.

<sup>26</sup> With the exception of Australia

<sup>27</sup> Human-induced

by several other international conferences and policy milestones<sup>28</sup> which gradually placed climate change higher on their agenda (Boykoff, 2008; Hulme, 2009).

The rising global risks from climate change prompted the UNEP and WMO to establish the Intergovernmental Panel on Climate Change (IPCC) in 1988. The IPCC is comprised of over 2,500 of the world's leading climate scientists, economists and policy experts whose main task is to comprehensively summarize the scientific evidence on climate change, its social and economic impacts, and potential response strategies every five to six years. Their work is recognized by countries around the world as the scientific basis for international negotiations and for guiding national policy and action on climate change. The United Nations Framework Convention on Climate Change (UNFCCC) was established following the first IPCC report in 1990. The Convention constitutes the key international treaty to stabilizing greenhouse gas emissions and coping with the consequences of climate change. Since its establishment, the Parties to the Convention have been meeting annually at what is known as the Conference of the Parties<sup>29</sup> (COP) to assess international efforts and national progress in dealing with climate change (Bolin, 2007; UNFCCC, 2006).

Successive IPCC reports (1990, 1995, 2001, 2007) further expanded and consolidated the scientific evidence concerning the human contribution to climate change. Key outcomes of these IPCC reports are summarized below<sup>30</sup>.

a) The signing of the United Nations Framework Convention on Climate Change (UNFCCC) at the 1992 Rio 'Earth Summit', followed the first IPCC report in 1990. The treaty aimed at stabilizing atmospheric GHG concentrations, yet was legally non-binding.

b) The principle of 'common but differentiated responsibilities'<sup>31</sup> (CBDR), which recognized the shared responsibility between the world's nations to shared resources, whilst acknowledging the differentiated obligations due to the variations

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<sup>28</sup> Please refer to Appendix 1

<sup>29</sup> COP is an association of all the countries that are Parties of the Convention (currently 195 countries), and is the highest decision-making authority on climate change at a global level.

<sup>30</sup> Unless stated otherwise, referenced from UNFCCC Handbook (2006)

<sup>31</sup> Principle 7 of Rio Declaration (1992 Earth Summit)

in the economic, social, and technological levels of different nations and their historical GHG emissions (Deleuil, 2012).

c) The adoption of the Kyoto Protocol in 1997, which officially committed 37 industrialized countries to reduce GHG emissions by an average of 5% against 1990 levels over a 5-year period from 2008-2012.

d) The release of special IPCC reports in 1997 which concluded that the African continent was most vulnerable to the impacts of climate change as a result of its multiple complexities<sup>32</sup> (Watson et al., 1997).

e) The solidification of scientific evidence of *'unequivocal'* (IPCC, 2007; p.7) anthropogenic climate change in the 4<sup>th</sup> IPCC report 2007 (Dryzek et al., 2011).

f) The agreement<sup>33</sup> to negotiate a legally binding climate regime on various aspects of the climate crisis including adaptation, mitigation, technology transfer, and capacity building (UNFCCC, 2011a), and the initiation of a new Green Climate Fund in order to financially support developing countries in their adaptation and mitigation strategies (UNFCCC, 2011b) at COP17 2011.

g) The continuation of the Kyoto Protocol with a second commitment period from several countries<sup>34</sup> from 2013 till 2020, the establishment of an eight-year programme<sup>35</sup> focused on climate change education and training, and of a new approach to address the 'loss and damage'<sup>36</sup> associated with the adverse impacts of climate change in developing countries, at COP18 2012 (Biermann, 2012; Davide, 2012).

Work on the 5<sup>th</sup> Assessment Report is still underway<sup>37</sup>, and it is expected to emphasize the human dimensions of climate change, particularly "*on assessing the socio-economic aspects of climate change and implications for sustainable development...risk management and the framing of a response (both adaptation and mitigation*" (IPCC, 2013; p.2). The report will aim to enhance the knowledge on the regional disparities, vulnerabilities, and adaptation/mitigation options concerning climate change. It will also aim to maintain consistent evaluation of uncertainty and

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<sup>32</sup> Water scarcity, food shortages, widespread poverty, and weak economies; all of which limit the adaptive capacity to climate change.

<sup>33</sup> The Durban Platform

<sup>34</sup> Signatories include European Union, Australia, and Norway and several countries, but exclude some major GHG emitting countries such as the U.S., Japan, & Russia.

<sup>35</sup> Named the Doha Work Programme

<sup>36</sup> Such as risk management, institutional preparedness, and financing efforts

<sup>37</sup> Due 2013-2014

risk, and develop new climate scenarios across various temporal and geographical scales.

Despite the mounting scientific evidence regarding the reality of climate change and its dangerous impacts, climate sceptics continue to doubt the scientific and political arguments concerning this global crisis. It is important to consider the arguments made by climate sceptics and their influence on young people's perspectives and beliefs, as discussed below.

### *Scepticism of Climate Change and the Role of Media Communication*

This study considers climate change to be a real global threat that requires effective and long-term solutions<sup>38</sup>. However, it is important to acknowledge the presence of climate scepticism<sup>39</sup> or denial across various social and economic institutions as well as the general public. General environmental scepticism argues against the claims put forward by environmental scientists regarding the range and extent of harm from human activities to the natural environment, and denies the seriousness of environmental problems and their threat to society (Jacques et al., 2008., Jamison, 2004). A notable example is the argument raised in the book 'The Skeptical Environmentalist' (Lomborg, 2001). The book is approached from an economic and statistical perspective, arguing that environmental claims of overpopulation, water shortages, declining energy resources, and climate change are overemphasized, and that priority in policies and action should be given to more pressing issues such as poverty, diseases, and social and economic development (Lomborg, 2001; Pielke, 2004; van den Bergh, 2010).

Climate scepticism in particular has been manifested in various ways partly due to the multi-faceted nature of the climate debate (Poortinga et al., 2011). For instance, Rahmstorf (2004) distinguishes between trend sceptics, attribution sceptics, and impact sceptics, to describe disbelief in the existence, human contribution, or significance of climate change, respectively. Also, Poortinga et al. (2011) distinguish

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<sup>38</sup> Please refer to Section 1.5 on Research Assumptions

<sup>39</sup> Terms such as scepticism, denial, cynicism, and uncertainty are often used interchangeably across the literature (Poortinga, 2011).

between public attitudinal terms such as scepticism and uncertainty<sup>40</sup>; "*scepticism refers to strongly held disbeliefs in or a rejection of the tenets of mainstream climate science, uncertainty refers to a lower subjective sense of conviction or validity as to whether climate change 'really' exists, is caused by human activity, and/or will have major impacts*" (p. 1016). Similarly, Whitmarsh et al. (2011) argue that uncertainty rather than complete skepticism or denial about climate change is more common amongst the public. In general, climate sceptics often highlight the scientific uncertainty or ambiguity concerning climate change, stating that there is no scientific consensus that global warming is happening or that human actions have contributed to recent increases in global temperature (Antilla, 2005; Dunlap & McCright, 2011; Norgaard, 2011). Also, research has shown that climate belief and scepticism can be associated with people's personal and social context<sup>41</sup> such as their attitudes, values, political stances, and worldviews (e.g. Poortinga & Pidgeon, 2004; Weber, 2006; Whitmarsh, 2009). At the corporate level, scepticism has mainly emerged across big corporations such as the fossil fuel industry and some corporate businesses, whose underlying arguments tend to focus on the nature of the climate problem rather than on the possibilities of solutions (Hoffman, 2011).

The literature often argues that the doubt expressed by the general public is partly an outcome of the ambivalence and controversy in which climate change is presented in the media (Antilla, 2005; Hulme, 2009; Leiserowitz et al., 2010). For example, debates on climate scepticism and denial most prominently came to light following an important series of events that were highlighted in the media, which notably undermined the international status of climate change science and jeopardized the integrity of the scientific community (Gavin & Marshall, 2011) Amongst these events was the November 2009 unauthorized release of a series of emails dating back 10 years, in which prominent climate scientists discussed the manipulation and withholding of data that disproved the severity of climate change (Oreskes & Conway, 2010; Pearce, 2010). Another event was the IPCC acknowledgment of error in certain inaccurate claims in their Working Group II document of the 2007 IPCC 4<sup>th</sup> Assessment Report (Hoffman, 2011).

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<sup>40</sup> Also discusses ambivalence; or mixed feelings, attitudes, or beliefs regarding climate change

<sup>41</sup> Further discussed in Chapters 8 & 9 in relation to the study findings

Several reviews of public opinion on climate change have shown that such events play quite an important role in shifting the public debate and in negatively influencing public opinion and support on climate change (Boykoff & Roberts, 2007; Boykoff, 2008; Corbett & Durfee, 2004). For instance, media sources have often been criticized for generating controversy and poor understanding on climate change and for focusing on the uncertainty rather than on areas of scientific consensus (Carvalho, 2007; Moser, 2010; Nisbet, 2009; Weingart et al., 2000). Corbett and Durfee (2004) argue that: "*in the case of global warming, the media have more often than not overplayed the level of uncertainty about global climate change*" (p.134). Nevertheless, the media can also play a positive role in raising public awareness or mobilizing debate and action on climate change. A review of media coverage on climate change conducted by Boykoff and Roberts (2007) concluded that; "*in some cases the media has been demonstrated to actually have played a role in hampering accurate communications about climate science to policy actors and the public via the media...However, in other cases the role of mass media in communicating climate science, mitigation and adaptation has been mixed or more positive*" (p.34). This is further supported by Brulle et al. (2012) who concluded in their study on influencing factors on public opinion concluded that; "*the importance the media assigns to coverage of climate change translates into the importance the public attaches to this issue*" (p.19).

Particularly in today's globalized world, the youth, as active and avid technology users, are being exposed through online social networks and websites to a myriad of information and arguments from different viewpoints on climate change (O'Neill & Boykoff, 2011) Social media is nowadays significant in shaping public opinion and actions, and climate advocates as well as sceptics are increasingly utilizing these forums for influencing the general public. For example, Lockwood (2008) argues that new media <sup>42</sup> play an important role in developing '*sceptical (climate) discourses*' (p. 2). Others argue towards a potentially positive influence of new media on youth's engagement with climate change, as stated for instance by Russell (2010, p.21): "*online sites, blogs, and social media tools....have the potential to update and personalize science stories that appeal to newer, younger audiences and*

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<sup>42</sup> "*Media which are integrated, interactive, and use digital code*" (O'Neill and Boykoff, 2011;p. 233)

*to give the public a chance to participate in the dialogue. Multimedia video, graphics, and other visuals can also bring the stories to life in a way that words alone cannot."*<sup>43</sup>

Overall, there is international scientific consensus amongst climate change experts that climate change is happening (IPCC, 2007; Poortinga et al., 2011), and that adequate responses need to be devised to protect against future risks. The main impacts and risks from climate change, as identified by leading scientific bodies, are discussed in the next section.

### **2.2.2 Main Impacts of Climate Change**

*"Climate change potentially represents a major threat to the health and socio-economic stability of youth... Unless the causes and consequences of climate change are addressed very soon, the youth of today and tomorrow may effectively be prevented from participating fully and productively in society, which could have a serious impact on national development in the long term"*

(UNYP, 2011; p.26)

Scientific research has continuously warned against the wide ranging impacts of climate change to the environment, the economy, social welfare, political systems, public health and security (Confalonieri et al., 2007; IPCC, 2007). As explained in the previous section, these impacts are already being manifested in various parts of the world, yet are increasingly threatening for future generations (GHF, 2009). In addition, it is expected that the developing countries, which have had the least environmental contribution to climate change, will be hit hardest by climate change due to their geographic vulnerability and limited coping capacities. Among the areas at greatest risk are the poorest regions of the world, including the Sub-Saharan region & developing Southern African countries, South and South East Asia, and

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<sup>43</sup> Further discussions on the influence of media and communication on youth engagement are covered in Chapters 8 & 9.

small-island developing states. Yet, certain developed countries are also at high risk, such as Australia and low-lying coastal European countries such as the Netherlands that are highly susceptible to sea level rise and associated risks (Conway, 2009; IPCC, 2007; NEPAD, 2008). Youth form almost one third of the population in several countries within these vulnerable regions, and many are already facing complex difficulties from social and economic instability and poverty (UNDESA, 2010). Climate change is expected to overburden their lives with its wide-ranging and long-term impacts.

The most recent IPCC report (2007) has identified the main impacts of climate change to entail: a) rise in sea level, b) disruption of the ecosystem, c) extreme weather events, d) water shortages and food insecurity, e) diseases and other health effects, and f) social disruption and population displacement. These impacts are projected to increase in magnitude, frequency, and intensity in the near future, posing continuous threats and future challenges for today's younger generations (Haines et al., 2000; McMichael et al., 2006; Patz et al., 2005). Below, the discussion builds on the projections of climate impacts by addressing the major areas of human and social concern, particularly in relation to youth<sup>44</sup> whenever relevantly established in current literature.

- *Rise in Sea Level*

The rise in sea level is relatively slow and gradual when compared to other more extreme or visible impacts. It is expected to impact larger populations in the future, as the rates of thermal expansion and glacier melting continue to accelerate (IPCC, 2007). Today's youth are more vulnerable to the consequences of sea level rise in their future, which could threaten to disrupt various aspects of their lives. Coastal erosion could force youth living in coastal areas to temporary or permanent displacement, as homes and infrastructure are threatened by the rising water levels. This not only imposes physical dislocation but also burdens youth with concern and distress over the loss of their homes and disruption of their lives (McMichael & Limdren, 2011). For young farmers, sea level rise could potentially damage agricultural crops or fields along vulnerable coastlines; hence impacting the

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<sup>44</sup> A more detailed discussion on the importance of considering the implications of climate change on youth well-being is presented in Section 2.3.2

livelihoods and source of income for these youth and their families (UN, 2011; Ziervogel et al., 2008). Moreover, rising sea levels may cause saltwater intrusion to contaminate fresh underground water and freshwater streams, impacting the health and livelihood of youth as the freshwater supply for drinking and farming is reduced (Costello et al., 2009; EHP, 2008).

In terms of health risks from sea level rise, the direct risks include the physical safety hazards from coastal inundation, the damage to coastal infrastructure such as roads, housing and sanitation systems, and increased floods and storm surges. The indirect health risks include the salination of freshwater supplies (especially for small islands and low-lying areas), the loss of productive farmland and ensuing decrease in food yields, changes in breeding habits for coastal-dwelling mosquitoes and potential upsurge in rates of infectious diseases. Consequently, over the long term, sea level rise can have several negative impacts on young people's lives, particularly to their physical and emotional health and social stability (McMichael & Lindgren; 2011; White et al., 2007).

- *Disruption of Ecosystem*

The gradual changes in the global climate system are causing important disruptions to various dimensions of the ecosystem, mainly through increasing water and air pollution, deforestation and habitat destruction, and loss of biodiversity (Chapin et al., 2000; MEA, 2005). The short and long term consequences of such disruptions would adversely affect people's lives and livelihoods in several ways. The contamination of air and water resources from increased industrialization and poor management of natural resources can lead to various health-related problems. Water pollution is particularly dangerous for poor communities who are dependent on natural systems for drinking and irrigation (Bates et al., 2008). Also, air pollution can be exacerbated by higher temperatures by affecting the formation and dispersal of air pollutants such as ozone. For instance, the large rate of deaths during the European heat-wave of 2003 was partly augmented by the increased levels of ozone in the atmosphere of some big cities (Kinney, 2008). In addition, the loss of biodiversity and habitat destruction can be troublesome particularly to indigenous communities who are dependent on their natural environment for sustaining their

livelihoods. Recent reports have highlighted the ways in which several indigenous youth are being forced to change their lifestyles, livelihoods, and culture to fit the changing climate patterns and ensuing alterations in the ecosystem (e.g. UNDESA, 2010; UNESCO & UNEP, 2011), with often significant implications on their physical and emotional health.

- *Extreme Weather Events*

Climate change is expected to increase the variability and unpredictability of regional weather patterns, resulting in intensified and more frequent extreme events (IPCC, 2007). Temperature extremes are already being witnessed in various countries, and are projected to increase in the next few decades, leaving today's youth with a myriad of ensuing difficulties (GHF, 2009; Houghton, 2004). In temperate countries where the majority of the world populations live, warmer temperatures may further increase the heat stress that populations living in these countries are exposed to. Temperatures rising beyond the rates of normal physiological coping capacity might affect body functioning, mood, and behaviour. High temperatures might be particularly troublesome for the most vulnerable population groups such as children, the elderly, sick people, and the young workforce. Exposure to such heat stress might cause dehydration, fatigue, and risky behaviour. Also, more frequent and intense heat-waves might cause deaths and diseases through heat strokes and respiratory failure (Kjellstrom, 2009; Robine et al., 2008). People with inadequate housing and health services, including half of all African youth, are the most likely to suffer from increased heat stress (Houghton, 2004; UNDESA, 2010).

In some cold countries, such as north-western Europe<sup>45</sup>, a warmer winter implies less exposure to extreme cold weather, and may conversely reduce the number of temperature-related deaths and other health events (Keatinge, 2000; McMichael & Lindgren, 2011). The other spectrum of such weather extremes – colder temperatures, may lead to increased rates of illness from increased influenza epidemics and seasonal changes in living conditions (Confalonieri et al., 2007;

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<sup>45</sup> Including the Netherlands

McMichael et al., 2004). Furthermore, extreme fluctuations in temperature could have a severe impact on agricultural production, as extremely high temperatures may reduce crop productivity or shift the seasonal variations of plants, whereas very low temperatures may lead to increased precipitation rates may damage field crops (Nelson et al., 2009).

Droughts and floods are also expected to become more frequent and severe in the future, especially in subtropical regions (WHO, 2009). Such weather extremes could aggravate already difficult living circumstances to vulnerable populations. The lack of water reduces the drinking and hygienic water supply, resulting in greater rates of illnesses and disease; whereas flooding can contaminate water with human and animal wastes. Such circumstances can increase the prevalence of diseases and health consequences related to poor nutrition and sanitation and dehydration (McMichael et al., 2006; Prüss-Üstün et al., 2004). Droughts can also lead to crop failure with less water available for irrigation and with resurgence of pests that harm crops and livestock (MEA, 2005; Nelson et al., 2009). This can lead to hunger and to the loss of farming jobs upon which numerous livelihoods are dependent. In addition, droughts and floods might also have social and psychological implications through forced dislocation of certain communities to other areas. Recent studies have warned against potentially increased rates of misery, depression and suicide from rising burdens, stress and post-traumatic shocks (Berry et al., 2010; EHP, 2008; Fritze et al., 2008).

Such physical, social, and psychological distress is also influenced by the resilience of the community through the presence of coping strategies and adequate social, political, and financial capital (Adger et al., 2007, 2009, Few, 2007). As most developing countries are projected to be hit hardest by extreme events as droughts and floods, their low adaptive and coping capacity can further compound the challenges posed by intensified weather extremes. For instance, more than a quarter of the world's youth live in countries with poor access to adequate sanitation, out of which 30-50% are located in the African continent (WHO & UNICEF, 2006). The compounding threats can exacerbate their living conditions by adversely impacting their livelihoods, health, and security. Even in countries with adequate sanitation and water facilities, extreme events may also damage physical infrastructure, disrupt

water supplies, or contaminate water resources; which ultimately impacts living conditions and public health (Costello et al., 2009; Palmer & Ralsanen, 2002).

- *Food Insecurity and Water Shortages*

Food insecurity is already widespread, with global estimates of more than 1 billion people undernourished (FAO, 2009). Multiple climate stresses are placing greater burdens over current agricultural systems, especially from water shortages, biodiversity loss, and soil exhaustion. Future projections based on modelling studies have shown that climate change would negatively impact global food yields, although unequally. Most tropical and subtropical regions are projected to suffer greater warming as well as reduced rainfall, hence increasing the risks of reductions in agricultural yields (Brown & Funk, 2008; Parry et al., 2004). Also, food insecurity is threatened through the depletion of ocean fisheries, which would affect fish supplies necessary for protein in-take and for sustaining livelihoods. The decline in fish populations is mainly expected in coastal Africa, large Asian river deltas, and several small-island states (Conway, 2009; MEA, 2005).

Food insecurity could have grave implications on the health and development of populations at-risk. *"This issue raises important concerns about hunger, poverty, health, and productivity—and therefore about broader prospects for human development."* (UNDESA, 2011; p.18). The health and livelihoods of low-income communities, which are largely dependent on agricultural yields for their subsistence and income, can be severely compromised (Desanker, 2002). As with several other climate impacts, food insecurity is projected to threaten the least developed countries, yet certain rich nations will also be affected. Rising temperatures and dry conditions might adversely impact food production in areas such as northern Australia and southern United States; although these countries are better equipped to deal with such risks (Confalonieri et al., 2007; Sandberg & Sandberg, 2010).

The compounding effects of food insecurity and water scarcity can severely aggravate livelihoods and health for vulnerable communities. Amongst the most vulnerable communities to food insecurity are the rural areas of Africa (FAO, 2009), in which more than half the population are youth (UNDESA, 2010). Their

particularly high-risk condition is due to their strong dependence on scarce water resources for food production and for drinking. Higher temperatures and lower precipitation levels may lead to water scarcity in several regions. The countries and regions at high risk, most of which are already water-scare, include the Sahel and Southern Africa, northern India, southern Spain and Italy, southern Australia, and mid-South America (Harmeling, 2011; Houghton, 2004). In addition to compromising food security through reducing farm yields, water shortages can increase illnesses such as diarrhoea and waterborne infectious diseases such as cholera. They can also impair domestic and community hygiene and sanitation (Prüss-Üstün et al., 2004). In extreme cases, the remaining available water resources could even create tensions and conflicts among different communities or countries, with inevitable dire health consequences (Barnett & Adger, 2007). Desertification is also projected to increase, with 40 percent of the Earth's land becoming dry or semi-arid regions, with dangerous consequences for the communities living in these areas (Houghton, 2004).

Therefore, young people in different national contexts will be impacted by food insecurity and water shortages to widely varying degrees. The youth living in developed countries have a relatively strong and stable economy which can buffer the impacts of lower food yields, in contrary to the conditions of numerous youth populations in poor countries who are dependent on such food sources for their livelihoods (IPCC, 2007; UNDESA, 2010). Furthermore, some studies have highlighted the gender differences in terms of impacts of food insecurity, indicating that young women are the most likely to suffer from such consequences due to distinct social and cultural norms in certain communities (Stern, 2007; UNICEF, 2008). For example, poor agricultural yields or droughts may force young women into more work to secure water, food, or income, thereby distracting them from education and the opportunity of better living conditions and prospect of development (UNESCO & UNEP, 2011).

- *Diseases and Other Health Effects*

The environmental, ecological, and socio-economic impacts of a changing climate can have serious implications for population health. As thoroughly discussed thus

far, climate change threatens public health by inevitably affecting the basic human requirements for health; namely clean air and water, adequate food and shelter, and stable livelihoods (Haines et al., 2000; WHO, 2009). The most immediate health risks would mainly be triggered by extreme weather events such as heatwaves, storms, and floods. Yet over the long-term, a wider range of health consequences might encompass changes in the patterns and distribution of various infectious diseases, changes in food yields and nutritional quality, and health problems from water shortages and pollution (McMichael et al., 2006).

### *Direct and Indirect Health Effects*

The potential health impacts of climate change can be grouped into direct and indirect impacts (McMichael & Lindgren 2011). The direct impacts mainly include increased illnesses & deaths from diseases & extreme weather conditions, as well as psychological disorders and damage to public health infrastructure from extreme weather events. For example, precipitation extremes, such as heavy rainfall or droughts might lead to outbreaks of certain diseases which threaten the health of vulnerable population groups, mainly by causing severe diarrhoea in children & death in immuno-compromised individuals (Confalonieri et al., 2007; Costello et al., 2009). Also, increased temperatures and reduced rainfall also impact the volume and seasonality of pollens and spores to which numerous people are allergic. This may lead to increased incidences of hay fever and asthma, especially among urban populations where the air is already congested (Kinney, 2008) and where the majority of the world's youth are located (UNFPA, 2009).

The indirect health impacts include changes in distribution and incidence of vector-borne (malaria and dengue fever<sup>46</sup>) and diarrheal diseases from water pollution and scarcity and changes in food production (crops); malnutrition and undernourishment (and resulting impairment to physical and mental development) from food insecurity; higher risks of infectious diseases from sea level rise (environmental refugees, damage to infrastructure); increase in cases of acute and chronic respiratory illnesses such as asthma and associated deaths (McMichael et al., 2004; Sala et al., 2008). For

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<sup>46</sup> Dengue fever is identified by the WHO as an endemic vector-borne disease to which more than 600 million young people might be exposed in the near future.

instance, the warming of sea and surface water temperatures can shift the species composition of certain types of algae towards production of biotoxins, which might reach humans through the food chain. Rising water temperature provides favourable conditions for the increase in transmission of cholera. Ultimately, "*climate change is a complex phenomenon entailing altered conditions and processes that can alter the rates, ranges, seasonality and patterns of injury, disease, and, death*" (McMichael, 2011; p.403). However, such health impacts and the projected changes in disease distribution, prevalence and transmission are greatly affected<sup>47</sup> by the local environment and ecological contexts. Important influencing factors entail land use patterns and urban growth, future patterns of social development, and the level of preparedness & preventive measures such as vector control & vaccination (McMichael, 2011).

Furthermore, the emotional and mental health of people might be greatly impacted by such grave changes and challenges. Young people may particularly suffer from such distress due to their long-term risk of exposure to environmental disruptions, shocks from extreme events, and the anxiety over current burdens and future risks. This could have negative implications on their personal and psychosocial health, can deter their academic and professional performance, and alter their overall sense of well-being<sup>48</sup> (Strazdins & Skeat, 2011).

It is also important to note that the health consequences of climate change would have negative implications for the achievement of the Millennium Development Goals (WHO, 2011). Climate change could greatly aggravate already debilitated environmental conditions and increase the rates of death, illness, and disease among the most vulnerable communities. However, the health impacts of climate change have only recently generated attention from scientists, epidemiologists, health professionals, scientists, and policy-makers (Haines et al., 2008; McMichael, 2011). The literature continuously highlights the difficulty of identifying health

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<sup>47</sup> For example, Haines et al. (2000) discuss the likely effects of climate change on distribution of vector-borne diseases. They analyze that while the transmission of certain diseases like malaria and dengue fever is projected to increase from doubling of atmospheric carbon dioxide, other diseases such as schistosomiasis are expected to decrease due to excessive warming of water bodies & regional dryness.

<sup>48</sup> Discussed further in Section 2.3.2

consequences that can be reasonably linked to climate change, especially within the interplay of multiple, and often more direct or visible, factors such as nutrition, sanitation, and lifestyle. Nevertheless, continuous scientific models and projections are establishing stronger links between certain health outcomes and climate change, and are identifying potential trends and projections for geographic distribution and timescale of potential health threats in the future. Particular emphasis is often placed on the impacts of climate change on public health and disease incidence and transmission (McMichael; 2011; St. Louis et al., 2008). For example, studies have projected future rise in the transmission of diseases such as cholera and malaria, and increases in rates of malnutrition due to projected falls in food yields (Gage et al., 2008). Other studies have focused on the health consequences of extreme weather events such as droughts, floods, and heatwaves (Berry, 2010; Hajat, 2010; Chand & Murray, 2008). The potential impacts of climate change on health have also been reviewed by the IPCC (Confalonieri et al., 2007) . However, wide uncertainties remain regarding the range and magnitude of health impacts from climate change, and a stronger evidence base is needed for addressing such health aspects in climate change policy (Ganten et al., 2010; Haines, 2008).

Finally, the impacts of climate change go far beyond the damage to the physical environment to cause severe disruptions to socio-economic sectors and risks to public health, as discussed below.

- *Social and Political Disruption*

Climate change threatens to displace people and communities through a wide range of consequences to people's livelihoods. Water insecurity, low agricultural productivity, coastal inundation, and extreme weather events could force people to move to safer locations within countries as well as across international borders. The UN High Commission for Refugees (2008) has indicated that the main communities at risk of displacement are the poor urban communities located in high-risk areas to floods, storms, and droughts and with low adaptive and public health capacities. In addition, climate-induced migration<sup>49</sup> might result in overpopulation, as people are

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<sup>49</sup> There is no consensus yet on the definition and measurement of climate-induced migration.

forced to relocate to other areas, especially suburban and urban slums. This can further increase stress over limited natural resources and social infrastructure; *"highly vulnerable locations, poor housing materials, limited access to infrastructure and lack of secure tenure make people in urban slums among those most likely to experience severe climate impacts"* (WHO, 2011).

Displacement can severely impact people's health, livelihoods and overall quality of life. As explained by McMichael (2011; p 12): displacement *"...entails increased risks to health from undernutrition, infectious diseases, conflict situations, mental health problems – and from changes in health-related behaviours such as alcohol consumption, tobacco smoking..."* At particular risk are the younger generations, who are in the phase of integration into productive society, and are often faced with pressures for generating income and achieving livelihood stability (UNDESA, 2010; WHO, 2011). In particular, several indigenous communities, and increasingly their youth, are being forced to relocate to other areas to sustain their livelihoods. Recent studies have indicated that, due to their strong relationship with their environment and cultural context, permanent displacement can leave significant physical and psychosocial impacts on these youth, as they are forced to disconnect from their traditional diets, norms, lifestyle, and even their overall cultural and linguistic traditions over the long term (Borrows, 2006; LaDuke & Alexander, 2004).

Furthermore, increased resource scarcity, disruption of the ecosystem, and the circumstances surrounding displacement can also generate conflicts among different communities, social groups, or even nations (Ohlsson, 2000; UNEP, 2009). In particular relation to youth, climate change can trigger conflicts amongst youth through exacerbating multiple factors such as unemployment, social and political exclusion, dissatisfaction with public services, and the lack of family and social support systems and networks (USAID, 2005). *"Prolonged conflict has direct and indirect health consequences relating to displacement, the breakdown of health and social services, and the heightened risk of disease transmission. Any threat climate change poses to youth development is likely to be aggravated by drawn-out conflicts"* (UNDESA, 2010; p.26).

The detrimental effects of potential climate risks to populations worldwide require devising appropriate response strategies to secure people's lives, livelihoods, and overall quality of life. Yet as repeatedly highlighted through this section, the threats from climate change are disproportionately distributed; hence vulnerability as well as adaptability are similarly unequal across different countries and communities. The factors shaping vulnerability and the main climate response strategies, including adaptation and mitigation issues, are briefly discussed below.

### **2.2.3 Vulnerability and Response Strategies: Importance of Youth Participation**

Vulnerability<sup>50</sup> to climate change can be described as: "*the ability or inability of individuals or social groups to respond to, cope with, recover from or adapt to, any external stress placed on their livelihoods and well-being*" (Babugura, 2010; p.16). Three main factors shaping the level of vulnerability entail exposure, sensitivity, and adaptive capacity<sup>51</sup> (IPCC, 2007). Vulnerability therefore encompasses physical, social, economic, and political dimensions that shape individuals and communities' ability to cope with and respond to the climate changes. As explained by Adger et al. (2007; p.720), "*the vulnerability of a society is influenced by its development path, physical exposures, the distribution of resources, prior stresses and social and government institutions*". In general, countries most vulnerable to climate change are also the poorest, often suffering from a myriad of challenges such as political instability, poor governance, and weak economies. These countries are also less equipped to manage the interlinked and far-reaching climate threats (Jones, 2001; Kelly & Adger, 2000). Yet despite the rising challenges of climate change to human populations worldwide, it has long been viewed mainly as an environmental problem. Human and social vulnerability have often been neglected and have only recently become the focus of attention in research and policy. As stated in the

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<sup>50</sup> Vulnerability can imply the extent of exposure to a threat (susceptibility) and the capacity to cope with or recover from its consequences (resilience).

<sup>51</sup> Exposure relates to the presence of a hazard or risk. Sensitivity relates to the responsiveness to a climate hazard. Adaptive capacity relates to the ability to change in ways that enable the adequate management of exposure and sensitivity to climate hazards or coping with adverse impacts (IPCC, 2007).

‘Human Impact Report: Climate Change. The Anatomy of a Silent Crisis’: "*this is reinforced by pictures of glaciers and polar bears – not human beings*" (GHF, 2009; p.3).

Furthermore, scientific studies confirm that even if climate change is drastically tackled now, particularly in terms of reduction in greenhouse gas emissions, the impacts of climate change will not be totally eliminated. Various impacts are already being observed in several parts of the world (Houghton, 2004; IPCC, 2007). Consequently, the debate of justice and equality in relation to climate change is raised to another level, that of preparedness and response systems to the multiple threats posed by climate change. Devising adequate response strategies is necessary for facing rising climate challenges, and the focus on the public health aspect is imperative for the long-term sustainability of people's quality of life (Frumkin & McMichael, 2008; Maibach et al., 2010). Climate responses are generally grouped into two main categories. The first is mitigation<sup>52</sup>, which is mainly concerned with reducing greenhouse gas emissions to lower the magnitude of future risk. The second is adaptation, which is mainly concerned with making adjustments to reduce vulnerability or enhance resilience to respond to present or projected climate impacts (IPCC, 2007; O'Brien et al., 2007). Adaptation is therefore more relevant to the themes explored in this study<sup>53</sup>, and will be the focus of the remainder of this section.

Adaptation strategies mainly encompass changes in ecological and human systems such as adjustments to environmental structures and changes in social processes and behaviours. Adaptation measures can be taken by individuals, businesses or communities, but are generally undertaken by governments, most often in response to experienced impacts such as extreme weather events. Such adaptation initiatives are often integrated into wider sectoral programmes such as plans for managing natural resources or for disaster preparedness, and initiatives linked to sustainable development (Adger, 2003; Adger et al., 2007).

### *Poverty and Extension of Inequalities Between North and South*

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<sup>52</sup> Mitigation strategies can entail technological innovation, renewable energy sources, promoting electric cars, carbon markets, etc. (Sandberg & Sandberg, 2010).

<sup>53</sup> In terms of youth engagement as key stakeholders

With the existing climate inequalities, adaptive capacity is unevenly distributed across countries and within communities, generally taking its toll on the poorest countries with limited resources and unlimited challenges. Adaptive capacity is often influenced by specific contextual settings - *"the capacity to adapt is dynamic and influenced by economic and natural resources, social networks, entitlements, institutions and governance, human resources, and technology"* (Adger et al., 2007; p. 719). Accordingly, several barriers exist to implementing adaptation in impoverished communities and nations, ranging from existing knowledge gaps on adaptation, to financial and technological limitations and socio-cultural constraints, to the low potential of natural systems to adapt to rapid changes (Lim et al., 2005; Nielsen & Reenberg) . The existence of multiple stressors, such as land degradation, public health concerns, conflicts, and low public awareness and education, also undermine poor countries' capacity to adapt (Agrawala, 2005; McCarthy & Longmartello, 2005; Schipper, 2004). At a national level, determining adaptive capacity is *"an area of contested knowledge"* (Adger et al., 2007., p.728). More recently, emphasis is being placed on social and contextual dimensions that influence vulnerability and adaptive capacity (Alberini et al., 2006; Moss et al., 2001). This highlights the importance of stakeholder empowerment and meaningful participation in devising and implementing adequate climate adaptation measures relevant to each context- *"impacts of climate change affect various domains of human societies. Because of its multi-thematic and multi-sectoral nature, adaptation to climate change impacts should happen as a joint effort of equitable stakeholders from civil society, business and government"* (Prutsch et al., 2010; p.11). It also highlights the importance of partnerships and collaborations between rich and poor countries through investing in much needed financial and technical development, green technologies, and local capacity building (Burch & Robinson, 2011).

Adaptive capacity is therefore shaped by access to contextual factors such as human and social capital, natural resources, and physical and financial capital. The importance of involving all stakeholders implies the need for adaptation strategies to include provisions for communication and education on climate change, its potential impacts, adaptation options and tools, and good practice examples (Fazey et al., 2007). Successful plans and strategies for adaptation need to encompass wider

developmental measures that empower people to take action and that reduce short and long term vulnerabilities (Huy, 2010). *"An enabling institutional environment that empowers people and allows them to gain access to the resources they need for their well-being and for the resilience of their livelihoods is therefore critical for adaptation"* (WHO, 2011; p.23).

- *Climate Vulnerability and Youth Participation*

Whether by choice or obligation, young people are key stakeholders who will be facing climate challenges throughout their lives, albeit to varying degrees of vulnerability and adaptive capacity. It is therefore essential to build their knowledge and skills to face the rising climate threats (Bokova, 2010; El Ansari & Stibbe, 2009). It is also pivotal to actively involve youth in the responses to climate change, particularly in the development and implementation of long-term adaptation plans and in the advancement of sustainable and technological solutions (Hayden et al., 2011). As emphasized by the UNFPA's report on climate change and youth (2009; vii): *"young people should not be limited to being beneficiaries of adaptation and mitigation efforts; we have to give them the opportunity to play an active role in the formation and implementation of responses, if the responses are to be sustainable."*

In addition, young people will increasingly need to manage climate challenges as part of their jobs. Climate change would variously impact rates and patterns of employment, both in negative and positive ways (ILO, 2012; Lyndoh, 2005). In its review of the impacts of climate change on young people's livelihoods, the UNDESA (2010) explains that: *"rates of unemployment are already higher among youth than among adults, and with most of the world's young people living in areas where dependence on natural resources and persistent poverty intersect, climate change could pose a serious threat to youth livelihood patterns and economic stability."* (p.20). The adverse impacts are more likely to be felt by youth living in developing communities, most of whom are dependent on agricultural production, as opposed to youth in developed nations who *"tend to be overrepresented in the service sector, which is less likely to be affected by changing weather trends"* (UNDESA 2010; p.22), particularly over the short term. Nevertheless, climate change can also create new opportunities for green jobs and performance innovation,

which higher education youth in particular are best positioned to undertake. The importance of meaningfully engaging youth in the responses to climate change and in developing a green economy, are further discussed in Chapter 3. The next section discusses the importance of exploring the short and long term implications of such complex climate challenges on young people's well-being.

### **2.3 UNDERSTANDING WELL-BEING**

This thesis has established an understanding of the rising threats from climate change, which are gaining unprecedented focus whether at the level of scientific research and public health debate, political lobbying and legislation, or media attention and public awareness. The previous section has captured the enormity and complexity of challenges posed by climate change to populations worldwide. With its wide-ranging impacts across all sectors of life, and its short and long-term risks, climate change will particularly challenge young people. Today's youth, whose future and the future of their children are at stake, will need to deal with the climate impacts and risks which are projected to become more extreme, more frequent, and more widely distributed (GHF, 2009; IPCC, 2007). In addition, youth carry the responsibility and pressure for living more sustainable lifestyles and for participating in efficient climate response strategies to secure a sustainable future. In particular, the climate crisis will burden higher education youth who constitute the main pillars of current and future social development, innovation, and pathways to sustainability (Hardy et al., 2005). Such multiple domains of climate vulnerability and responsibility could have important implications on young people's health, capabilities, quality of life, and overall well-being.

The concept of well-being is considered in this study to encompass various dimensions of young people's present and future lives, and at various levels that may entail personal, social, and active domains. Enhancing knowledge on the potential implications of climate change on youth well-being can inform policymaking that is relevant to particular contexts (Bowen et al., 2012). As explained by Newton (2007; p.7): *"in a number of contexts a wellbeing focus has promoted an increased awareness and recognition of the combined effects of social, economic and environmental factors. It has helped to promote joint working and a more holistic*

*approach to policy making*". This section seeks to address themes of climate change and youth well-being, first by providing an overview of the concept of well-being, then by clarifying its applicability and significance in this study.

### **2.3.1 Definitions and Dimensions of Well-Being**

Well-being is a broad concept that has been defined and categorized in different ways across various bodies of literature, with no specific definition or agreed dimensions - "*well-being is a complex construct whose meaning remains contested*" (McAllister, 2005; p.5). In general, the literature often distinguishes between dimensions of well-being that can be subjective or objective, hedonic or eudaimonic, positive or negative, of global or local relevance, and a state or a process (Diener & Seligman, 2004; El Ansari et al., 2011; Hamilton & Redmond, 2010).

First, a main characterization of well-being is across subjective and objective dimensions. Subjective dimensions are mainly concerned with people's personal assessment of their happiness, satisfaction, and overall life circumstances, based on their own perspectives and feelings. It often entails elements relating to personal emotions (happiness, self-esteem, self-realization, hope); health (physical, mental, psychological, exercise, sleep, functioning); and socio-economic status (social relationships, trust and belonging, religion, education, opportunity, and employment). Objective dimensions are focused on attributes which are considered important for enhancing or impairing individual or group well-being. These attributes can be physical/material (e.g. access to resources, environmental conditions, education, healthcare, income and employment), and social (e.g. interactions with others, support system) (Felcy & Perry, 1995; Hird, 2003). Studies that undertake a subjective approach to well-being are often based on survey questions with self-assessed responses by participants. This approach is therefore important for reflecting people's feelings about their own lives. Yet it poses limitations of exploring the emotional aspects of well-being as well as problems of reliability due to different understandings of happiness or life satisfaction by different people and across diverse cultures. Objective approaches are important for providing baseline data about people's health, living conditions, and overall quality

of life. However, the personal and experiential aspects of well-being to date are not deeply explored (McAllister, 2005; Newton., 2007).

Second, some researchers have sought to categorize hedonic and eudaimonic approaches to wellbeing (e.g. Carlisle & Hanlon, 2008; Kahneman et al., 2003; Keyes et al., 2002; Ryan & Deci, 2001). The hedonic approach considers well-being to mainly consist of pleasure or happiness. Most research focusing on the hedonic categorization has therefore been concerned with assessing subjective wellbeing through three main components<sup>54</sup>; life satisfaction, presence of positive mood, and the absence of negative mood (Diener & Lucas, 1999). The eudaimonic approach extends beyond happiness to focus on the actualization of human potential and achieving a sense of purpose and meaning (self-realization). Ryan and Deci<sup>55</sup> (2001) have further argued that fulfilling eudaimonic well-being is achieved through the satisfaction of three psychological needs; autonomy<sup>56</sup>, competence<sup>57</sup>, and relatedness<sup>58</sup>. They partly build on the work of Ryff (1989) who discusses six main components encompassing psychological well-being; namely autonomy, environmental mastery, positive relationships, personal growth, self-acceptance, and purpose in life. "*Fulfilling these needs is presented as the natural aim of human life which influences many of the meanings and purposes behind human action*" (Newton, 2007; p.6). Therefore, research into the eudaimonic approach to well-being is often related to psychological well-being and positive mental health.

Third, the literature also argues whether well-being can be seen in positive or negative terms. Positive approaches are focused on people's capabilities, such as their confidence, resilience, happiness, sense of belonging, and good social skills (Bernard et al., 2007; Cummins, 2003; Tick et al., 2007). In specific consideration of youth, Hawkins et al. (2009) also emphasize *civic action and engagement*, trust in others, social competencies, and overall life satisfaction. Positive approaches also focus on protective environmental factors that promote well-being, such as a safe and healthy environment, good social relations, and financial security. Negative approaches are mainly concerned with behavioural problems such as disruptive or

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<sup>54</sup> Collectively, these three components are often referred to as 'happiness'.

<sup>55</sup> Self Determination Theory (SDT)

<sup>56</sup> Having a sense of control over one's life

<sup>57</sup> A sense that one is functioning effectively

<sup>58</sup> Having positive social interactions/relationships

risky behaviours, academic or professional underachievement, and poor mental health such as anxiety or depression (Bernard et al., 2007; Smart & Vassallo, 2008). Negative approaches often look into environmental risk factors that may influence personal, emotional, or social well-being, such as the lack of access to basic resources, social isolation, or unemployment. Several approaches to investigating or measuring well-being utilize both positive and negative approaches (Goodman, 1997; Hoi Shan et al., 2008).

Fourth, approaches to understanding well-being have also taken perspectives across the continuums of global or local relevance and of well-being as a status or a process. On the one hand, for instance, Nussbaum (2001) views well-being as a certain level of human functioning, arguing towards healthy functioning, which she considers *“is itself a way of being active, not just a passive state of satisfaction”* (p.14). Nussbaum is critical of subjective and personal perceptions of well-being, rather emphasizing objective approaches to its understanding and evaluation. She thereby proposes an approach that is of global relevance for *“every citizen in every nation”* (p.6), which entails a set of basic and interdependent human capabilities that should guide social functioning and policy formulation (Hamilton & Redmond, 2010).

On the other hand, White (2008) conceptualizes well-being as a dynamic and multi-dimensional process, and emphasizes localized and subjective concepts with three integrated dimensions; subjective, material, and relational. White indicates that well-being is a culturally-defined and constantly changing relational process, rather than a static or general state. The subjective dimension of well-being is concerned with elements such as people's values, perceptions, sense of meaning, satisfaction, and trust. She also considers such elements to be socially, culturally, and temporally constructed, hence emphasizing the importance of context and personal and social relationships. Hamilton and Redmond (2000) provide further insight into White's perspective regarding well-being as a dynamic process; *“because of the way subjectivity is developed in the context of wider normative frameworks of social meaning, the way in which relationships are ‘realised’ in social practice, and the way in which the three dimensions are dynamically constructed in relationship with each other, she describes wellbeing as a process rather than a status... For her, people’s understanding of wellbeing and views about their capacity to ‘achieve’ it*

*are shaped by the physical and cultural geography of the spaces and places they inhabit" (p.14).*

Within such arguments, it is also important to note another important stance established early in the literature, namely Sen's capabilities approach. Sen (1985)<sup>59</sup> places particular focus on functionality and capability, arguing that; "*the central feature of well-being is the ability to achieve valuable functionings*" (p. 200). This approach emphasizes human freedom, democracy, and agency, which enable people to make choices that influence their own lives and the lives of others. Sen therefore considers well-being to be multi-dimensional, encompassing material aspects as well as social relationships, political freedom, good health and education, and a safe and supportive environment, all of which increase people's capability to achieve well-being (Spence et al., 2011).

Finally, some studies by research institutes have also sought to establish clear distinctions between the domains and drivers of well-being. For instance, the New Economics Foundation (nef, 2011) considers well-being to incorporate both feelings and functionings, but argues that personal resources and external conditions are considered as drivers rather than constituents of well-being. Another example is the Eurostat study for measuring well-being, which identifies subjective well-being and life expectancy as key constituents, whereas external factors such as education, employment, and healthcare are seen as drivers of well-being (Eurostat, 2010). In another example, Hall (2010) considers well-being to be supported by three main domains; the economy, culture, and governance. Hal states that; "*having a strong economy, effective governance and vibrant culture is not well-being in itself, but these factors do – typically – provide an enabling environment in which human well-being will improve*". Also, in his discussion of individual and social dimensions of well-being, Hall (2010) identifies a set of attributes that characterise the kind of life that each person pursues, and their level of freedom (with freedom used in the sense of Sen who takes it to be the range of opportunities open to people). Individual dimensions would thereby entail attributes that are specific to each person such as personal health or knowledge, self-worth, and fear/concern over life and security.

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<sup>59</sup> Sen's approach is widely used in human rights literature. It underpins the Human Development Index devised by the United Nations Development Program (UNDP, 2009).

Social dimensions encompass attributes that are shared with others such as social relationships, housing and employment opportunities, and the extent to which a community is resilient and cohesive.

Table 1 presents various definitions and categorizations applied to the concept of well-being in current literature.

Author(s)	Definitions and Categorizations of Well-Being
Dodds, 1997	<ul style="list-style-type: none"> <li>-State of mind (happiness &amp; satisfaction)</li> <li>-State of the world (satisfaction of preferences such as purchasing power and basic needs such as health, longevity, access to resources)</li> <li>-Human capability ("doing" related to freedom &amp; "being" related to achievement)</li> <li>-Satisfaction of underlying needs, relating to Maslow's hierarchy of needs(physiological, safety, belonging &amp; care, esteem, aesthetic &amp; cognitive).</li> </ul>
Sen, 1999	<ul style="list-style-type: none"> <li>- Capabilities to achieve valuable functionings, i.e., 'the various things a person may value doing or being' (p.75)</li> <li>- Capabilities to 'substantive freedoms to achieve alternative functioning combinations' (p.75).</li> </ul>
Nussbaum, 2001	A set of capabilities to which all societies should aspire and policies be aimed at. The capabilities include life; bodily health; bodily integrity; senses, thought and imagination; emotions; practical reason; affiliation; other species; play; control over one's environment
OECD, 2001	<p>Well-Being of Nations Report identifies three layers of well-being;</p> <ul style="list-style-type: none"> <li>- Human well-being (individual and societal preferences concerning equality of opportunities, resources, and education)</li> <li>-Economic well-being (enjoyment of civil liberties, clean environment, individual state of mental and physical health)</li> <li>- Gross domestic product (measures economic well-being)</li> </ul>
Easterlin, 2003	<i>'I take the terms wellbeing, utility, happiness, life satisfaction and welfare to be interchangeable'</i>
Diener and Seligman, 2004	Wellbeing is "peoples' positive evaluations of their lives; includes positive emotion, engagement, satisfaction, and meaning" (p.1).
Lawson, 2005	-Provisions for optimal human development

	<ul style="list-style-type: none"> <li>-Strong families &amp; supportive communities</li> <li>-Political &amp; socio-cultural equality</li> </ul>
DEFRA, 2005	<ul style="list-style-type: none"> <li>- Objective lists (quality of life &amp; basic needs)</li> <li>- Preference satisfaction (revealed wants &amp; desires)</li> <li>- Hedonic (pleasure, emotions, feelings)</li> <li>- Cognitive satisfaction</li> <li>- Flourishing (satisfaction of certain psychological needs)</li> </ul>
Carlisle and Hanlon, 2008	Hedonic (happiness/pleasure) and Eudiamonic (virtue/ human flourishing) well-being
White, 2008	Well-being consists of three inter-related dimensions; material, subjective, and relational.
Hall et al., 2010a	<ul style="list-style-type: none"> <li>- Physical and mental health</li> <li>- Knowledge and understanding</li> <li>- Work</li> <li>- Material well-being</li> <li>- Freedom and self-determination</li> <li>- Interpersonal relationships</li> </ul>
Hamilton and Redmond, 2010	Social and emotional wellbeing is a broad term that includes feelings, behaviour, relationships, goals and personal strengths ... Wellbeing might be displayed differently depending on culture, temperament and individual differences (p.5)
nef, 2011	<p>Personal factors measure people's experiences of their positive and negative emotions (satisfaction, resilience, self-esteem, sense of positive functioning).</p> <p>Social factors measure people's experiences of supportive social relations and sense of belonging</p>

*Table 1: Definitions and Dimensions of Well-Being Across the Literature*

Finally, the importance of enhancing the understanding of personal and social well-being has been emphasized for guiding future policies, particularly in relation to sustainable development. For example, the UK 2005 sustainable development

strategy<sup>60</sup> highlights the need for ensuring that wellbeing issues are being addressed in an adequate and consistent manner. The strategy committed the government to enhance the understanding on wellbeing by sponsoring “*cross-disciplinary work to bring together existing research and international experience and to explore how policies might change with an explicit wellbeing focus*” (DEFRA, 2005; p.23). Similarly, McAllister (2005; p. 6) indicates that; “*wellbeing is an important area for future policy as it accounts for elements in life experience that cannot be defined, explained, or primarily influenced by economic growth.*”

In direct relevance to climate change, WHO (2011) indicates that most impact assessments and evaluations limit their focus to impacts on environmental and physical infrastructure. It stresses that climate change can affect a much wider range of sustainable development issues – such as health, food security, employment, incomes and livelihoods, gender, equality, education, housing, poverty, and mobility. Also, the nef project, which explores the links between wellbeing and sustainable development, identifies climate change as most adversely impacting physical and psychological well-being at local as well as global levels (Marks et al., 2006). Accordingly, the importance of exploring the links between climate change and youth well-being, as identified in current literature, is discussed in the next section whilst also highlighting the knowledge gaps in this area. This is followed by a clarification of the conceptualization and application of well-being in this particular study.

### **2.3.2 Importance of Exploring the Implications of Climate Change on Youth Well-Being**

As discussed in the previous section, well-being can entail multiple aspects of people's lives, extending beyond the immediate physiological and emotional effects to entail reasoning, functioning, and overall quality of life (Carlisle & Hanlon, 2008; El Ansari et al., 2011). The various domains of climate vulnerability may ultimately impact young people's well-being in different ways, whether in terms of their physical health and security, emotional health and mental concern, socio-economic conditions and life satisfaction, and overall performance and autonomy (DEFRA,

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<sup>60</sup> Securing the Future

2007 , Guite et al., 2006 ; Haines et al., 2000 ; Patz et al., 2005). This thesis has already considered, in its discussion of climate impacts in Section 2.2.2, the potential consequences on the lives of youth. The segment below seeks to link in greater detail the aforementioned discussion with the wider and multi-dimensional concept of youth well-being, by highlighting the knowledge base and gaps in this area.

### *Youth Well-Being and Climate Change: An Overview of the Literature*

Young people are considered to be at the forefront of the enormous threats as well as the innovative responses to climate change. It is important to emphasize the wide range of risks to which they are exposed, and the escalating challenges that they need to manage throughout their lives. As discussed throughout Section 2.2.2, the multiple impacts of climate change can; a) endanger young people's physical, emotional, and psychosocial health; b) disrupt their livelihoods and their social relationships; and c) pose challenges to their actions, lifestyle, and overall performance. The paragraphs below address these different dimensions of young people's well-being, giving examples of relevant studies and highlighting the knowledge gaps. The aim is to demonstrate the significance of enhancing the understanding regarding the influence of different forms and levels of engagement with climate change on young people's well-being. Accordingly, the importance of considering the contextual setting and of applying a comprehensive research approach when studying well-being, is also deliberated.

#### a) Climate Change Endangers Youth Health

Young people's physical health and safety can be threatened by the consequences of extreme weather events and natural disasters, and the ensuing rise in infectious diseases, in food and water shortages, and intense temperature fluctuations. McMichael (2011) particularly attests to the rising challenges for human health; "*nearly all of the other adverse impacts of climate change (food yields, water flows, sea-level rise, infrastructural damage, etc.) will converge on human biological well-being*" (p. 411). Also, environmental extremes and climate shocks might trigger mental and emotional disorders amongst youth who experience them, or even develop psychological and mental distress amongst youth who are situated in high risk areas (Costello et al., 2009; Fritze et al., 2008; Page & Howard, 2010).

Several studies investigating climate change impacts on physical health aspects have taken quantitative approaches, presenting statistical analysis of climate-related diseases and public health vulnerabilities (e.g. Haines et al., 2000; Patz et al., 2005 ; St. Louis & Hess, 2008). Other studies have focused on direct emotional and psychological effects that could be direct (acute anxiety disorders, heat-related stress, anxiety over infectious diseases outbreak) and indirect effects (mental agony/illness caused by environmentally-forced displacement, chronic mood disorders, damage to livelihoods) (e.g. Berry et al., 2010 ; Fritze et al., 2008 ; Chand & Murthy, 2008). Also, Albrecht (2005, 2012) has pinned the term 'solastalgia' to describe the psychological distress that people feel when their surrounding natural environment is threatened or changed for the worse. Consequently, wider environmental changes might elicit similar emotional and mental responses amongst people exposed. Yet according to the American Psychological Association, even in the absence of direct impact or personal experience, mental health might be threatened by the perception and fear of climate change (Swim et al., 2009).

Nevertheless, the mental and emotional aspects of health in relation to climate change remain novel research domains (Fritze et al., 2008), and insight into such dimensions is gradually being generated. For instance, Tschakert and Tutu (2010) emphasize the importance of considering the long-term health consequences of climate change; "*while substantial research has been conducted on health concerns related to climate change, including water-borne and insect-borne diseases, the psychological and emotional distress and pain triggered by slow-onset, creeping environmental transformations have been largely ignored*" (p. 57). Recent studies have also highlighted the need for addressing the comprehensive health impacts of climate change on young people in particular (e.g. Starzdins & Skeat, 2011; WHO, 2011). For example, Starzdins and Skeat (2011) point out to the lack of knowledge regarding the social, emotional, and health impacts of climate change on children and young people.

#### b) Climate Change Disrupts Youth Livelihoods and Social Relationships

Climate-related disasters can damage physical and social infrastructure and other socio-economic sectors that sustain youth health and livelihood, such as agricultural systems, energy and communication systems, utilities, and health services

(UNFCCC, 2007; WHO, 2011). Furthermore, climate impacts might also reduce economic growth and weaken socio-economic conditions, especially amongst young people with limited employment opportunities in their community or country. Threats to economic systems often lead to lower employment opportunities and poorer working conditions, which can be particularly troublesome for young graduates searching for jobs. The relationship between unemployment and health is quite significant and reciprocal. For example, Alvaro and Garrido (2003) indicate that unemployment can cause deterioration of mental health and social and emotional well-being; whilst poor mental health and emotional well-being may prolong unemployment.

Moreover, climate change threatens to trigger social and political instability over natural resources and forced migration to safer locations, all of which can significantly debilitate young people's health, livelihoods, and social cohesion. Doherty and Clayton (2011) summarize the main psychosocial impacts of climate change to include; *"large-scale social and community effects of issues such as heat-related violence...conflicts over resources...migrations and dislocations...postdisaster adjustment...and chronic environmental stress"* (p.265). Finally, O'Brien et al. (2004) criticize the lack of emphasis on local contexts of well-being and quality of life in studies on climate vulnerability. They stressed the importance of considering the often-disregarded indirect climate impacts, which go beyond provision of basic resources and economic stability to entail aspects such as sense of belonging, sense of control over one's destiny, and socio-cultural heritage.

#### c) Climate Change Challenges Youth Actions, Lifestyles, and Overall Performance

Young people's well-being may be also impacted as they attempt to cope with climate challenges by shifting their lifestyles, changing their socio-cultural practices, and striving to maintain their economic stability and physical security. Consequently, climate risks may not only challenge young people's personal well-being, but may also overburden diverse aspects of their development and productivity. For instance, several active and interactive dimensions have been found important for well-being, including feeling engaged in meaningful and challenging

activities (Csikszentmihalyi, 1997); the willingness to learn new things and to be actively involved in activities (Kashdan et al., 2004); and adaptability, having goals and the ability to work towards them and having a meaningful and manageable perspective of one's life and of the world (Anand et al., 2005; Eckersley et al., 2005).

Moreover, the cultural, organizational, and technological changes in response to the rising climate challenges might exert additional pressure on these youth, and develop their capabilities to cope with such changes requires that they be exposed to adequate learning and capacity building opportunities. Ayres and Agius (2004) identify that for a sustainable community to exist, factors such as education, social inclusion, lack of poverty and quality housing are necessary. Similarly, OECD (2001) recognizes the importance of equal opportunities regarding education and resources for the community to be successful. Hence, the availability of such forums and pathways that can empower young people to actively participate in devising and applying such changes is critical for enhancing their well-being. Nussbaum (2000) discusses 'control over one's environment' and 'political capabilities' as central functional capabilities that can enhance well-being. She argues towards; "*being able to participate effectively in political choices that govern one's life; having the right of political participation, protection of free speech and association*" (p.80). For instance, the Canadian Index of Well-being, aimed at helping to engage Canadians in finding a way of change for their future, emphasizes the importance of citizen engagement and community vitality as factors that determine health, well-being, and development (CIW, 2012).

Also, climate change can instil fear or mental worry amongst young people who are concerned of its impacts in their future and unable to adapt or otherwise protect themselves (Fritze et al., 2008). Feelings of fear or loss of faith in society and in the future can shape the ways in which people see their role in society and their relationship to its various entities, including their fellow citizens and the government. For example, having a negative or pessimistic perspective can cause some people to disengage from community or to refrain from active civic participation and overvalue materialistic and individual development, which may debilitate their well-being in the long term (Doherty & Clayton, 2011; Eckersley et al., 2005). In this sense, Starzdins and Skeat (2011; p.14) state that; "*people's*

*concerns about the future of the world and humanity also matter to social cohesion and capital. The erosion of faith in society and its future shapes the way people see their roles and responsibilities, and their relationships to social institutions, especially government.*" Starzdins and Skeat also highlight the poor understanding regarding young people's fears and worries and the ways in which these influence their mental health, school performance, physical activity, social engagement and participation.

Current literature lacks insight into the influence of climate change on young people's academic and professional performance and their capability to conduct different activities and functions effectively (Starzdins & Skeat, 2011; UNDESA, 2010). Such knowledge gaps further stress the need for deeper & wide-ranging research that looks specifically into the well-being implications of climate change. For instance, Hamilton and Redmond (2010) refer to a key education document<sup>61</sup> developed by state and Commonwealth Education Ministers, which emphasizes the importance of adequate education and learning, creativity and confidence, and youth as active and informed citizens in improving their well-being. According to the Melbourne Declaration, confident and creative individuals "*have a sense of self-worth, self-awareness and personal identity that enables them to manage their emotional, mental, spiritual and physical wellbeing*" (MCEETYA, 2008; p.9). This reflects the importance of adequate and meaningful participation for enhancing youth well-being.

Therefore, exploring the short and long-term implications of climate change on youth well-being can provide deeper insight into such important dimensions of young people's lives. It would also help inform future policy-making by filling some of the gaps in this knowledge, as further explained below.

### *Contextual Influences on Well-Being*

The discussions so far have demonstrated the importance of recognizing that the climate risks extend beyond a certain point in time or geographic location, and are likely to be unevenly distributed across countries and communities and among social groups (IPCC, 2007). Important factors influencing young people's vulnerability

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<sup>61</sup> Melbourne Declaration on Educational Goals for Young Australians

entail their geographic location, living conditions, level of personal and national resilience, education, etc. Consequently, inequalities in human well-being and ecosystem conditions within and across different communities, geographical regions, and between generations can generate similar inequalities in young people's well-being and their surrounding ecosystem conditions (MEA, 2005). For instance, Hall et al. (2010a) state that; "*the well-being of a society also depends on the way in which the various items that shape people's lives are distributed in society and that it cannot be assessed without considering its sustainability over time, i.e. the well-being of the future generations*" (p.15). Young people's well-being can be largely influenced by their surrounding physical and socio-cultural environment, and can shape their perspectives, values, actions, and social relationships (Currie et al., 2004; Fischer & Van de Vliert, 2011). For instance, White (2008) indicates that people's actions are inherently subjective, and underscores the importance of context and social interactions in continuously constructing and reconstructing well-being. Also, Donovan and Halpern (2002) indicate that "*the meaning of terms such as happiness or satisfaction is preserved across languages, but place and political regime affect individuals' rating of wellbeing*" (p.8).

Hence, it is important to consider the contextual setting when studying the implications of climate change on youth well-being. The diversity of concepts, dimensions, and contexts of well-being manifest the importance of undertaking a comprehensive research approach that captures young people's personal, social, and experiential well-being whilst considering the specific contextual setting. This would enable the attainment of a more in-depth and contextual understanding of the implications of climate change on well-being. Further discussions regarding the relevance of a comprehensive research approach are addressed below.

#### *Importance of a Comprehensive Research Approach*

As a critical population group continuously facing the climate challenges, young people may have important insights into issues of wellbeing which are unlikely to be captured through survey questions or understood through numerical data. Such insights require in-depth and contextual research related to subjective, personal, and experiential perceptions of well-being (Hamilton & Redmond, 2010; Hird, 2003). "*Aggregate numbers comparing places, or times, tell us very little. The most useful*

*data – from the point of view of the development of public policy and resource allocations – is that which involves comparison of small geographic areas or the experience of different groups"* (Bacon et al., 2010; p.38). They also emphasize the importance of detailed contextual information and qualitative studies that uncover rich meanings in order to achieve holistic understanding of well-being. For instance, the Millennium Ecosystem Assessment (MEA, 2005) emphasizes provides a framework for exploring the inter-relationships between well-being and the natural environment. However, criticisms of the MEA framework have addressed the lack of clarity on the personal and subjective aspects of well-being and the links to the natural environment, and "*the failure to capture the impact of natural environment on mental wellbeing*" (Newton, 2007; p.14).

Hence, there is a need for both subjective as well as objective measures, and for quantitative as well as qualitative approaches, for assessing well-being (Hall et al., 2010a). Objective measures are mostly sourced through survey data. They are often called 'health and social indicators', and constitute elements such as housing, education, income and employment, life expectancy, and access to healthcare. Yet the main criticism of such measures is that they most often are not able to explore the personal and experiential aspects of well-being. Subjective measures are often based on survey questions that are linked to a rating scale for satisfaction or happiness. The main challenges with regards to validity of such surveys attest to the reliability of personally assessed feelings of well-being or happiness and to the contextual dynamics that might differ across different cultures (Hamilton & Redmond, 2010; McAllister, 2005).

Most well-being studies are based on quantitative or administrative data that develop generalized understandings of people's health (Lippman et al., 2009). Yet a number of studies have used children and young people's personal perspectives and interactions to explore their personal and social well-being or to develop indicators for measuring their well-being (e.g. Fattore et al., 2009; Fraser et al., 2010). For example, Rees et al. (2010) reported on a national survey of youth well-being in the UK which was part of wider research programme focused on involving youth in the collection of perspectives and data on their well-being. Recently, more research is focusing on the implications of climate change on the health and well-being of

children in particular, who are increasingly being viewed as a vulnerable population group. McMichael and Lindgren (2012) state that; "*children, in particular, are likely to be at increased risks to mental health, emotional development and physical health and safety from impacts of climate change, including extreme weather events.*" (p.409) Similarly, a study by (UNICEF, 2007a) on the impacts of climate change on children emphasizes that; "*climate change has evolved from an 'environmental' issue into one that requires collective expertise in sustainable development, energy security, and the health and well-being of children*" (p. 5).

The present study has found less research focused on young people, particularly higher education youth who will be facing the climate challenges not only as citizens but also as key drivers of social and economic development, innovation, and pathways to sustainability. The lack of research into the specific impacts of climate change on children and youth has been highlighted in several recent studies (e.g. Sly et al., 2008; Strazdins & Skeat, 2011; UNFPA, 2009; WHO, 2011). This identified gap in the literature highlights the need for a deeper understanding and knowledge on young people's health and well-being, especially in relation to environmental issues. Also, the need for consultation of young people on issues that directly or indirectly affect their health, well-being & development is stressed by numerous international and youth agencies (e.g. Commission of European Communities, 2004; YFJ, 2008). This is especially important in today's world as trust in government systems is declining, particularly amongst the youth (UNDESA, 2010). This has been shown to influence their social participation, which ultimately affects their sense of efficacy and overall well-being (Eckersley, 2002; Schreiner & Sjoberg, 2005).

### *Conceptualizing Well-Being in this Study*

This section draws on the well-being literature reviewed in Section 2.3.1 to develop a conceptual framework on well-being which is relevant to the main research questions and core themes being explored in this study. The aim of this conceptual framework is to clarify the main dimensions and aspects of well-being which can guide the researcher in critically exploring the study findings to gain insight into the implications of climate change on the Dutch and South African higher education

youth's short and long-term well-being. In alignment with its critical interpretivist approach, the study recognizes the social construction of knowledge and contextual influences on interpreting experiences and understanding 'social reality' (White, 2008).

Figure 2.1 displays the main conceptualization of well-being as it applies in the context of this research and for guiding the data analysis. The study seeks to explore multiple inter-subjective dimensions regarding the participants' well-being in relation to climate change. These dimensions entail different aspects within their personal feelings and concerns arising from its risks, their perspectives, hopes, and future visions within a climate-threatened reality and their satisfaction with their current lifestyle, as well as their capabilities to function, interact, and influence. In addition, as the study focuses on higher education youth, the conceptual framework on well-being also considers the links between the youth's multiple and diverse opportunities for learning and important dimensions of their well-being. These entail the participants' self-efficacy and sense of empowerment, as well as the ways in which their engagement influences their academic, social, and professional performance. Such insights can enhance the understanding of the ways in which emotions and values influence motivation and engagement (Sinatra & Pintrich, 2003; Watts & Alsop, 1997). For instance, Watts and Alsop (1997) highlight the importance of considering "*not only what conceptual systems learners hold and the status that can be attached to them, but also how they feel about this knowledge as well*" (p.335-6). The study also identifies four contextual drivers as important factors that may enhance or impede the participants' sense of well-being; namely personal, socio-cultural, political, and environmental factors.

Furthermore, the study considers well-being as a state as well as a process. It considers the participants' personal feelings, perspectives, experiences, and functionings explored at the time of the discussions to be important, genuine, and real for that specific time and context. Yet it also considers well-being as a dynamic process that is continuously being shaped within the participants' different personal circumstances and temporal and spatial settings (Hamilton & Redmond, 2010; White, 2008). Over the long term, "*life circumstances substantially influence young people's ability to acquire, maintain, and sustain good health and well-being*" (Currie et al., 2004; p.9). Accordingly, the study acknowledges that the participants'

current and future feelings, perceptions, and functionings in relation to climate change and sustainability might change overtime. In other words, the participants' future health status, concerns and sense of security from climate risks, or ability to perform at their jobs, as well as other aspects shaping their sense of well-being, might be shaped differently to the present status at the time of the data generation. However, the aim of this study is not to objectively assess the participants' well-being against a set of pre-defined indicators or categories. Rather, the study seeks to critically explore the personal, social, and experiential aspects of the different facets of these youth's engagement with climate change on their current sense of well-being and the potential implications over the long-term (Fig. 3).

Insight into these themes can be generated through in-depth and critically reflective discussions with participants in order to understand the impacts of climate change on their well-being from their own experiences and interactions. A more comprehensive understanding is also achieved through the critical exploration of each of the Dutch and South Africa contextual settings.

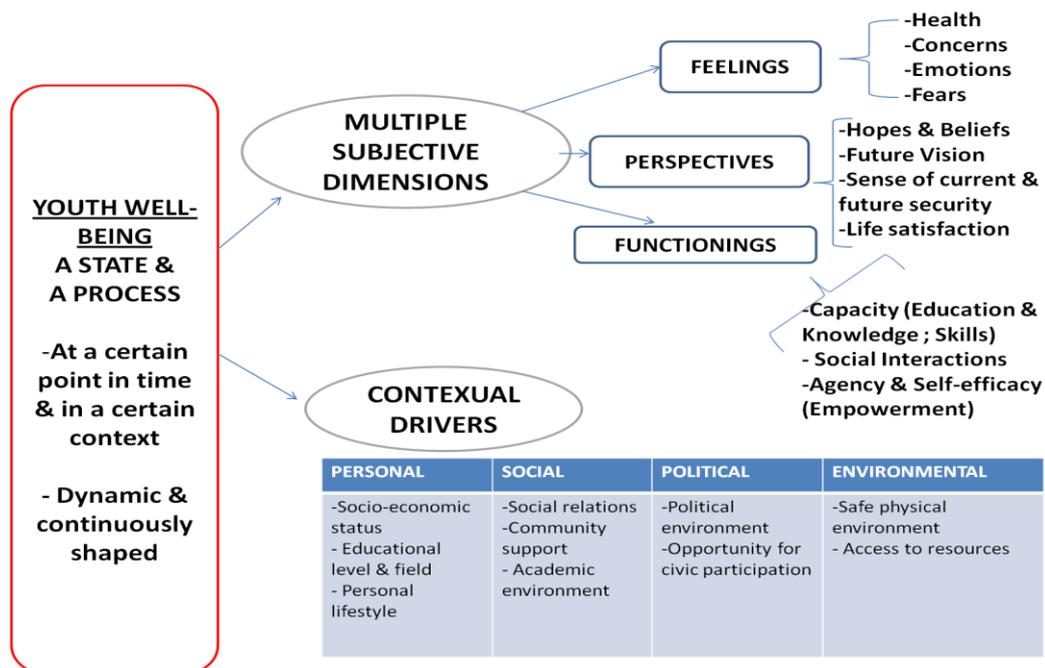


Figure 3: Conceptualizing Well-Being in this Study

## 2.4 CONCLUSION: CLIMATE CHANGE AS A CHALLENGE FOR YOUTH AND SUSTAINABILITY AS AN OPPORTUNITY

*"Young people must contribute to the process of addressing this critical challenge, as they will feel its impact most acutely throughout their lives."*

(UNDESA, 2010; xvii)

This thesis has thus far discussed the main challenges and risks that today's youth will be facing throughout their lives as a result of the long-term and all-encompassing consequences of climate change. It has captured evidence across the literature indicating that young people's quality of life, prospects for development, and sense of well-being might be adversely impacted by the continuous threats of climate change (GHF, 2009; UNFPA, 2009; UNICEF, 2007a). In particular, the challenges facing higher education youth are augmented given their status as current drivers and future leaders of societal development in an increasingly globalized, interconnected, and climate-threatened world. With the rising responsibilities for global youth, young people in general, and higher education youth in particular, need to be equipped with adequate resources and support and be empowered to confront the enormity of climate risks in an efficient and long-term manner (Cooper & Hays, 2007; Schusler & Krasny, 2008). Their empowerment is essential so that they move beyond being beneficiaries of positive initiatives to fundamental collaborators and initiators in endeavours that shape a sustainable future (Allen, 2008; Pandve et al., 2009). *"Youth are best seen not as future citizens but as co-creators of a thriving democracy and of healthy civic practices of the environments in which they live, work, play, and learn"* (Skelton et al., 2002., p.6)

The gloominess of climate change reality can thus be lightened by the rays of opportunity that a sustainability lens provides. At the core of the sustainability worldview is a paradigm shift from the values and actions that have largely driven this global climate crisis (Kates et al., 2005; Lyth et al., 2007). It aims to empower people to re-examine their worldviews and re-orient society towards sustainable practices through instilling new value systems and transformative skills (Blum, 2012; Tilbury, 2011b). Sustainable development ensures equitable economic and social growth while maintaining the integrity and harmony within the ecosystem. It

therefore safeguards and improves the present quality of life whilst passing on a sustainable heritage to future generations (Dodds, 1997; Hall & Ashford, 2011).

Hence, a sustainability worldview is key for effectively managing the climate challenges which impede young people's capabilities and prospects for sustainable development. It recognizes youth as core stakeholders who will need to be empowered to become owners of their visions for a sustainable future, and active participants in creating that future (Hayden et al., 2011; Tilbury & Wortman, 2004). Empowering the young generations to be key drivers of sustainability implies providing the necessary opportunities and tools for sustainability education, learning, and living (de la Harpe & Thomas, 2009; Wals & Jickling, 2002). Education is a key element in vitalizing this paradigm shift towards a sustainability worldview; *"improving the quality of our life implies a change in our learning* (UNESCO, 2005; p.3). Yet, many questions still remain concerning the extent to which current education is guiding today's young generations towards a sustainable future, and the ways in which it is influencing their engagement with such issues (Ashford, 2010; Evans, 2011). In the light of the above themes, the next two chapters (3 & 4) discuss the importance of youth engagement with climate change and sustainability issues and the role of higher education institutions in empowering youth to influence and lead society towards a secure and sustainable future.

# CHAPTER 3. DYNAMICS OF YOUTH ENGAGEMENT AND PARTICIPATION

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## 3.1 INTRODUCTION

*"It is the youth of the world who can set the agenda for the future and pursue it with diligence. We must do all we can to empower young people to take action, because the future belongs to them."*

Rajendra Pachauri, Chairman of the IPCC at COP15  
(UNFCCC, 2010, p. 3)

Climate change creates an opportunity for youth, as key stakeholders in today's and tomorrow's world, to meaningfully and creatively engage and drive action towards a more secure and sustainable future. Higher education youth in particular are the leaders of future society and the key drivers of continuous development (Fahey, 2012; Helferty & Clarke, 2009; Robinson, 2011). They will carry the leadership and managerial positions whilst being confronted with the climate challenges, especially as *"climate change and sustainability are gradually transforming the fundamentals of world economy and fast becoming the responsibility of today's young professionals"* (AIESEC, 2009; p.4.). Therefore, youth have a right and duty to engage in designing and implementing long-term responses to climate change.

The enormous climate challenges confronting today's youth and the importance of their meaningful engagement in viable solutions have been highlighted by various researchers and practitioners as well as international institutes (e.g. Hayden et al., 2011; Pandve et al., 2009; Strazdins & Skeat, 2011; TakingITGlobal, 2006; UNESCO & UNEP, 2011; UNFCCC, 2009; WSCSD, 2010). For example, the Global Humanitarian Forum argues that; *"we are not going far in addressing climate change when we do not give pivotal importance to the social dimensions it implies.*

*And those dimensions directly linked to maintaining the good livelihood of forthcoming generations makes it imperative to actively involve the youth from the start. Their own future and the perspectives for their children are at stake!"* (GHF, 2009; p.7). At the international level, the importance of youth participation in sustainability decisions and global policy development has been continuously emphasized by the United Nations. The World Programme of Action for Youth to the Year 2000 and Beyond, adopted by the UN General Assembly (UNGA) in 1995<sup>62</sup>, is considered as *"the first global blueprint for developing effective policies for young people"* (UNDESA, 2010; p.4). The Programme emphasized the environment, health, and full and effective youth participation as key priority areas for action, and youth delegates to a 2008 regular GA session particularly identified climate change as another priority area (UNDESA, 2003). The key role of youth in achieving sustainable development is also highlighted in Chapter 25 of Agenda 21, Principle 10 of the Rio Declaration 1992; *"involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21"* (UNEP, 1992; p.2). Young people are also becoming increasingly involved in UN as well as national decisions and actions on climate change and sustainability through entities such as youth caucuses and forums, national youth councils, and young climate ambassadors to international climate events such as the UNFCCC (UNIYY, 2010).

Although several mechanisms have been established that promote young people's contributions to climate change programmes, yet as further discussed in Section 3.4, these mechanisms do not always promote meaningful youth participation and engagement in ways that truly influence the decision-making process (Carnegie UK Trust, 2008; ILO, 2008; Mohamed & Wheeler, 2001; UNDESA, 2010). More recently, the initiation of the United Nation's International Year of Youth 2011 (UNIYY, 2010) is aimed at empowering young people towards more authentic engagement in their communities and internationally. Moreover, youth themselves, particularly higher education youth, are also initiating and leading projects on climate change, environment and health, and sustainable development within their

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<sup>62</sup> Adopted again in 2007 as supplement to the 1995 World Programme of Action

academic institutions and wider communities. Examples include the Green Campus Initiative<sup>63</sup>, Youth Climate Coalition<sup>64</sup>, and Healthy Planet<sup>65</sup>.

Ultimately, empowering young people to contribute to a sustainable future primarily requires that their in-depth and interactive perspectives, emotions, values, experiences, and actions are understood holistically as well as contextually (Bragg, 2010; TakingITGlobal, 2006). Understanding the diverse ways and multiple levels in which young people may engage with climate change and sustainability issues, and their different pathways and opportunities for meaningful participation, requires comprehensive insight into such dynamic domains of engagement. Yonezawa (2009) indicates that *"there is increasing agreement that representing engagement as a static concept with separate and distinct components (cognition, emotion, and behaviour) neglects the critical relationships among youth, their identities, and the contexts in which they live and learn"* (p. 196). Similarly, Burns et al. (2008) argue that most assessments of youth engagement focus on reinforcing existing perspectives that link youth to general social and political systems without delving into the personalized and contextualized details of such engagement. *"Rarely does research, policy or program development (on youth engagement) involve young people or consider their views and perspectives as 'lived experience'"* (p.3). In this study, youth engagement with climate change and well-being is explored from the perspectives, experiences, and interactions of youth themselves and within their diverse personal, social, and contextual settings.

This Chapter <sup>66</sup> addresses themes of youth engagement, participation, and empowerment. It reviews the literature on these themes, and highlights the critical role that youth can play in leading the fight against climate change and the pathway towards sustainability. Section 3.2 captures the various dimensions and

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<sup>63</sup> Student organization aimed at achieving sustainable and environmentally-friendly university campus. GCI was initiated at the University of Cape Town in 2007, and has since spread to numerous universities worldwide.

<sup>64</sup> Youth-initiated social movement aimed at educating, empowering, and mobilizing youth for action on climate change.

<sup>65</sup> Charity aimed at engaging and supporting community initiatives on education and action on environmental and public health projects.

<sup>66</sup> This chapter focuses on youth in general rather than on higher education youth in particular. The latter are featured more prominently in Chapter 4, which discusses the role of higher education institutions in empowering youth towards sustainability.

interpretations of youth engagement across the literature and emphasizes the importance of holistic and multi-dimensional approaches that consider cognitive, emotional, and active types of engagement. Section 3.3 depicts the different forms and pathways of youth participation, and presents case examples on several exciting initiatives seeking to empower youth on climate change and sustainability issues. Section 3.4 emphasizes the importance of youth empowerment on climate change and sustainability issues, covering key themes on; a) rights-based argument, b) youth empowerment, societal progress, and sustainable development; and c) youth well-being. Finally, Section 3.5 clarifies the rationale and conceptualization of youth engagement as applied in this particular study.

### **3.2 YOUTH ENGAGEMENT: A MULTI-DIMENSIONAL PROCESS**

Youth engagement has been defined and conceptualized in various ways across the literature. It is sometimes used interchangeably with other terms such as youth participation (e.g. Fletcher, 2005; Hart, 1992; Zia & Hafeez, 2011), positive youth development (e.g. Maynard, 2008; Mitra, 2004), or youth empowerment (Joselowsky, 2007; Hayden et al., 2011). Although their specific definitions might differ, at the core of these various terms is recognition of the value of youth in society as citizens and social and civic actors (Bell, 2005), and an emphasis on youth agency and empowerment (Elaine et al., 2008; Jennings et al., 2006). This section covers these different themes relating to youth engagement as established in current literature and gives various examples with regards to climate change engagement.

With regards to environmental or developmental issues, youth engagement has a tendency to be mainly associated with a certain level or form of active involvement or participation (e.g. Fletcher, 2005; Hart, 1992). This is in part triggered by the fact that the term participation is widely used when discussing forms of social engagement (Thomas & Percy-Smith, 2010). For example, Weiss et al. (2005) describe youth engagement as the experiences in which they are “*actively involved in cognitive and social endeavours that promote growth*” (p. 24). Similarly, Skelton et

al. (2002) consider that youth influence democratic society as they work with each other and other stakeholders and further develop their civic skills and habits. Also, the Youth Development Institute<sup>67</sup> conceptualizes engagement based on Newman's (1992) definition; "*active involvement, commitment, and concentrated attention, in contrast to superficial participation, apathy or lack of interest*" (Newmann, 1992; p.12).

However, Camino and Zeldin (2002) argue that the focus on active components of youth engagement, mainly participation, has resulted in such themes being mostly explored through formal and institutional participation pathways, such as public consultation, civic or youth organizations, and academic institutions. They point out that these approaches take less consideration of cognitive or emotional aspects of engagement, and of informal and non-formal spaces for participation such as within social interactions. Camino and Zeldin consider that cognitive or emotional dimensions of engagement are often explored singularly rather than integratively, and from the perspective of driving or deterring action rather than as important components in themselves. Other researchers, such as Blyth (2006), Bourn and Brown (2011), Pittman et al. (2007), Sherrod (2010) and Yonezawa (2010) have held similar arguments. Bourn and Brown (2011) point out that; "*in discourses around young people and development issues, the term engagement has recently been dominant, along with terms such as 'participation' and 'global citizenship', and has tended to carry with it a sense of activism rather than one of reflection and exploration*" (p.12).

### *Multi-Dimensional Interpretations of Engagement*

The literature is increasingly emphasizing the manifold domains of youth engagement which simultaneously consider its cognitive, emotional, and active dimensions within a particular context (Bourn & Brown, 2011; Sullivan, 2011; Yonezawa, 2010). The Centre for Excellence on Youth Engagement (CEYE, 2007) defines youth engagement as "*meaningful participation and sustained involvement of*

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<sup>67</sup> Based in the United States; supports youth development by strengthening the quality and increasing the availability of experiences through collaborations with community organizations, schools and colleges, and government agencies.

*a young person in an activity, with a focus outside of him or herself... Engagement experiences are complex and vary widely in content and quality. They include both objective pieces (behaviour, structure, content), and subjective pieces (feeling, thinking, evaluation)"* (p. 2). This definition has been used by numerous researchers, organizations, and youth engagement programs in various countries (e.g. Crooks et al., 2010; Leonard, 2004; Pancer et al., 2002). For example, Pancer et al. explain that; *"...full engagement consists of a behavioural component (e.g., spending time doing the activity), an affective component (e.g., deriving pleasure from participating), and a cognitive component (e.g., knowing about the activity)"* (p.2).

Other definitions have also captured multi-dimensional perspectives of youth engagement, such as Bourn and Brown's (2011), whose perspective on young people's engagement with international development issues encompasses multiple levels of active participation, such as political activism, social and consumer action, and fundraising, as well as of reflection and exploration such as understandings of self and building social relationships. They indicate that; *"to engage with can mean to 'show an interest in', to 'explore the issues', or 'to take action on'..."*(p.11). Also, Sherrod (2010) highlights the importance of interdisciplinary research in the progressive development of the field of youth civic engagement to its current broad and multiple conceptualizations. He emphasizes the psychosocial dimensions of youth engagement beyond mere involvement in civic action such as social work or voting, and focuses on engagement for the purpose of civic and environmental change. Similarly, Anderson and Woodrow (1998) argue that engagement is about enhancing people's knowledge and understanding of a certain issue that is of concern to them, and their participation in solutions, thereby empowering them to change. In their own words, engagement is *"a powerful way to help them increase their understanding of their own situation, and therefore their capacities to effect desired change"* (p.45).

Literature on youth engagement with environmental issues has also recognized its multi-dimensional features (e.g. Bråten et al.,2009; Featherstone, 2008; Kola-Olusanya, 2012). For instance, a Canadian study of youth environmental engagement defines such engagement as *"...youth being actively and authentically involved, motivated, and excited about an issue, process, event or program"* (AEF, 2008; p.2).

With regards to engagement with climate change, Lorenzoni et al. (2007) emphasize a multidimensional approach that considers cognitive, affective, and active components. They define engagement with climate change as *"a personal state of connection with the issue of climate change, in contrast to engagement solely as a process of public participation in policy making. A state of engagement is understood here as concurrently comprising cognitive, affective and behavioural aspects. In other words, it is not enough for people to know about climate change in order to be engaged; they also need to care about it, be motivated and able to take action."* (p. 446). The definition by Lorenzoni et al. (2007) has been recently used in several studies focused on engagement with climate change. For instance, Wolf & Moser (2011) base their arguments on this definition as they seek insight into *"how individuals explain the causes and impacts of climate change, how they process information, form their views and come to change their climate-relevant behaviour (rather than just expressing willingness to do so), and what the deeper motivations for, and barriers to, actual behavioural changes and other forms of engagement are"* (p. 549). Also, Whitmarsh et al. (2011) utilize this definition when discussing strategies for engaging people with climate change; *"How can we more effectively communicate with the public on climate change, and foster cognitive, affective, and behavioural engagement with the issue?"* (p.6).

### *Models of Youth Engagement*

Models of youth engagement have been developed by numerous researchers and institutes; three examples presented below entail the youth engagement spectrum (Khosroshahi & Corriero, 2006); the typology of engagement (Sullivan, 2011), and the cycle of youth engagement (Fletcher & Vavrus, 2006). These models reflect different ways of conceptualizing youth engagement and provide insight into various key themes that are important for ensuring meaningful engagement. These models also highlight the role of context in influencing such engagement.

The spectrum of youth engagement developed by Khosroshahi and Corriero (2006) views engagement along different but non-linear levels or states which encompass disengagement, under-engagement, engagement, high engagement, and over-engagement, all of which are considered to be shaped by personal as well as social

and wider contextual factors in the youth's lives. Figure 4 below demonstrates the different features and circumstances of youth attributed to each of these states of engagement.

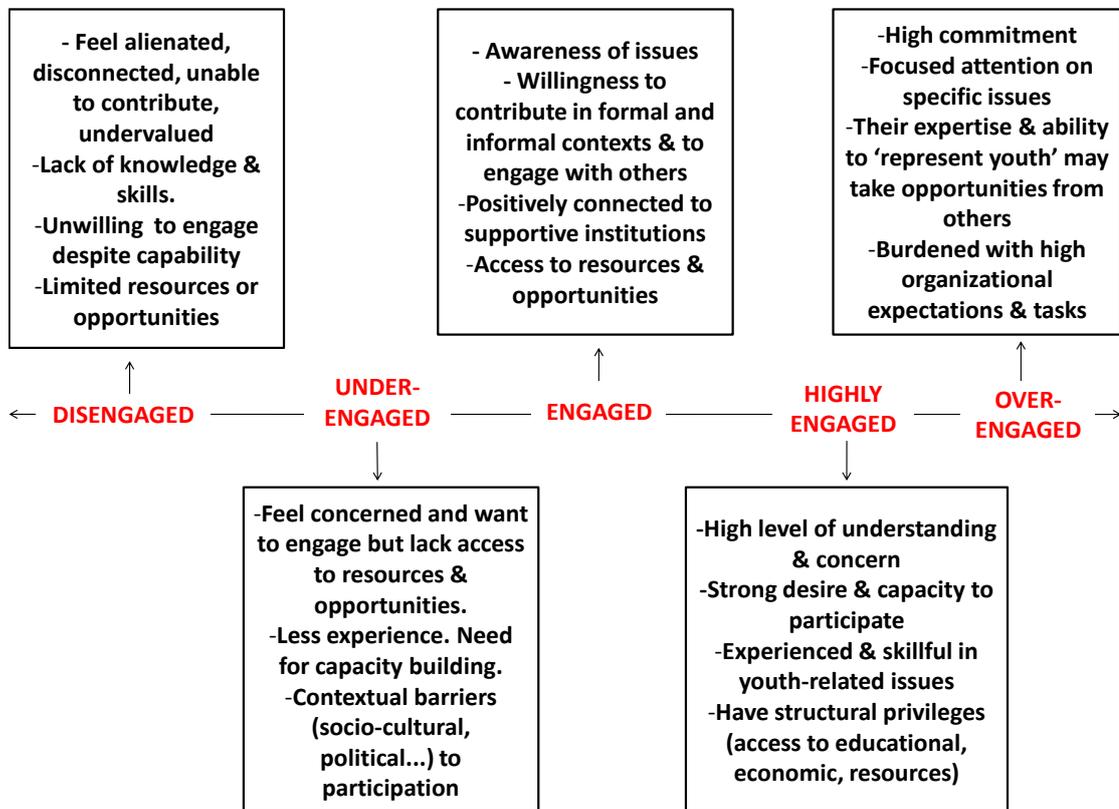


Figure 4: Spectrum of Youth Engagement (Adapted from Khosroshahi & Corriero, 2006)

The youth engagement model, developed by Sullivan (2011), consists of four interconnected rings in which she identifies four main types of engagement - participation, passion, voice, and collective action - and their key features. Figure 5 below illustrates this model. Unlike the previous example, Sullivan points out that these different types of engagement are not hierarchal or progressive, but rather all are equally important, influence each other, and provide various opportunities for youth to practice and experience leadership. Furthermore, Sullivan emphasizes the importance of 'authentic relationships' in which youth and adults engage with each other as they "actively listen to each other; treat each other with respect, honesty, kindness and empathy; have a shared understanding of their roles and

responsibilities within the relationship; respectfully challenge and hold each other accountable; and enjoy their time together" (p.11). She explains that such interdependent and trusting relationships are crucial for broadening young people's access to ideas and resources and developing a sense of collective efficacy which "makes it easier to believe we can overcome barriers that are beyond our individual control" (p.12).

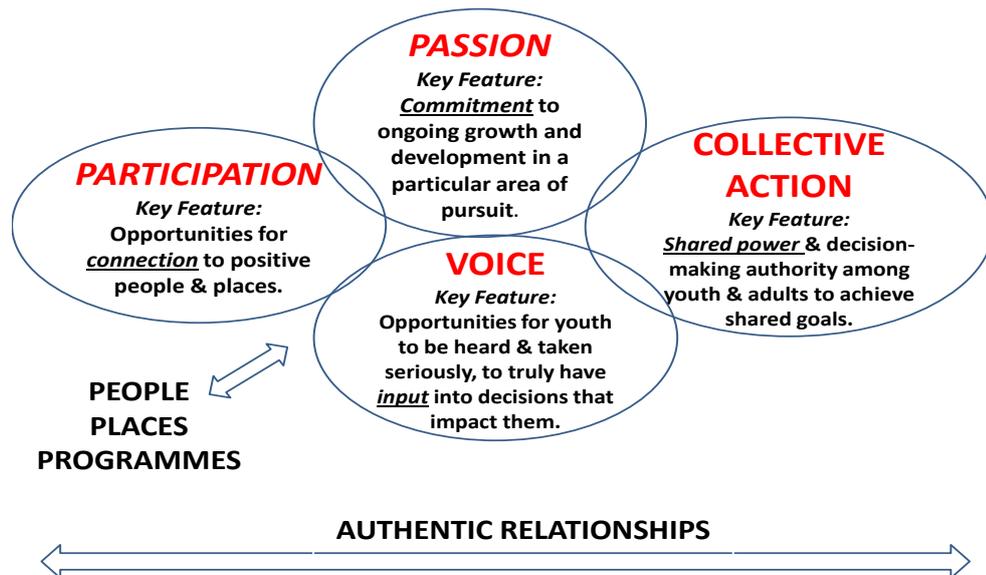


Figure 5: Typology of Youth Engagement (Adapted from Sullivan, 2011)

Finally, Fletcher and Vavrus (2006) developed a Cycle of Youth Engagement that identifies the key trends for successfully engaging young people in social change (Fig. 6). The cycle encompasses five main elements; a) *listening to youth* is important for removing personal assumptions and organizational barriers, through avenues such as informal conversations, group discussions, or youth action research; b) *validating youth* through providing them with constructive feedback and guidance implies a sense of sharing and collaboration amongst youth and other stakeholders with diverse perspectives and insights; c) *authorizing youth* is related to their ability to influence change, through actively providing them with the necessary skills and spaces and enhancing their knowledge; d) *mobilizing youth* implies a transition from passive participation to active change in which young people can influence change in their personal and civic lives. This also encourages adults to recognize young people

as partners in their communities; and e) and *reflecting about youth* emphasizes the importance of learning from social change by engaging in critical reflection to identify assumptions, outcomes, and lessons learnt, which can overall influence subsequent steps of the cycle.

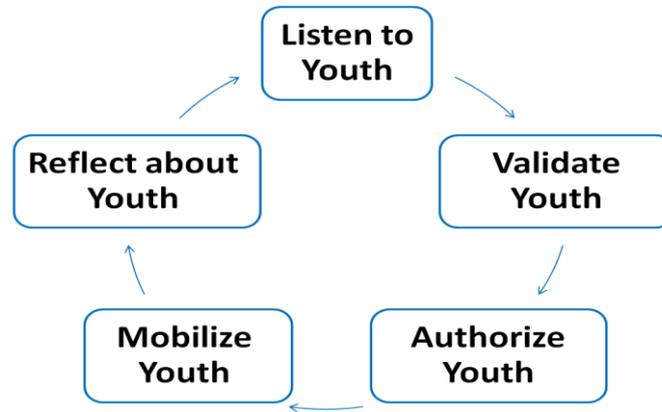


Figure 6: Cycle of Youth Engagement (Adapted from Fletcher & Vavrus, 2006)

Across the various frameworks and interpretations of youth engagement, a shared perspective emphasizes meaningful engagement and real impact over processes and decisions. Ultimately, youth participation is an important component of engagement and is crucial for authentic influence and change (Bennet & Wells, 2009; Carnegie UK Trust, 2008; Simovska & Jensen, 2009). *"Recognizing the importance of full engagement, young people must have opportunities to make a difference — to participate and to influence"* (Pittman et al., 2003; p.11). The different levels and frameworks of youth participation are further discussed below.

### 3.3 ACTIVE YOUTH ENGAGEMENT: LEVELS AND FRAMEWORKS OF PARTICIPATION

*"Youth participation refers to the active engagement and real influence of young people, not to their passive presence or token roles in adult agencies"*

(Checkoway, 2011; p.341)

Participation is generally considered as a fundamental right<sup>68</sup> and a means through which to realize other rights, by recognizing young people as citizens who are entitled and capable to contribute to decisions that impact their personal lives and their communities (Checkoway & Guitierrez, 2006; Simovska & Jensen, 2009). As stated in the World Programme of Action for Youth, *“the capacity for progress of our societies is based, among other elements, on their capacity to incorporate the contribution and responsibility of youth in the building and designing of the future. In addition to their intellectual contribution and their ability to mobilize support, they bring unique perspectives that need to be taken into account”* (UN, 1995; para 104).

In general, participation has numerous definitions that emphasize different perspectives. For example, the definition by DFID CSO (2010) is linked to a rights' perspective; *“... enabling people to realise their rights to participate in, and access information relating to, the decision-making processes which affect their lives”* (p.11). Hart (1992) also emphasizes the connection between participation and human rights; *“... the process of sharing decisions which affect one's life and the life of the community in which one lives. Participation is the means by which a democracy is built and it is a standard against which democracies should be measured. Participation is a fundamental right of citizenship”* (p.5). Checkoway (2006; 2011) focuses on the goals of participation for meaningful input. Checkoway considers youth participation as their involvement in the decisions and institutions that are of direct concern to their own lives. He emphasizes that meaningful participation takes place when youth can actively engage with issues that affect their lives and can have a real influence on decisions rather than their passive presence or token participation.

The importance of meaningful youth participation beyond mere tokenism or presence is repeatedly emphasized across the literature. For instance, Anttiroiko (2003) distinguishes between *“participation as a social activity and participation as influencing or creating change”* (p.19) He considers that 'influencing' implies an ability to transform decision-making in political or social processes (Percy-Smith and Thomas 2010). Also, Simovska and Jensen (2009) points out to two different

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<sup>68</sup> The adoption of the Convention on the Rights of the Child (United Nations, 1989) highlighted the importance of children and young people's participation in civic life.

ways of interpreting youth participation. The first interpretation takes participation as involvement, such as taking part in or being present at an activity or programme without necessarily having an impact on these activities or decisions. The second emphasizes the practice of active citizenship through shared power in decision-making and ownership of initiatives. Similar arguments regarding meaningful participation of young people are made by Cook and Kothari (2001); IFRC (2011); and Hart (1997).

Regarding participation in environmental issues, Jensen and Schnack (1997) distinguish between activity and action. They consider that an activity done in an environmental setting remains only an activity unless; a) it is addressed at finding a solution to the problem (e.g. instead of picking wastes, investigating more deeply the origin of pollution and understanding reasons to be able to envision actions to solve); and b) knowledge is internalized and youth are involved in decision-making process. *“An action therefore occurs when knowledge is internalised and responded to in a conscious manner”* (James, 2009; p.14). Jensen and Schnack (1997) also raise arguments based on intentionality and outcome to distinguish between two types of environmental actions; direct and indirect, as illustrated in Fig. 7 below. Similarly, Schusler et al. (2009) emphasize a deeper form of understanding and critical thinking in relation to environmental participation, indicating that *“through genuine participation, youth take part in making meaning of a particular environmental problem by defining it, analyzing its root causes, and envisioning and enacting possible solutions”* (p. 13). Yet they argue that actions do not always target the root cause of problems and that youth have varying levels of influence in their decisions and actions; hence environmental participation often involves both activities as well as actions.

**Jensen and Schnack (1997) distinguish between action: direct and indirect**

A *direct* action aims at directly solving the problem being worked on. Examples include recycling wastes, turning off water tap, switching off unnecessary lights.

An *indirect* action aims at solving other problems, such as posters, awareness campaigns, etc.

According to James (2009), indirect environmental action and forms of participation are more common in school settings.

*Figure 7: Types of Environmental Action-Direct and Indirect*

Overall, the diverse discussions emerging on participation are a result of varying perspectives regarding the degrees of shared power and influence, which, in the case of youth, raises additional issues to those of general public participation. McNeish et al. (2000) point out to three important factors that distinguish the youth participation field; a) youth participation is often linked to adult or society's perspectives of youth and cultural considerations of their autonomy and influence; b) young people can have less power than adult stakeholders; and c) young people's participation is often dependent on their interests and skills as they develop. Similarly, Simovska and Jensen (2009) highlight Hart's (1997) emphasis on "*the importance of participation*

*in young people's experience of power relations in their everyday lives and in developing a sense of place in democratic social networks"* (p.13). Numerous typologies have been developed which identify varying levels of participation depending on the extent of power and influence, as further discussed below.

### *Levels of Youth Participation*

Youth participation can take place at different levels which have been variously conceptualized across the literature. A widely used model of participation by both researchers and practitioners (e.g. AEF, 2008; IAP2, 2007; Shier, 2001) is the ladder of participation<sup>69</sup> developed by Hart<sup>70</sup> (1992; 1997), which identifies eight different levels of participation. The first three levels on the ladder correspond to inauthentic or pseudo-participation, through manipulation, decoration, and tokenism. According to Hart, youth in such forms of participation are often involved in sharing ideas, establishing relationships, or supporting with logistical issues, yet with minimal opportunity or power to make an impact or to influence decision-making. Several practitioners and researchers often use these lower levels of the ladder to reflect on and ensure they avoid non-participation practices (Head, 2011; Hickey & Mohan, 2005). The middle levels represent progression towards meaningful participation, through a) informing and educating young people, and b) gathering information from young people. Participation at these levels often takes the form of youth involvement in surveys or studies collecting information on their perspectives or experiences. This level of participation often entails young people's voices being heard or considered, but without any real commitment to action by people in positions of power (UNDESA, 2010).

According to Hart, participation gradually moves up the ladder when youth are consulted. *"This level constitutes a potential tipping point, as it is here that the balance may begin to shift towards meaningful involvement and genuine empowerment...allows for the possibility that the input of young people might have*

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<sup>69</sup> Appendix 2

<sup>70</sup> Hart built on earlier critiques by Arnstein (1969) regarding tokenism in consultation. Hart argued regarding the lack of opportunities in governmental processes for youth participation in decisions and actions on issues of direct concern to their own lives and interests.

*an impact on the direction policy takes or on the content of programmes being developed"* (UNDESA, 2010; p.54). The top levels gradually allow for young people's active, meaningful, and influential participation through genuine empowerment to influence decisions and actions. Youth are presented with opportunities to collaborate with other stakeholders in setting policy agendas, contributing to debates and decisions, and implementing projects. At the highest level, youth are themselves able to initiate projects and lead in decision-making, whilst cooperating with adults in carrying through their initiatives. "*Actions initiated by youth improve their prospects for exerting genuine influence"* (UNDESA, 2010; p. 55).

Overall, this model emphasizes power as a key factor shaping the different levels. Participation entails more than just consultation of young people or listening to their voices and views to influence decision-making by others. Rather, meaningful participation recognizes youth as fundamental stakeholders in the decision-making process (Barber, 2009; Golombek, 2002). This is particularly important in the climate change policy making, as the policies implemented would have direct implications on the current and future lives of youth. Accordingly, participation is not only about the scope or number of youth who are taking part, but also about the quality of participation; that is, the ability of such endeavors to influence change, to make positive contributions (Kesby, 2005; Nyoni, 2009).

The International Association for Public Participation (IAP2, 2007) developed a spectrum of participation based on Hart's (1992) model (Fig. 8). The spectrum illustrates an increasing level of public impact across five different goals of participation, namely informing, consulting, involving, collaborating, and empowering. This spectrum was designed to demonstrate different levels of participation, all of which are considered to be legitimate, depending on the goals, resources, and level of concern in the decisions being made.

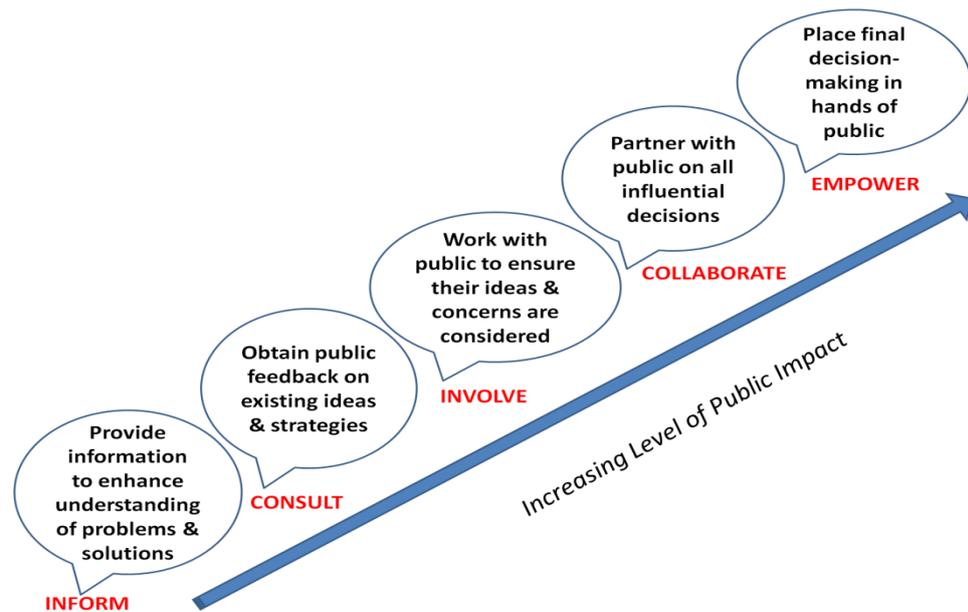


Figure 8: Spectrum of Public Participation (Adapted from IAP, 2007)

Critics of the ladder metaphor (Cook & Kothari, 2001; Hickey & Mohan, 2005; Kesby, 2005) have argued that it might create a case of 'participation as tyranny', in which the higher levels become imperative and valued, and the low levels are considered less worthwhile; hence participation approaches can become more imposed rather than overcome. However, Hart emphasizes the importance of this ladder of participation in shedding light on the progressive process towards enhancing meaningful participation while recognizing the importance of each level in itself (Hart, 2008). For instance, participation at the lower levels, whilst being less influential, contributes to the overall success and development of an initiative, and can often lead to actions further up the ladder (UNDESA, 2010). Hence, it is not always necessary for youth to participate at the highest levels possible, but rather the determining factor should be their own personal choice of the extent and ways they would like to be involved, "*while conditions should be optimized to enable every person to participate at the highest level of his or her competence, interest and motivation*" (Simovska & Jensen, 2009; p.14).

Nevertheless, several models have been developed that emphasize more flexible and non-hierarchical modes of youth participation across diverse settings (Carnegie UK Trust, 2008; Head, 2011; Pittman et al., 2003). These models point out to the need

for considering the diverse situational and contextual settings and the formal and informal spaces in which participation takes places. Two such dynamic models that have been developed on youth participation (DFID CSO, 2010; Simovska, 2005) are further discussed below.

*Dynamic, Non-Hierarchical Models for Youth Participation*

The Youth Working Group of the Department for International Development (DFID CSO, 2010) developed an assets approach to youth participation in development. The approach emphasizes participation as a combination of youth being viewed as target beneficiaries, collaborators, and initiators of developmental efforts, as illustrated in Figure 9. DFID CSO argues that these should not be seen as mutually exclusive, but rather as dynamic and context-dependent. For instance, this perspective considers that the ultimate aim is for youth to have agency through developing their skills and capabilities to act and to influence change. Hence, it seeks to develop youth as partners and leaders in development. At the same time, "participation must develop from a foundational base... Youth operating as partners and leaders are inherently beneficiaries too" (p.3).

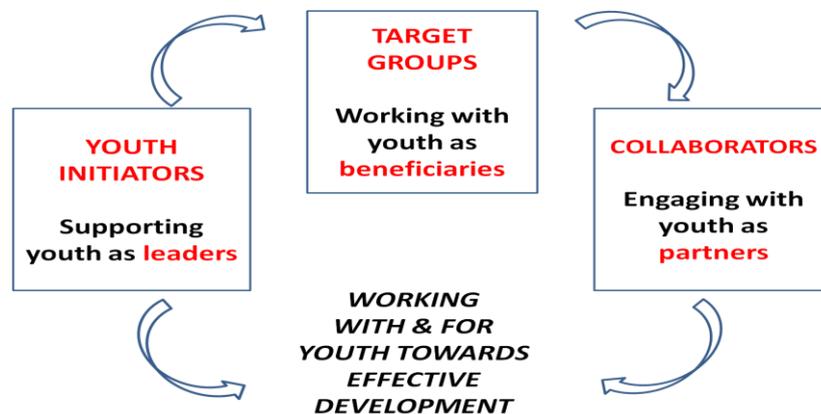


Figure 9: Assets Approach to Youth Participation (Adapted from DFID, 2010)

Similarly, Simovska (2005) argues that there is no optimal level or form of participation, but rather different possible forms that are adequate depending on different circumstances such as the specific problem and the profile of youth and other stakeholders involved. She proposes a non-hierarchical model based on Hart's framework (Fig. 10). Simovska and Jensen (2009) point to "five different but equally

valid forms of participation that allow choice of the option that is most helpful given the specifics of the context and the particular situation" (p.15).

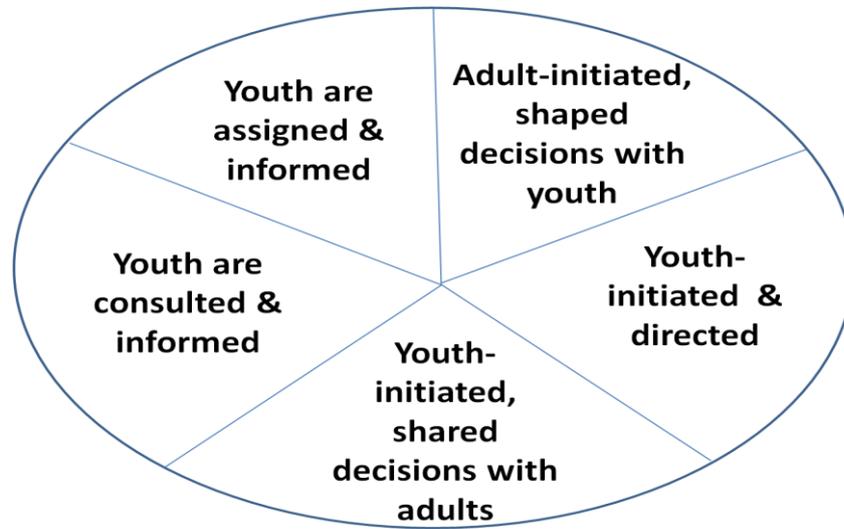


Figure 10: Non-hierarchical Forms of Participation (Adapted from Simovska, 2005)

Finally, these different conceptualizations capture a diversity of forms and pathways of youth participation, as well as reflect important power dynamics and issues of ownership, control, and competence. Ultimately, power remains a key concept across the various conceptualizations of youth engagement and participation in decisions and actions for individual or societal change (Checkoway, 2006, 2011; Jennings et al., 2006; Maynard, 2008). With regards to climate change and sustainability issues, meaningful youth engagement depends on their perceived sense of power and control over resources and decisions, and their opportunities for contributing to devising strategies and programmes which can ensure their long-term well-being (Glenn et al., 2008; UNIYY,2010). It requires that youth be equipped with the knowledge, means, space, support, and opportunity for actively contributing to the decisions and actions that are in their own interest and that promote overall societal development (Corcoran & Osano, 2009; Gardner et al., 2009; Golombek, 2002). Hence, youth empowerment is essential for meaningful youth engagement and participation, as thoroughly discussed in the next section.

### 3.4 YOUTH EMPOWERMENT AND CLIMATE CHANGE

At the World Summit for Sustainable Development in Johannesburg, the Youth Caucus<sup>71</sup> called on the world to *'see young people as a resource, not a problem'*<sup>72</sup>, (Woollcombe/Schumacher, 2007). Also, Chapter 25 of the UN Sustainable Development Agenda 21 calls for the need to *"enlist and empower children and youth in reaching for sustainability"* (UN, 1992, p.1). In the light of the rising climate challenges to young people's current and future lives, youth empowerment for change in the face of climate change becomes essential. Their meaningful engagement in climate decisions and actions can ensure their security and enhance their possibilities for a sustainable future (Wiek et al., 2011; UNEP, 2009). In addition, youth are *"a major human resource for development, positive social change and technological innovation. Their ideals, energy and vision are essential for the continuing development of their societies"* (UNIYY, 2010; p. 4). Numerous endeavors around the world have been initiated by youth aiming to raise awareness (e.g. Miller, 2012; TakingItGlobal, 2006), engage their peers and communities in healthy lifestyles and sustainability projects (e.g. Liu, 2011; Kahler, 2003), and influence national and international climate decisions (e.g. Jones et al., 2008., Kiefer, 2007; Seider, 2005). Also, various international, national and local programmes have been established for promoting youth participation, yet several remain less influential in terms of actual empowerment for change (Gidley et al., 2006; Shreiner et al., 2005; UNIYY, 2010). *"If youth engagement initiatives are to be successful in engaging youth, they must move beyond the token involvement of young people. True engagement requires that youth have genuine and meaningful opportunities to make their voices heard and to have an impact on the problems that concern them"* (Pearson & Voke, 2003; p.3).

The importance of youth empowerment and meaningful engagement with climate change and sustainability issues is discussed below through covering three main themes; a) rights-based argument; b) youth empowerment, societal progress, and sustainable development; and c) youth well-being. This is followed by a discussion of the critical role played by higher education institutions in empowering young

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<sup>71</sup> Further details in Section 4.4

<sup>72</sup> Kofi Annan, Statement to the 3rd World Youth Congress on Youth & Development

people. Preceding these two sections is a brief clarification below of the concept of youth empowerment and its key principles and influencing factors.

### **3.4.1 Youth Empowerment: Key Principles and Influencing Factors**

*"Empowerment is a multi-level construct that in a broad sense occurs when individuals, singularly or collectively, gain control and mastery in their social, economic, and political lives so that equity and quality of life is improved."*

(Jennings et al., 2006; p.32)

Youth empowerment mainly relates to young people's willingness as well as capacity to take action. It is the ability of youth to increase their participation in decisions regarding their own lives as well as wider community issues that are of importance or concern to them (CDC, 2010; UNFPA, 2009). Youth empowerment is considered crucial for building the competences and strengths of young people, for enhancing their sense of control over their lives, and for addressing systems of socialization and power (Evans & Prilleltensky, 2007; Joselowsky, 2007). Thapa et al. (2005) describe youth empowerment from the perspective of society as; *"a gradual paradigm shift from treating youth as problems to viewing youth as assets, resources and competent members of a community"* (p.1). Empowerment is thus based on the recognition that youth are key contributors to the advancement of current as well as future society; *"young people should be viewed and valued for what they contribute in the present – not only what they will become in the future"* (Burns et al., 2008; p.2;3).

In order to feel empowered, young people need to have a strong sense of self-efficacy and agency. Perceived self-efficacy involves people's belief in their ability to make a change or to succeed in a certain endeavour. This belief can shape various cognitive, emotional, and behavioural aspects of people's lives such as their perceptions, motivation, resilience, decisions over a course of action, and level of accomplishment (Bandura, 1997, 2001). For instance, perceived efficacy enhances young people's feelings as agents of change who are able to contribute to positive social and political change. It influences their political interest and willingness to undertake political action, and affects motivation and the value they place on their actions (Cooper & Hays, 2007; MacKinnon et al., 2007). As such, self-efficacy

mediates between capability and action, and is therefore crucial for developing youth agency or the ability and power to generate actions and to control events that affect their lives (Bandura, 1997; Shahadu, 2012). Youth agency can be summarized as *"the power to understand, act on, and effect positive change in one's personal and social contexts; embodying the sense of hope and possibility (grounded in an understanding of social reality) that one can make a difference in one's own life, family, school, and local community and in the broader national and global community.* (Joslowesky, 2007; p. 2). Thus, a sense of agency and self efficacy are crucial for driving youth to actively participate in processes and activities that they believe they can change or improve, and to influence policies and decisions that affect their lives. Furthermore, as perceived self-efficacy interacts with cognitions and motivations, it also influences young people's emotional states and over well-being, especially affective reactions to frustration, failure, or motivation <sup>73</sup> (Packham, 2008; Pearson & Voke, 2003; Surian, 2011).

In order to empower youth, it is critical to provide them with opportunities to develop their competences and skills at different levels. Their meaningful engagement with issues that concern them requires that they are equipped with adequate understanding to make informed decisions and skilled capability to take efficient actions (Bourn & Brown, 2011; Schusler & Krasny, 2008). *"Effective programs engage young people in a variety of ways, so that they are not just physically present, but intellectually immersed, socially connected, and emotionally centered. Above all, they help them gain a sense of control over their own lives and take an active role in shaping the programs and activities around them through their words and actions"* (Joselowsky, 2007; p.1). It is also important to provide youth with opportunities for leadership. *"Leadership in the youth engagement context involves a genuine transfer of decision-making power to the youth. At minimum, this means the ability to make decisions in the design and direction of their own programs"* (Shen et al., 2006; p.4) Through authentic participation and leadership, youth can develop skills in decision-making, communication, and negotiation, which increase their ability to influence public affairs and contribute to societal growth

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<sup>73</sup> The interlinks between youth engagement /empowerment and well-being is elaborated in Section 3.4.2c

(Checkoway & Gutiérrez, 2006; Mohamed & Wheeler, 2001; Thompson & Arsalan, 2007).

The literature is rich with different visions and understandings based on the principle of youth empowerment. Several researchers and youth institutes have identified various key factors that influence youth engagement & authentic participation; three examples are presented in Table 2. Overarching themes of power, agency, and efficacy are shared across these different interpretations of youth empowerment and meaningful engagement.

<p>Checkoway (2011)</p>	<p>Four critical elements for youth engagement in their communities;  <u>-Setting</u> (community acknowledges &amp; supports youth rights &amp; potentials in contributing to decisions, policies, &amp; actions).  <u>-Structure</u> (presence of structural &amp; organizational systems that support youth &amp; meet their interests as well as the needs of local government).  <u>-Strategy</u> (strategies that provide youth with diverse opportunities to meaningfully participate in community and local government initiatives).  <u>-Support</u> (supportive community, including the youth's family &amp; wider social groups, as well as stakeholders in positions of authority in local government &amp; other social institutions, that can enable youth to have a real impact through their engagement).</p>
<p>Pittman et al. (2007)</p>	<p>Four key principles of effective youth engagement;  <u>-Opportunity</u> (youth need authentic access to change-makers, as well as connections to the broader youth community)  <u>-Capacity</u> (youth need the training, tools &amp; teams to be prepared to engage in change efforts)  <u>-Motivation</u> (youth need the time to learn about community issues &amp; the chance to decide what issues they want to address)  <u>-Foundation</u> (youth need to be connected to a solid organization or group that is able to foster membership, continuity &amp; a supportive work environment)</p>
<p>UNYP (2011)</p>	<p>Four key principles of effective &amp; meaningful youth participation;  <u>-Inclusiveness</u> (diverse participation that includes voices of youth not often heard).  <u>-Clarity of Intent</u> (clear purpose that is understood by all involved).  <u>-Participativeness</u> (opportunities for mutual exchange, learning, &amp; networking)  <u>-Scope to Influence</u> (potential to bring about change)</p>

*Table 2: Factors Influencing Youth Engagement and Participation*

Table 2 demonstrates that youth empowerment encompasses multiple dimensions that not only relate to young people's cognitive and emotional features or involvement, but also to the role played by wider contextual factors in driving youth empowerment. For instance, Sherrod (2010) points out to the powerful role that well-supported political learning experiences can play in enhancing young people's sense of political efficacy, agency, and empowerment. Young people's access to

political platforms for voicing their concerns and contributing to decision-making enables them to contribute strong and creative strategies, as well as enhance their trust in public institutions (Skelton et al., 2002; Weiss et al., 2005). Also, scaffolding, or support, from the community, private sector, and government, is essential for helping youth participate in civic life. Supportive institutional and community systems, which provide spaces for youth to collaborate with other stakeholders, can help develop young people's personal and social identity and awareness, and strengthen their confidence and feelings of contribution (AEF, 2008; Burns et al., 2008; Jennings et al., 2006). It is essential that young people attain the necessary learning, training, and guidance in order to develop the knowledge and skills that can strengthen their sense of efficacy and agency; hence empowering them to meaningful engagement and participation.

### *Meaningful Pathways for Youth Engagement*

Despite the emerging focus and rising efforts for youth empowerment, the literature points out to the lack of meaningful pathways for youth active engagement in ways that authentically influence decisions and policies (Bourn & Brown, 2010; Checkoway, 2010; ILO, 2008; UNDESA, 2010). For instance, Simovska and Jensen (2009) argue that "*consequential participation, which implies young people engaging in meaningful dialogue with adults and institutions and influencing decision-making processes in matters that concern them, is still in its infancy*" (p.5). Similarly, in its report on youth engagement in policy-making, the ILO (2009) indicates that "*youth continue to face institutionalised prejudice in many quarters that see youth as lacking expertise, experience, capacity, or drive. Despite the increase in the number and range of mechanisms to engage youth, young participants continue to see their roles undermined by governments and policymakers, based on these perceptions*" (p.9). Concerning climate change and sustainability issues, there have been rising initiatives, as discussed further below, to empower youth to truly contribute to the decisions and actions that secure their quality of life over the long term.

### 3.4.2 Importance of Meaningful Youth Engagement and Empowerment for a Sustainable Future

The annual UN World Youth Report has constantly emphasized the importance of meaningful youth participation in social and political affairs in order to exercise their rights in contributing to the decisions that concern them, to contribute to the solutions to local and global challenges, and to ensure continuous societal development (e.g. UNDESA, 2003, 2010). These reports, as well as the wider literature (e.g. Bourn & Brown, 2011; Carnegie UK Trust, 2009; UNESCO & UNEP, 2011), have highlighted the significance of youth's meaningful participation and empowerment for strengthening their sense of efficacy and agency to influence changes towards a healthier and more sustainable society. As stated in 2003 UN World Youth Report; *"their role as agents of change in promoting health and development enhances their competence"* (p.28). The next section demonstrates the importance of youth empowerment to meaningfully engage with climate change and sustainability concerns, addressing the following main areas; a) rights-based argument; b) societal progress and sustainable development; and c) youth well-being.

#### a) Rights-Based Argument

*"Decisions taken about us, should not be taken without us"*<sup>74</sup>

(UNFCCC, 2010)

Young people have a right and duty to engage in a meaningful way in devising the long term pathway that secures their welfare and development (Eckersley, 2002; YFJ, 2008; UNIYY, 2010). In a rights-based argument, youth's meaningful engagement in matters that are of concern to them enables them to exercise their rights as citizens; thereby contributing to more democratic society (Bragg, 2010; Checkoway 2011). Youth have a right to freely express their views, be actively listened to and supported in their actions and endeavours (DFID CSO, 2010; Simovska & Jensen, 2009; Thomposon & Arsalan, 2007). The importance of recognizing children and young people's rights and responsibilities for participating

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<sup>74</sup> Statement made by a young participant in the 1992 World Summit on Sustainable Development

in decisions affecting their environment has been widely discussed in the literature (e.g. Hart, 1997; de Winter, 1997; Schusler & Krasny, 2008; UNFPA, 2009). Their right to participation has also been asserted by almost every national government as well as in numerous national and international charters<sup>75</sup> and institutions (Head, 2011; Sherrod et al., 2010; Torney-Purta et al., 2008). For instance, Article 12 of the Convention for the Rights of the Child states that children and young people have a right to ‘*express their views freely in all matters*’ which affect them, and emphasizes the importance of taking their views into account (Lansdown, 2011).

The all-encompassing and long-term risks of climate change, and the rising recognition of the multiple challenges for young people over the course of their lives, has led several international institutions to affirm the right and necessity for youth empowerment (Senbel, 2007; YFJ, 2008; UNESCO & UNEP, 2011; UNFCCC, 2010). For example, the UNFPA (2009; iv) points out that; "*as more young people than ever before live in the world, on the eve of events that will affect them during their whole lives, capacitating and involving young people in the response to climate change is crucial*". Also, Climate Justice<sup>76</sup> affirms the right of young people for participation as equal partners and stakeholders in the endeavours addressing climate change, its impacts, and the pathways to a sustainable future. Meaningful participation is also aligned with the sustainability worldview, which emphasizes the empowerment of youth and other stakeholders for real ownership of their visions and solutions for a sustainable future (Benessia et al., 2012; Tilbury & Wortman, 2004; UNESCO, 2005).

#### b) Youth Empowerment, Societal Progress, and Sustainable Development

*"Empowerment may be defined as a social action process through which individuals, communities and organisations gain mastery over their lives in*

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<sup>75</sup> Public recognition of young people as key actors in social development processes has been strengthened through the United Nations' Convention on the Rights of the Child (1988) the most widely ratified international agreement, which recognises that participation is a right of all children and young people

<sup>76</sup> Movement seeking to address unequal burdens of climate change through just treatment for all people and encouraging participation in policies and projects on climate impacts and response strategies. (Environmental Justice and Climate Change Initiative EJCC [www.ejcc.org](http://www.ejcc.org))

*the context of changing their social and political environment to improve equity and quality of life."*

(Barry, 2007; p.6)

Youth empowerment is crucial for their personal growth and welfare and for contributing to societal development and sustainability. As current and future citizens, decision-makers, and leaders in a climate-threatened world, young people need to be empowered to contribute to effective solutions to long-term problems (Hardy et al., 2005; Ogbuigwe, 2009). Thus, a main argument emerging across the literature for meaningful youth engagement and youth empowerment is the enhanced personal and societal development.

At the personal level, meaningful engagement promotes young people's growth, enhances their learning, and enriches their experiences (Checkoway, 2011; Jennings et al., 2006). *"Young people learn knowledge, skills, and competencies when they are fully engaged in program decision-making and planning"* (Camino and O'Connor, 2005; p.1). Authentic participation enables youth to develop important skills on critical thinking, dialogue and group dynamics, and decision-making, which will become increasingly important as they take on key roles in society as current stakeholders and future parents, citizens, and professionals (Mohamed & Wheeler, 2001; Zeldin et al., 2008). Schusler and Krasny (2008) emphasize the importance of youth participation on climate change initiatives as an act of empowerment in itself, focusing less on the extent of success of the outcome; *"regardless of whether or not their efforts are successful, engaging in collective action enables youth to think critically about the kind of world they want to live in. It also can enhance their understanding of social, economic, and political systems as they identify opportunities for and obstacles to realizing their vision"* (p.5). Through meaningful engagement, enhanced learning can also improve young people's productivity in their academic lives and workplace (Pittman et al., 2003; Weiss et al., 2005). For example, there has recently been significant growth in green industries and jobs, which provides employment to youth as well as opportunities to apply sustainability skills and practices in their workplace (UNDESA, 2010).

At the social level, youth empowerment is increasingly being emphasized as imperative for continuous community development (Sherrod, 2010; Tolman & Pittman, 2001). In particular, spaces for meaningful participation bring together youth with different stakeholders in order to recognize and understand each other's climate concerns, experiences, and worldviews, exchange ideas for solutions, and negotiate a common vision for a sustainable future. Consulting young people and involving them in local community decisions has been also shown to develop skills of cooperation which are necessary for achieving a more cohesive and democratic society (Bragg, 2010; Percy-Smith, 2006). Furthermore, as youth and other stakeholders influence change in the community together, they develop a *collective identity, collective efficacy and collective agency* (Ginwright & Cammarota, 2006; Kirshner, 2009). For instance, young people's perceived self-efficacy and agency are enhanced through participatory learning approaches that encourage shared knowledge production and building of their skills and capabilities (Checkoway, 2010; Shaw et al., 2012). In addition, young people's participation and collaboration with other stakeholders increases their sense of well-being over their value and contribution in academic and social communities, which ultimately influences more positive personal and societal development and enhances their productivity and performance (Jensen et al., 2005; Sullivan, 2011).

Another argument supporting youth empowerment relates to the enhanced decision-making process. Meaningful youth engagement can enhance policy formulation and implementation, and promote youth leadership (Thompson & Arsalan, 2007; Tolman & Pittman, 2001). Particularly concerning the climate change debate, it is essential to empower youth to be able to effectively contribute to the decisions and actions which will have long term implications on their quality of life (AIESEC, 2009; Perezniето et al., 2011; UNFCCC, 2009). On the one hand, youth in general can contribute their personal insights and experiences to help tailor the decisions for adequate management of their climate concerns and realization of their long-term visions on sustainability. Higher education youth in particular can enhance such decisions and strategies through their breadth of knowledge, technical expertise, and innovative ideas (Gardner et al., 2009; Rogers & Mentkowski, 2004; Mentkowski et al., 2000). On the other hand, youth engagement in political processes also enhances their political efficacy and self-confidence, and builds their trust in decision-makers

and political institutions (Colby et al., 2010; Evans & Prilleltensky, 2007). *"Designing a youth policy involving young people themselves stands a much greater chance of success, as interventions will have greater ownership and legitimacy amongst youth. Ignoring this dynamic can have potentially negative consequences"* (ILO, 2009; p.11).

In summary, youth's meaningful engagement with climate change and sustainability issues enables them to operate as competent and active citizens, to develop a sense of collective identity and agency, to analyze social and political power dynamics and to identify and mobilize community resources, and to share decisions of future visions, all of which are key for helping to achieve sustainable development.

### c) Youth Well-Being

*"Young people who feel engaged and who are provided with opportunities to participate, experience a better quality of life and contribute to creating and building better communities."*

(Burns et al., 2008; p.4)

Empowering young people to take positive and influential actions to face climate change or enhance sustainability, fosters their feelings of power and control over their lives and future, and enhances their well-being (Barber, 2009; Currie et al., 2012; WHO, 2009). For instance, perceived self-efficacy interacts with cognitions and motivations to influence young people's emotional states. Feelings of efficacy could reduce youth stress, anxiety, or helplessness regarding the impacts of climate change, and give them a sense of control and confidence in their actions at individual and civic spaces (Kumar & Sharma, 2012; Stokols et al., 2009). In addition, promoting youth engagement by focusing on social inclusion and empowerment can enhance physical, emotional, and mental health (Catalano et al., 2004; Hawkins et al., 2009); strengthen social relationships (Weiss et al., 2005); and enhance young people's academic performance and work productivity (Barry, 200; Fox et al., 2010). In the long-term, feelings of recognition, value, connection, and efficacy strengthen young people's resilience to climate change and their agency to influence positive societal changes. Moreover, youth participation in civic life through agenda setting, planning, and decision-making at the national and community level can foster a

positive outlook towards their future and their ability to work together to manage the climate challenges (Catalano et al., 2004). *"Adaptive capacities (to climate change) such as economic development, uniform levels of mental health and functioning, the reduction of risk and resource inequities, and engagement of local stakeholders in disaster mitigation activities are important to community resilience and the potential to adapt successfully in the aftermath of disasters"* (Kumar & Sharma, 2012; p.64).

The importance of meaningful participation for promoting well-being has been identified by various researchers and practitioners (e.g. Johnson et al., 2009; Maiteny, 2002; WHO, 2011). For example, Scales et al. (2010) found an association between young people who had multiple and meaningful opportunities for engagement and their academic, psychosocial, socio-emotional, and behavioural performance or circumstances. *"The more different types of engagement opportunities youth experience, the better off they will be"* (Sullivan, 2011; p.10). Also, youth collaborations with other stakeholders and members of society on develops *"bonds of affection and mutual concern...through being in the same contexts, working on common projects and finding common purpose"* (Flanagan et al., 2010, p. 315). This strengthens relationships of trust and support amongst youth and their wider community in facing the shared challenges of climate change and constructing their visions for a sustainable future. Ultimately, an improved sense of well-being promotes young people's contributions to society. As summarized by Burns et al. (2008; p.7); *"young people who feel connected, have opportunities to participate in meaningful activities, are included in decision making and feel safe and secure in supportive environments report better health and mental health. As a result they are more likely to be engaged in schooling, family life, positive peer relationships, civic activities, employment and contribute to the shaping and building of better communities"*.

The preceding sections have demonstrated the importance of youth empowerment to meaningfully engage with climate change and sustainability issues. Ultimately, youth engagement that is targeted towards positive societal change requires that they are equipped with adequate resources and support to build their competences and skills for long-term and efficient solutions . Education is crucial for youth empowerment. Primarily, education is a human right and an ethical task; *"Educating*

*young people for citizenship is an intrinsically normative task*" (Sherrod, 2010; p. 115). At the core of education is the transmission of values to young citizens so that they build and sustain societies that embody social justice, equity and respect, and secure and sustainable quality of life (Ashford, 2010; Djordjevic, 2011; Wals & Jickling, 2002; Tilbury & Ryan, 2011). As this study particularly focuses on higher education youth, the next Chapter discusses the important role played by higher education institutions in empowering young people, and gives examples of relevant initiatives and programmes.

## **CHAPTER 4. HIGHER EDUCATION: EMPOWERING YOUTH FOR MEANINGFUL ENGAGEMENT TOWARDS SUSTAINABILITY**

### **4.1 INTRODUCTION**

*"Education is an essential element of the global response to climate change. It helps young people understand and address the impact of global warming, encourages changes in their attitudes and behaviour and helps them adapt to climate change-related trends."*

(UNESCO doc<sup>77</sup>)

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<sup>77</sup> <http://unesdoc.unesco.org/images/0019/001901/190101E.pdf>

Today's young generations will be leading tomorrow's social and economic institutions while facing a myriad of global and local environmental and socio-economic challenges. It is essential that the institutions that are currently preparing young people for their future lives and careers foster the key principles, values, and practices that promote a healthy, secure, and sustainable future (Bokova, 2010; Martin & Samels, 2012; UNESCO, 2005). As key agents of social change, higher education institutions (HEIs) play a pivotal role in supporting young people to meet the rising challenges of climate change. Universities and colleges prepare many of the future leaders, managers, decision-makers, and other key stakeholders who influence the values, interests, and performances of future societies (de la Harpe, & Thomas, 2009; Haslett et al., 2011; Huckle, 2008; McNamara, 2008). The type of learning that students acquire at academic institutions strongly shapes their worldviews, their future careers and overall life performance (Colby et al., 2010; Orr, 2004).

It is therefore crucial that today's youth and tomorrow's leaders undertake the necessary learning and training opportunities to become key agents of change towards sustainability and societal transformation (Brundiers & Wiek, 2010; Grant, 2009). Their ability to make informed decisions and undertake effective actions in facing the climate challenges relies on their attainment of a solid and systematic understanding of the science behind climate change and its socio-cultural, health, economic, and political dimensions (Ashford, 2010; Edwards, 2012). Also, their prospects for a sustainable future require capacities and skills for critical and foresighted thinking, collaborative decision-making, and empathy (Lee, 2007; Martin & Samels, 2012; Tilbury et al., 2002).

Nevertheless, current educational programmes have been partially blamed by some experts and researchers for contributing to unsustainable political and economic systems which have generated several of today's global crises such as inequitable societies, materialized value systems, and a changing global climate (Kates, 2005; Orr, 2004). Several researchers and academics have argued that the core mission of universities, teaching and learning, needs to be holistically re-oriented to foster a more ethical, equitable, and sustainable worldview (Sterling & Schumacher, 2001; Tilbury & Wortman, 2004; Yarime et al., 2012). "*Reorienting education is also seen*

*as developing an education that involves learning the knowledge, skills, perspectives, and values that will guide and motivate people to lead sustainable livelihoods, to participate in a democratic society, and to live in a sustainable manner"* (Tilbury et al., 2002; p. 17). In order to realign such visions and practices, the United Nations Decade of Education for Sustainable Development<sup>78</sup> 2005-2014 (UNESCO, 2005) put forward a new purpose for education. The Decade holds a transformative vision of education, aiming to empower people to critically reflect upon and re-build their worldviews (McKeown & Hopkins, 2010; Tilbury & Mula, 2009; Vare & Scott, 2007). The Bonn Declaration clearly articulates this new purpose of education for sustainability; *"education should be of a quality that provides the values, knowledge, skills and competencies for sustainable living and participation in society and decent work"* (UNESCO, 2009, p. 118).

This Chapter discusses the importance of education and learning for sustainability for empowering young people towards positive societal change, and the key role of higher education institutions in advancing such empowerment processes. Section 4.2 presents the core components of education and learning for sustainability. Section 4.3 discusses the main processes through HEIs can contribute to empowering youth towards sustainability, and captures numerous examples of such diverse academic programmes as well as of youth-initiated projects and endeavours. Section 4.4 revisits key themes in this thesis and presents the conceptual framework on youth engagement as it applies in this study.

## **4.2 EDUCATION AND LEARNING FOR SUSTAINABILITY: CORE COMPONENTS**

Education for sustainability (ESD) surpasses the traditional role of education as the mere provision of information, to entail a wider perspective of empowerment of all stakeholders engaging in the process of societal transformation (Dawe et al., 2005; Fadeeva & Mochizuki, 2010). Through core components such as critical, systems, and futures-oriented thinking, reflection and dialogue, and multi-stakeholder

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<sup>78</sup> DESD

partnerships (Table 3), ESD<sup>79</sup> engages people in a reflective and active process of re-exploring their lives and their roles in relation to their environmental and social entities. Such engagement incorporates gaining sustainability knowledge and understanding and developing sustainability values; yet it also entails learning for change through challenging mindsets and worldviews to reorient them towards sustainability (Foster, 2001; Lozano et al., 2011).

<b>Core Components</b>	<b>Main Themes</b>
<b>Futures Thinking</b>	People envision their preferred futures and discuss ways to achieve sustainability. Engages people in in-depth reflection and interpretation of sustainability. Empowers people to take ownership and responsibility for a sustainable future.
<b>Critical Thinking &amp; Reflection</b>	People critically and profoundly reflect on their current lifestyles and overall worldviews, and explore new ways of thinking and living. Guides people to make informed decisions, and to understand and value the wealth of their cultural differences.
<b>Systems Thinking</b>	People think systematically and understand the interconnectedness of the ecosystem, and hence of their behaviours and lifestyles. Encourages holistic perspectives and solution-focused approaches.
<b>Participation in Decision-Making</b>	People actively participate in setting the policy agenda and deciding the adequate solutions and change strategies. Engages diverse stakeholders together to collaborate on creating a sustainable future.
<b>Partnerships</b>	Different stakeholders collaborate on decision-making and action for sustainability.

*Table 3: Core Components of ESD (Adapted from Tilbury & Mula, 2009)*

Education for sustainability engages young people in foresighted and holistic thinking whilst promoting dialogue between different stakeholders and amongst different cultures. It engages young learners in critical reflection and analysis of the causes and consequences of global issues such as climate change, and encourages creative and interactive ways of addressing these issues within their local setting.

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<sup>79</sup> The term 'learning for sustainability' is sometimes preferred by numerous sustainability researchers and practitioners, as it surpasses traditional curriculum and pedagogical approaches to entail the wider institutional engagement with sustainability as well as informal and nonformal learning. Education for sustainability is considered in this study to incorporate both dimensions of 'education and learning'.

Developing these skills amongst young people promotes ownership of their visions for sustainability and enhances their capacities to contribute towards it. It also promotes social justice and strengthens power relations between young people and their community and government (Shriberg & Harris, 2012; Wayman, 2010). Hence, ESD empowers young people to truly become active stakeholders in designing and acting towards long-term pathways to sustainable development (UNESCO, 2005; Wiek et al., 2011). Furthermore, sustainability skills and worldview can enhance young people's well-being and quality of life (Shaharir, 2012; van Egmond & de Vries, 2011). For example, Nassbaum (2001) discusses the importance of people's ability "*to engage in critical reflection about the planning of one's life*" (p. 17), in enhancing well-being.

With regards to climate change, ESD can also provide young people with experiential learning for sustainability, "*so that learners can experience and reflexively review their participation in climate change solutions*" (UNESCO, 2009c; p.4). In addition, UNESCO has developed the Climate Change Education for Sustainable Development programme, which aims to make climate change education a more central and visible part of the international response to this global crisis (UNESCO, 2009c). The programme targets an enhanced understanding of the impacts of climate change, particularly amongst young people, through strengthening the capacity of its Member States to provide quality climate change education, encouraging innovative teaching approaches to integrate climate change education in schools and universities, and enhancing non-formal education programmes through media and partnerships. For example, young people need to attain a holistic understanding of the dynamic interrelationships between the physical and human environment which are strongly demonstrated through the climate change crisis, as well as the skills to manage the ensuing challenges (Fahey, 2012; Haslett et al., 2011). At a practical level, for instance, this entails the type of learning and skills that would contribute to changes in practice such as reducing energy consumption, designing green technologies, recycling waste, as well as changes in understandings and values such as seeing the world as an interconnected system, valuing cultural and biological diversity, and recognizing the importance of dialogue and intercultural understandings for positive social change (Evans, 2011; Jones et al., 2011; UNESCO & UNEP, 2011).

Therefore, higher education institutions play a pivotal role in fostering this paradigm shift towards sustainability and in empowering young people to contribute to a sustainable future (Tilbury & Cooke, 2005; Wals, 2011). The leading role of HEIs for steering sustainability has been emphasized internationally through various declarations and agreements. The first such international declaration was the 1990 Talloires Declaration<sup>80</sup> (ULSF, 1990), which signified an international and comprehensive response by universities to leading society towards a sustainable future. This was followed by several other international declarations that progressively advanced the responsibilities and commitments of higher education institutions towards sustainability. Among the most important are the 1991 Halifax Declaration<sup>81</sup>, Chapter 36<sup>82</sup> of Agenda 21 (UNEP, 1992); 1993 Kyoto Declaration<sup>83</sup>, 2002 Ubuntu Declaration<sup>84</sup>, 2005 Graz Declaration<sup>85</sup>, and 2009 World Conference on Higher Education<sup>86</sup> (Mula, 2011). Most recently, the 2012 International Sustainable Development Conference (Rio+20) has prioritized the transition to a green economy and the institutional framework for sustainable development as key themes today towards achieving sustainable development (Biermann, 2012; Council of European Union, 2011). As further discussed below, HEIs can empower young people for meaningful engagement on climate change and sustainability issues by integrating climate change education into the teaching and learning of different courses and providing adequate training; by conducting interdisciplinary and participatory research that ensures a more holistic and systemic understanding; and by fostering meaningful involvement by students through campus and community initiatives (Lewis et al., 2008; Stewart, 2010; Wiek et al., 2011).

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<sup>80</sup> A 10-point action plan for incorporating sustainability into higher education institutions, signed by more than 400 universities and colleges internationally.

<sup>81</sup> Addresses the ethical and moral obligations of universities towards sustainability

<sup>82</sup> Emphasizes the importance of education, training, & public awareness and participation.

<sup>83</sup> Linked to the UNCED Rio 1992 Conference and Agenda 21. Calls for specific sustainability plans.

<sup>84</sup> Calls for establishing networks and Regional Centres of Expertise (RCEs)

<sup>85</sup> Emphasizes embedding sustainability across higher education.

<sup>86</sup> Encourages national funding in higher education; emphasizes cultural diversity and regional partnerships.

### **4.3 HIGHER EDUCATION INSTITUTIONS: EMPOWERING YOUTH THROUGH EDUCATION AND LEARNING FOR SUSTAINABILITY**

Universities and colleges need to produce graduates who recognize their roles and responsibilities as future leaders within the various dimensions of their work and social and individual lives. They need to inspire and educate today's youth to manage real life sustainability challenges while recognizing the social and ethical considerations entailed within their decisions (Frisk & Larson, 2011; M'Gonigle & Starke, 2006). They also need to guide these youth to continuously assess their principles and behaviours through critical reflection and systems thinking approaches, for ensuring long term and equitable sustainable development. Universities and colleges can optimize their role as key agents of social change by comprehensively integrating sustainability into their framework through an approach that *"links research, educational, operational and outreach activities and engages students in each, rather than confining their education solely to the classroom"* (McMillin & Dyball, 2009; p.56).

Key processes through which HEIs can empower young people for meaningful engagement entail;

- *Addressing curriculum changes through integration of education & learning for sustainability*; Youth need to understand the scientific and socio-political debates behind climate change, attain skills in identifying climate risks and opportunities, and develop competences for an increasingly green economy (Jones et al., 2010; Breiting et al., 2009; Sterling & Schumacher, 2001). Also, today's higher education youth need to recognize the influence of their current lifestyles as well as their future pathways and professions on the natural environment and overall society, and foster worldviews that promote a more constructive impact on the world (Whitmer et al., 2010; UNESCO & UNEP, 2009). Universities and colleges hence need to take responsibility for providing the learning and training opportunities that would foster the values, worldviews, and lifestyles required for preserving natural resources, reducing pollution, enhancing green development, fostering societal cohesion and

development, and maintaining health, well-being, and overall quality of life. Key competencies that these youth need to attain include systems thinking<sup>87</sup>, envisioning<sup>88</sup>, dialogue and interpersonal skills, active participation and partnerships, and leadership (Frisk & Larson, 2011; UNESCO, 2012a; Wiek et al., 2011). Fostering such skills requires curriculum innovation and reorientation within higher education institutions (Lotz-Sisitka, 2006; Tilbury & Wortman, 2004).

Education for sustainability needs to be embedded into the curriculum of the various disciplines and courses at HEIs, and university campuses should function within sustainability frameworks in order to provide practical knowledge and skills to students. Integrating education and learning for sustainability into the curriculum enhances students' skills to become critical, creative, and systemic thinkers and visionaries of a long-term perspective (Evans, 2011; Tilbury et al., 2002). This also enhances the students' aptitude and skills for confronting the sustainability challenges, through engaging with solution-focused and action-based education and research that provides hands-on experience and practical knowledge (Dobson & Tomkinson, 2012; Wals, 2009). Also, students exposed to sustainability principles and practices in their universities would be better equipped to incorporate these principles, values, and practices into their job performances and future careers (Lyndoh, 2005; Martinez-Fernandez et al., 2010). This is critical for furthering the sustainability transition for the long term, as these youth will be in positions of leadership within their future careers, guiding their own work teams to more sustainable performances. Youth also influence and lead their communities and families towards sustainable practices in their daily lives, such as holistic and systematic patterns of thinking and sustainable modes of travel and consumption (Johnson et al., 2009; UNEP, 2010). For example, Hayden et al. (2011) emphasize the need for higher education pedagogies to promote critical reflection and reasoning skills for ensuring youth empowerment; *"to properly teach climate change, we need to encourage critique...and to question the certainty of information provided"* (p.120). Similarly, the UN programme on youth emphasizes that *"providing young people with information and education on climate change establishes a firm foundation for environmental advocacy"* (UNDESA, 2010; p. 54).

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<sup>87</sup> Ability to collectively analyze complex systems across different domains (society, environment, economy, etc.) and across different scales (local to global)

<sup>88</sup> Please see Section 7.4.1 for clarification of envisioning.

- *Creating collaborative spaces for learning*; Universities and colleges offer a unique platform where a diverse range of disciplines, perspectives, methodologies, and academic programmes are all integrated within one institution. Yet, mutual learning and collaboration between these various academic realms need to be further enhanced, through interdisciplinarity<sup>89</sup> and transdisciplinarity<sup>90</sup>, for effectively contributing to learning and innovation for sustainability (Cortese, 2003; Yarime et al., 2012). Students and young researchers can greatly benefit from such collaborative schemes which develop an interactive and dynamic education, critical enquiry and systems thinking skills, and opportunities for sharing and learning amongst different disciplines and research approaches (Cotton & Winter, 2010; Dawe et al., 2005). Such important skills will be valuable in developing the career path for these students, as they foster the type of learning and skills necessary for transitioning towards sustainability (Lyndoh, 2005).

Also, practicing interdisciplinarity and transdisciplinarity strengthens collaborations between different academic disciplines as well as across academic and non-academic stakeholders (Schoolman et al., 2012; Whitmer et al., 2010) and trigger knowledge exchange and social innovation towards sustainability (Lukman et al., 2009; Orecchini et al., 2012; Komiyama & Takeuchi, 2006). These initiatives build young people's capacities as they learn to identify the sustainability challenges that are relevant to own their social and contextual settings, and to collaborate with academic and civic groups to develop contextually relevant solutions (Lang et al., 2012; Schusler & Krasny, 2008; Talwar et al., 2011). *"In order to strengthen the voice of young adults on the human impact of climate change we have to engage more young people from various fields other than the environment sector, such as the development sector and the health sector, because we still have not grasped the clear image of the impact of climate change on our society"* (GHF, 2009; p.11).

- *Modelling sustainability initiatives*; As teaching and learning institutes, universities and colleges can vastly contribute to sustainable development by modeling sustainability, through integrating the principle and practices of sustainability into

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<sup>89</sup> Integrating concepts, techniques, and data from various bodies of knowledge.

<sup>90</sup> Bridging the academic/research and community worlds through integrating both scientific and social bodies of knowledge.

various levels and aspects within university life (educational, research, operational, and outreach frameworks). Universities and colleges need to demonstrate their sustainability performance to their students, who will become future leaders in diverse fields, in order to guide them towards real-life applications of sustainability (Barlett & Chase, 2004; Ryan, 2011). For instance, linking campus to curriculum can greatly enhance the students' learning and understanding on sustainability by providing a practical landscape through which students and staff alike could learn and live sustainability on campus (McMillin & Dyball, 2009; Sharp, 2002). Linking the theory and practice of sustainability on campus can be achieved by reducing the carbon foot print of the institution, or improving its overall environmental performance through environmental managements systems<sup>91</sup> and sustainable procurement practices<sup>92</sup>. On-campus, such initiatives could be demonstrated through waste management and recycling projects, water and energy saving campaigns, car pooling initiatives, and local, organic produce (Carpenter & Dyball, 2006; Creighton, 2001). A critical aspect within such modelling practices is the engagement of the student body in direct and creative ways in the decision-making and operationalization of these initiatives. Studies have shown that student education and learning experiences on sustainability is greatly enhanced when their studies are integrated into campus environmental initiatives (e.g. Karol, 2006; Rohwedder, 2004).

Hence, the involvement of college and university students in campus sustainability initiatives can be an empowering and capacity building scheme. It develops their skills to identify and manage sustainability challenges in critical, creative, and collective ways, and promotes their environmental citizenship by developing meaningful relationships with their physical and social environment (Helferty & Clarke, 2009; Kezar & Lester, 2011; Wals & Jickling, 2009). Gaining a sense of ownership and connection to the campus and to the sustainability initiatives helps students recognize the significance and contribution of their individual and collective actions and initiatives and their role as key agents of change. For example, McMillin

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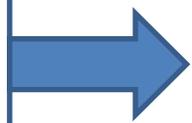
<sup>91</sup> EMSs are similar to quality management frameworks for universities (and other institutions) to manage structural and organizational practices and resources in an environment-friendly approach.

<sup>92</sup> Through integrating sustainability principles and practices into decision-making processes related to procurement, such as for construction, energy & waste management, Information and Communication Technologies (ICT), food.

& Durbay (2009) demonstrate the importance of real-world applications of sustainability on-campus for providing practical and visible examples of sustainability applications in everyday life, to which young people could more easily relate. Fig. 11 below provides insight into the benefits gained by an Australian university which models ESD principles and practices in its teaching and learning and on-campus.

The **Australian National University** (ANU) has adopted a whole-system educational programme which links the principles of sustainability being taught through courses with their applications on campus in order to promote the experiential learning of the students.

The success of the programme has largely been attributed to the vital collaborations between students, faculty, and management, and particularly to the space and trust given for the students to actively and creatively advance the campus sustainability initiatives



*Figure 11: Example of Whole-systems Educational Programme*

Finally, learning for sustainability within higher education institutions surpasses the formal education obtained through the curriculum to entail the equally important informal and non-formal education. Universities and colleges are becoming social learning institutions as they are directly linked to societies' needs and to bridging the social and political spaces (Mula, 2011; Wals, 2010). Wals and van der Leij (2007) point out that “*social learning takes place when divergent interests, norms, values and constructions of reality meet in an environment that is conducive to learning*” (p.18). Hence, social learning for education for sustainable development takes place within the diverse social and informal contexts of these institutions, and can contribute to the transformative learning of students towards sustainability (Hopkinson et al., 2008; Lipscombe et al., 2008).

#### **4.4 EXAMPLES OF YOUTH ENGAGEMENT AND EMPOWERMENT INITIATIVES ON CLIMATE CHANGE AND SUSTAINABILITY**

Young people have come together in numerous forums around the world to exchange ideas, share experiences, and develop strategies on climate change. Some of these endeavours have been established by international organizations and by public and private institutes at the national level. Yet increasingly, young people are initiating their own projects and activities that seek to strengthen their social capital and advance their endeavours in influencing change (Bragg, 2010; UNIYY, 2010; UNFCCC, 2010).

At the international level, youth presence and participation at COP sessions has gradually gained strength and focus towards official recognition. The first UNFCCC formal involvement for young people was at COP6 in the Hague, and since then each COP sessions has incorporated a youth event (Gracey, 2008; UNFCCC, 2010). Over the past several years, the participation of youth has continued to grow, yet it was only until COP 15, held in Copenhagen in December 2009, that the first time youth were officially recognized as a formal constituency, YOUNGO, (assigned provisional status pending a final decision that would legitimize its position by COP 17). “*This unprecedented coalition of participating youth organizations acts as a*

*single entity with a unified voice during official negotiations. As a recognized constituency, young people are given a speaking slot at the high-level segment of COP sessions and can make statements during the plenary. They are also able to cooperate more closely with the United Nations Climate Change secretariat, helping to organize meeting logistics and coordinate fundraising to increase the participation of young people, especially youth from the global south"* (UNDESA, 2010; p. 53). COP 15 attracted more than a thousand young people from over 100 countries. A special youth event, Young and Future Generations Day, was held to showcase different youth activities and draw the delegates' attention to the efforts being made by young people to address climate change. Youth participants in these events take part in media events, meet with Government delegations, and expand their networks (UNIYY, 2010).

Also, the Youth Caucus of the United Nations Commission on Sustainable Development (CSD Youth Caucus) forms an important avenue for youth participation in the intergovernmental processes within the UN system. The Youth Caucus is an international network constituting of almost 2,000 young leaders from over 1,000 youth organizations around the world. It aims to join together diverse youth who want to contribute to creating a more sustainable world. Its main roles encompass; a) facilitating the integration of youth voices through communicating their perspectives and coordinating their participation in CSD meetings to the Commission on Sustainable Development, as the highest-level forum within the UN system for sustainable development issues; b) increasing youth visibility and involvement within the context of sustainable development; and c) enhancing communication and information exchange between youth organizations with shared interest in sustainability (UNFCCC, 2009). Other examples of important international initiatives for youth empowerment on climate change and sustainability issues are provided in Fig. 12.

## INTERNATIONAL INITIATIVES

<b>UNESCO Climate Change Initiative (2009)</b>	A core component is the development of an overall context programme of ES to apply innovative educational approaches to CC, to build the skills for adequate and to encourage more climate-friendly lifestyles
<b>European Climate Teach-In Day (2009)</b>	Aimed at disseminating scientific information in universities and raise awareness among students; and to introduce relevant initiatives at national and international level by academic and civil society.
<b>YouthXchange Climate Change and Lifestyles Guidebook</b>	Provides an overview of how young people can contribute to climate change. It is a guide to action as individuals, consumers and as a sustainable lifestyle. The Guidebook is for young people and youth leaders aged 15-24, especially
<b>Tunza Youth Strategy (2003)</b>	Adopted by the Governing Council of Tunza at engaging youth in the work of environmental activities and decision-making <i>to develop activities in the area of environmental awareness, and information exchange among environmentally conscious citizens</i> . Tunza International Youth Conference aims to cooperate together and with other organizations <i>work strategies</i>

Figure 12: Examples of Youth Empowerment Initiatives on Climate Change and Sustainability

In addition to the supportive and collaborative endeavours with international institutes, youth-led initiatives reflect strong youth empowerment and leadership, and encourage young people's participation (Arnold et al., 2009; Davison et al., 2011; Thompson & Arsalan, 2007). Yonezawa et al. (2009) highlight the importance of youth initiatives and empowerment in guiding societal progress and strengthening the youth's learning experiences; *"future work on youth engagement should move away from the perspective that youth must appear engaged in a pre-ordained educational structure and culture and towards a vision that perceives youth as active and critical participants in the creation of those educational institutions"* (p. 192). Fig. 13 presents some examples of youth-initiated or youth-led endeavours on climate change and sustainability issues across different platforms.

EXAMPLES OF SPACES & PATHWAYS FOR YOUTH ENGAGEMENT ON CLIMATE CHANGE & SUSTAINABILITY ISSUES	
<b>ACADEMIC INSTITUTIONS</b>	<b>Green Campus Initiative</b> , a student-initiated and led organization, started in 2007 at the University of CapeTown (UCT) with the aim of transforming UCT into a sustainable and environmentally-friendly institution. GCI empowers students to take sustainability action into their own hands, thinking innovatively to increase awareness and promote sustainability on campus, and collaborating with universities management and external groups to bring necessary funding, conduct awareness campaigns and workshops, and outreach to various schools to increase awareness on sustainability.
<b>MEDIA PLATFORMS</b>	<b>Unite for Climate</b> , is a social networking tool which provides a platform for youth communication and mobilization for action on climate change. It enables youth to share media, cooperate with each other, support youth campaigns on climate change, and network with national and international organizations. It therefore capitalizes on growing technologies to establish an online community for youth to work on climate change issues.
<b>SOCIAL/CIVIL SOCIETY GROUPS</b>	<b>Youth 350.org</b> , the youth arm of the international movement (started in the USA). Initiated by young people to mobilize communities towards a more sustainable clean energy future. Aims to reduce the amount of CO2 in the atmosphere from its current level of 392 parts per million to below 350 ppm.
<b>POLITICAL PLATFORMS</b>	<b>Adopt a Negotiator</b> , international project that provides opportunities for young people from developed and developing countries to take part in UN climate talks and other key negotiations on climate change. the project provides support and training for these youth to build their capacities in dialogue, critical thinking,, and leadership, and enhance their understandings of climate change debates.

*Figure 13: Examples of Youth-Initiated and Youth-Led Endeavours on Climate Change and Sustainability*

#### 4.5 REVISITING KEY THEMES: REFLECTING ON THE IMPORTANCE OF THIS STUDY

*"The human dimension of climate change is about people, regardless of age, but the young people are the next leaders and they are eager to see changes for the better"*

(GHF, 2009; p.9)

An enhanced quality of life for today's youth and tomorrow's citizens and leaders is largely dependent on a safe environment and secure livelihood, good physical, emotional, and mental health, stable employment, and strong social connections and civic engagement (Dono et al., 2010; Hawkins et al., 2009; MEA, 2005). However, climate change is impacting health and lifestyle, challenging current practices, threatening economic systems and infrastructure, whilst also shaping future job requirements and opening up new career opportunities (UNDESA, 2010; UNFCCC, 2009). The all-encompassing and long term climate challenges can thus generate feelings of concern, hopelessness, powerlessness, or apathy amongst today's young generations unless their sense of self-efficacy and agency is enhanced for influencing positive change (Schreiner & Sjoberg, 2005; UNFPA, 2009). Empowering young people to meaningfully contribute to the visions, decisions, and actions for ensuring a safe and sustainable future is critical for their sustained development, welfare, and well-being. It enables them to develop their full potential through; a) strengthening their understanding of climate change and promoting the mindset, strategies, and actions required for efficient responses (Breiting et al., 2009; UNESCO & UNEP, 2011; Wals, 2011); b) enhancing their skills and competences for an increasingly globalized world and a sustainability-oriented economy (Fletcher & Vavrus, 2006; Johnson et al., 2009); c) learning to collaborate with other stakeholders to promote societal development and health (Moore et al., 2005; Yarime et al., 2012); and d) enhancing their sense of well-being over a more secure and sustainable future which they can construct together (Barber, 2009; Strazdins & Skeat, 2011; Weissbecker, 2011).

This study recognizes the diversity of youth understandings, experiences, learning processes, opportunities, and challenges in relation to a global yet local crisis as climate change. It recognizes the diverse domains and multiple ways in which youth could engage with climate change and sustainability issues, and the potential

implications on their short and long term well-being. Moreover, the diversity of youth engagement is a natural outcome of the existing diversity of youth (Bourn & Brown, 2011; Mohamed & Wheeler, 2001). Young people's personal journeys, experiences, and learning processes, their surrounding physical and socio-political environment, and the opportunities available to them all shape their engagement in different ways. Bourn and Brown (2011) argue that "*young people are not a homogenous group, and their experiences are likely to vary hugely with a complex interplay of factors including gender, access to information (itself affected by socio-economic status), and the nature of the communities in which they live*" (p.22).

Increasingly, the literature is citing the importance of contextual settings on engagement. Researchers are exploring the ways in which personal and socio-demographic backgrounds (Sherrod, 2010; Wiseman et al., 2010); socio-cultural norms and relationships (Spaargaren, 2003; Wells et al., 2009), socializing agents and academic institutions (Gambone et al., 2001; Sherrod, 2006; 2010), political structures and processes (Ream & Rmberger, 2008; Sullivan, 2009), and resource allocation (Oakes, 2003; Tseng & Seidman, 2007) impact contextual settings and the spaces, structures, and outcomes of youth engagement (Yonezawa 2010). For instance, Sherrod et al (2010) argue that understanding engagement and reasoning requires looking "*beyond a person's thought and values, and consider the social and cultural processes within which the individual negotiates meaning* (p.164). Such processes operate formally such as through education and informally through social interaction. Furthermore, as youth participation is mainly a collective or social act, socio-cultural and political dynamics may variously shape such participation levels and frameworks (Hart, 2008; Simovska & Jensen, 2009). As youth engagement with climate change may occur in a variety of contexts, including individual or personal endeavours, social spaces, formal and informal education and learning, the media, and political platforms, this adds to the complexity and diversity of interplay between these diverse processes and spaces for youth engagement in these different settings. Contextual differences are particularly important with regards to climate change, to which the risks, adaptation, and mitigation can widely vary across communities and cultures. Hoffman (2011) indicates that "*the issue of climate change is institutionally and culturally rooted...Although technological and economic activity may be the direct cause of GHG emissions, cultural norms and*

*societal institutions guide the development of that activity in a broad scope of institutional domains: scientific, political, social, and economic" (p.6).*

Nevertheless, the depths and dynamics of such engagement remain less understood from the perspectives, experiences, and interactions of youth themselves in their particular contextual settings (Simovska, 2010; UNIYY, 2010). The review for this study has not been able to identify any particular studies which have sought to explore with young people their personal experiences and concerns and their collective understandings and actions on climate change, particularly through a critical perspective which recognizes power relations and seeks to contextualize such forms of engagement in distinct countries. Also, despite the fact that climate change may have important implications on young people's short and long term well-being, and although their empowerment to meaningfully engage in devising long-term strategies for securing a sustainable future would enhance their well-being, yet this area remains under-researched and the underlying interrelationships lack profound insight (Strazdins & Skeat, 2011; WDR, 2010).

#### *Conceptualizing Youth Engagement in This Study*

Across the multiple themes and interpretations of youth engagement discussed in the previous sections, a common thread has often been the complex, multi-dimensional, and power-laden process that overrides the general notion of active youth participation or involvement. Similarly, this study recognizes youth engagement as a dynamic process rather than a simple state, encompassing a diversity of reflective, affective, active, interactive, and contextual components. The study also considers such engagement to be influenced by various personal and contextual factors such as young people's life experiences, socio-demographic and academic background, and the overall environmental and socio-political setting.

This study seeks to address some of previously mentioned gaps in the literature by gaining insight into the underlying dynamics of Dutch and South African youth's engagement with climate change and well-being. In the context of this research, each

of the Netherlands and South Africa<sup>93</sup> has diverse socio-historical profiles; cultural values and norms; academic institutions, media and information systems and access; and political settings (Kabat et al., 2005; Madzwamuse, 2010). In addition, the personal and social experiences of youth in these two countries have also taken distinct pathways and priorities throughout the years (Dolby, 2001; van Ewijk, 2011). Nevertheless, global youth today are confronted with the challenges of climate change, although in different degrees of vulnerability and pathways of participation (GHF, 2009; UNFPA, 2011). Critically exploring young people's engagement with climate change and well-being, with recognition of these contextual influences, can deepen the understanding of such engagement. It also provides insight into the type and context of learning and power dynamics which occur across the different forms and settings of engagement and participation (Jennings et al., 2006; MacKinnon et al., 2007). *"A better understanding of what makes particular settings more effective and supportive for youth will enable policymakers and educators to alter social settings systematically to improve setting outcomes"* (Yonezawa et al., 2009; p.198). This enhanced understanding can also guide practitioners seeking to empower youth, through informing them of their priorities, concerns, and preferences for climate change, health, and sustainability participation strategies. The next Chapter (5) contextualizes these diverse research themes in the specific country settings of the Netherlands and South Africa.

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<sup>93</sup> Chapter 5 thoroughly explores the contextual settings of the Netherlands and South Africa.

# **CHAPTER 5. UNDERSTANDING THE CONTEXTUAL SETTING OF THE RESEARCH THEMES IN THE NETHERLANDS AND SOUTH AFRICA**

## **5.1 INTRODUCTION**

The importance of context has been repeatedly emphasized throughout this thesis. Undertaking a critical interpretivist approach, the study is focused on the social construction of knowledge and on collective processes of meaning-making and interpretation which influence actions (Merriam, 2009; Willis, 2007). It thereby considers that the youth's understandings, experiences, and actions with regards to climate change and sustainability, their feelings of vulnerability or security, their sense of empowerment to influence change, and their overall sense of well-being in relation to present and future climate challenges, are all partly shaped by the youth's contextual settings. Such settings encompass personal and academic backgrounds and experiences, social interactions, shared identities, and power dynamics, as well as the surrounding environmental, socio-political, and cultural structure. Therefore, attaining a deeper understanding of youth engagement requires the consideration of the role played by the country context in influencing or shaping such engagement (Dono et al., 2010; Sherrod, 2010; Yonezawa et al., 2009). Two distinct countries,

the Netherlands and South Africa, are chosen in this study to critically explore youth engagement with climate change and well-being.

The Netherlands' name in itself - a low-lying land - reflects its vulnerability to climate change. The densely populated Western European country has more than a quarter of its total area, 21% of its total population, and over two-thirds of its economy, below sea level. Its coastal region is also the center of its economy, with 65% of its wealth lying in flood-prone areas (Stive et al., 2011; Olsthoorn & Tol, 2001). These geographic features have rendered the Netherlands vulnerable to the impacts of climate change mainly through sea level rise and river flooding (Gupta et al., 2006; VROM, 2009). In addition, with an increasingly aging population, the Netherlands is reaching out to its youth to lead the way into a sustainable future. The young generations have long held an important role in Dutch society. The Dutch youth were particularly active during the 1960s and 1970, at times of major social and cultural changes that were taking place (Tauritz & Wals, 2009; van Ewijk, 2011). They were instrumental in rejecting traditional social values and the divisions across social classes and religious groups, and in driving change in issues concerning women's rights, world politics, and environmental concerns. Overall, as one of the richest and most developed<sup>94</sup> countries in the world, the Netherlands has been able to effectively respond to the challenges posed by climate change through major technical and financial investments and structural developments and innovations (Döpp et al., 2009; Klein & Lenderink, 2009).

The African continent's vulnerability to climate change has been confirmed in several scientific studies and international reports (Conway, 2009; Desanker, 2002), and South Africa's development challenges and low adaptive capacities place it in a similarly vulnerable position. Overall, South Africa has the largest economy in Africa and the 28th-largest in the world (Madzwamuse, 2010), and is ranked as an upper-middle income economy by the World Bank<sup>95</sup>. Nevertheless, the complexity of multiple social and developmental stressors further aggravates the country's situation in facing climate change. The country is confronting existing developmental challenges such as widespread poverty, complex governance and

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<sup>94</sup> 9<sup>th</sup> highest per capita in the world

<sup>95</sup> <http://data.worldbank.org/country/south-africa>

institutional problems; limited access to capital, including markets, infrastructure and technology; ecosystem degradation; and great disparities in housing and educational opportunities and health status across its population (Reid & Vogel, 2006; Shewmake, 2008). Such complexities have contributed to South Africa's weak adaptive capacity, increasing its vulnerability to projected climate change (SARVA, 2010; Ziervogel et al., 2008). Today, young South Africans are in a remarkably challenging position, as they need to face such confounding challenges throughout their lives as they build towards a more equitable and sustainably developed nation (Bruinders et al., 2009). South African youth have played fundamental roles throughout their country's history, particularly in the last twenty to thirty years with their struggle against apartheid and their endeavours towards a just and prosperous society (NYC, 2009). Theirs was a national struggle; today's generation of young South Africans are confronted with an all-encompassing global challenge that is shared with youth in every other nation.

This Chapter aims to provide a detailed overview of the Dutch and South African context regarding the research themes in this study. Section 5.2 focuses on the Netherlands, and Section 5.3 focuses on South Africa. Each Section briefly introduces the overall country context, and then discusses the country's socio-political history and environmental setting including climate change vulnerability and adaptability. These diverse contextual settings are then discussed with regards to the implications on the particular country's youth and the importance of their engagement with climate change and sustainability issues, with particular focus on higher education youth and their academic settings. Finally, examples of diverse initiatives regarding youth engagement in each country are also provided.

## **5.2 NETHERLANDS CONTEXT**

The Netherlands' long colonial history and its struggles under the Nazi occupation have impacted its international political standing, its economic development, population structure, and socio-cultural heritage<sup>96</sup>. For instance, its history has

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<sup>96</sup> Table 3a in Appendix 3 provides a summary profile of the Netherlands.

shaped the Dutch population which consists of diverse ethnicities and immigrants from different countries. Its capital, Amsterdam, consists of around 170 nationalities, with 45% ethnic minority groups originating from its various colonies (Deben & Bontje, 2006; Gilderbloom et al., 2008). In addition, the Dutch history has influenced its stances and practices on democracy and human rights and has helped reinforce a culture of tolerance which constitutes an important feature within Dutch identity (Musterd & Salet, 2003). This tolerance is for instance reflected in the Dutch political system which constitutes a plurality of parties with progressive goals, or with its development of international law as the Netherlands has become a hub for major international courts and organizations<sup>97</sup>. Dutch youth have also played a key role in the vast societal changes that took place in the Netherlands, particularly during the 1960s and 1970s. Dutch youth movements have addressed a range of socio-political and environmental issues, such as social justice, freedom of speech, civic rights, participation in policy-making, employment, and environmental pollution (EU, 2012; van Ewijk, 2011).

Moreover, the Netherlands' vulnerability to water issues has also established a long history of coastal and river flood management and overall environmental governance. The Dutch coastline has undergone considerable changes throughout the decades as a result of natural disasters and human activities (MNP, 2005). This has also shaped several of the Dutch society's norms, lifestyle, and government-citizen relationship. For instance, a large proportion of the population are living in flood-prone areas and the country has had a long history of flooding events in the past decades (Tol & Langen, 2000). Olsthoorn & Tol (2001) indicate that; "*being at risk to floods has always been a condition of life. Rooted in history, the main hydrological risk for the Dutch is the threat to personal safety*" (p.6). Also, there is a generally tendency amongst the Dutch population to rely on their government for managing environmental risks and for supporting environmental policies (Aalbers et al., 2007). Further details regarding the general environmental setting and the main features of climate vulnerability and response strategies in the Netherlands are discussed in the next section.

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<sup>97</sup> The UN International Court of Justice, the International Criminal Court, and the Organization for the Prohibition of Chemical Weapons, are examples of major international institutions based in the Netherlands.

### 5.2.1 Climate Change Vulnerability in the Netherlands

The Netherlands' vulnerability to climate change is increased by its geographic and environmental features and its demographic characteristics. Geographically, the Netherlands is dominated by the sea<sup>98</sup> and situated in a low-lying delta area, with more than 50% of its terrain lying less than one meter above sea level (Stive et al., 2011). Most of its land is formed by the estuary of three important European rivers<sup>99</sup>. Olsthoorn and Tol (2011) provide a clear descriptions of the Dutch terrain; "*a large part of the Netherlands is 'man made'. So, in a way, much of the geography of the Netherlands is a 'technological' artefact. Polders, dikes and systems for pumping water are most well known elements of the Dutch geography*" (p.8). The Netherlands' geographic location and environmental resources have served as important economic forces for the small country. It is a leading maritime trading nation and a transportation hub for Europe. The industrial structure of the Netherlands is energy-intensive due to the chemical and petroleum refining industry, mainly in Rotterdam which is one of the largest ports in the world (VROM, 2009). Its large industrial and transportation sector have considerably contributed to greenhouse gases emissions over the past decades. Also, its gas and oil resources in the North Sea have constituted an important source of energy for decades, yet will eventually become depleted, and the Netherlands is currently investing in renewable energy, mainly biomass and wind (Stevens, 2012). Agriculture is also an important sector in the Netherlands; greenhouse horticulture is the most important subsector and contributes to its large exports value as well as its GHG emissions (EEA, 2010). Another environmental pressure is related to imported goods and services which are produced abroad, as the Netherlands' small size coupled with highly dense population and increasing pressures for reduction in emissions has led towards the use of land in other countries for economic production. This contributes to the loss of biodiversity as well as to intensive resource and energy use (Vringer et al., 2007). As such, at the economic level, "*the Netherlands is economically embedded in a global context: domestic consumption is fed by imported products and production within the*

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<sup>98</sup> More than half of the Netherlands is built on reclaimed land called polders. Water security is maintained through large structures including dykes, dams, and huge storm barriers.

<sup>99</sup> Rhine, Meuse, Scheldt rivers

country, while national production not only nourishes domestic consumption, but also contributes to exports for consumption abroad. As a result, environmental pressure related to Dutch consumption and production is spread throughout the world" (Aalbers et al., 2007; p.7).

The Netherlands' demographic characteristics include a high population density and an aging population. The population density is highest in the Randstad<sup>100</sup>, and the national rate is expected to increase in the coming decades as a result of decreasing mortality rates and rising immigration levels. This would exert additional pressure on environmental resources and increase the demand for land and for public services (VROM, 2009). Furthermore, as one of the richest countries in the world, the lifestyle of the Dutch people is also energy and resource intensive, with the Dutch CO<sub>2</sub> emissions per capita<sup>101</sup> among the highest in the world (EEA, 2010). For example, the Dutch Ministry of Infrastructure and the Environment cites '*a significant growth in residential electricity consumption*' (VROM, 2009; p.20) in the past few decades as a result of the increase in the number of single-person households and the level of household use of electric appliances. This is further manifested in the decreasing forest area (11% of total area of Netherlands), which increases demand for woodland with the rising population and intensive land use. Nevertheless, regarding emissions from transportation, contributions from the Dutch population is relatively lower than other European countries, largely due to the widespread culture of cycling in the country. For example, in Amsterdam, almost 77% of the population owns a bicycle and 28% of trips are made on bikes (Gilderbloom et al., 2008).

### ***Impacts of Climate Change in the Netherlands***

Scientific projections suggest that the climate in the Netherlands would undergo changes in the future, resulting in warmer and wetter winters, drier and hotter summers, changes in biodiversity and a rising sea level. An increase of one degree has been measured in the Netherlands over the last 100 years, while warming also continued over the last few years (Klein & Lenderink, 2009). With an average temperature of 10.6°C, 2004 was the twelfth year in a row with an average

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<sup>100</sup> Western part of the country, include Amsterdam, Rotterdam, Hague, Utrecht, and towns in between.

<sup>101</sup> The current level of per capita greenhouse gas emissions related to Dutch consumption is almost 2.5 times the global average level.

temperature above 10°C: the 30-year average being 9.8°C. The years 2006 and 2007 were the warmest in at least 300 years, with an average of 11.2°C (Hurk et al., 2007; Van den Hurk et al., 2006).

Four national climate scenarios have been developed by the Netherlands Meteorological Institute (KNMI), focusing on the variability in climate outcomes and differing on two main variables: temperature increase and direction of circulation. Current reviews propose an 80% chance that the trends in the Dutch climate will be within the range covered by the four scenarios. Some of the climate impacts are already being manifested in the Netherlands. The observed alterations in river discharges, rise in precipitation frequency and intensity, and increase in the frequency of floods are all inter-connected and have been attributed to climate impacts (Vellinga et al., 2008).

The potential consequences of climate change in the Netherlands have been documented, according to de Bruin et al. (2009), by reports of several national agencies and research institutes, such as the National Institute for Public Health and the Environment (RIVM, 2004), the Climate Policy report commissioned by the Parliament (Rooijers et al., 2004), the Climate Effects report of Netherlands Environmental Assessment Agency (Gupta et al., 2006), and the climate reports of the Royal Netherlands Meteorological Institute (KNMI, 2003, 2006). Several academic research institutes have also conducted extensive research on this subject, including the University of Amsterdam, Utrecht University, Wageningen University, and the Delft University of Technology (VROM, 2009). According to these studies, the main impacts from climate change in the Netherlands entail the increased risk of storms, more prevalent flooding due to sea level rise and increased river peak discharges, and increased frequency of summer droughts and extreme winters. Table 3b in Appendix 3 presents a summary of the main projected impacts of climate change in the Netherlands and the main response strategies per sector. The next section discusses the potential implications on Dutch society, particularly its youth.

### ***Implications of Climate Change on Dutch Society***

The impacts of climate change in the Netherlands encompass both positive and negative aspects. On the positive side, the recreation sector may be strengthened

through warmer temperatures that prolong the tourist season as well as encourage more Dutch to remain in the country for their holidays. For example, studies have shown that during the summer months of June, July, and August, the temperature in certain holiday areas including Southern Europe and the Mediterranean region may become too high for tourists to bear, thus encouraging an upsurge in tourist numbers to more temperate climates which are likely to become more favourable (Amelung, 2004; VROM, 2009).

Overall, the threats of floods, storms, and heat stress impose several negative impacts on the Dutch society. In terms of health, a national review study in 2009 identified the main health concerns in the Netherlands from climate change to entail temperature-related effects; heat stress and air pollution; allergies; vector borne diseases and food and waterborne infectious diseases (Hunyen & van Vleit, 2009). In general, the main known health risk is that of heat waves (Döpp et al., 2009; Rahola et al., 2009). For example, the period between 1979 and 1997 witnessed extreme rises in temperatures during several heat waves, resulting in almost 12% rise in death rate. Also, the extreme wave of heat that hit Europe in August 2003 led to more than 500 additional deaths in a period of 2 weeks in the Netherlands, particularly amongst the most vulnerable population groups including the elderly, children, and people with illnesses (Garssen et al., 2005). Furthermore, as rising temperatures and potential heat stress would lead to an increase in household consumption of drinking water in summer, potentially contaminated water supplies would threaten public health (Hunyen & van Vliet, 2009). Other important threats to public health from climate change include the rise in allergies and diseases with rising temperatures or rainfall intensity. The changing weather and climate in the Netherlands can significantly impact people with allergies and respiratory illnesses. For instance, over 20% of the Dutch population has hay fever allergy which is often caused by pollen (Takken & Knols, 2007; Wardekker, 2011). However, some researchers have pointed out to the lack of specific and targeted health data on climate change impacts in the Netherlands (Hunyen & van Vliet, 2009; Wardekker et al., 2012;). For example, Wardekker et al. (2012) conducted a formal expert elicitation to assess the extent of uncertainty regarding conceivable health impacts of climate change in the Netherlands, and their implications for climate change adaptation.

The Netherlands has also been repeatedly confronted with floods in the last few decades, with sometimes severe consequences on the country's physical infrastructure, economy, and social community (Kok et al., 2002). Some of its physical consequences include the damage to horticulture in the Westland area, the flooded museum in Groningen, and the many flooded streets in various parts of the Netherlands (Gilderbloom et al., 2008). Nevertheless, there are regional differences in rainfall intensity and flooding risks, even on a small scale as the Netherlands. Finally, floods and other extreme weather conditions possibly mean higher risks for external safety and security: drifting of tanks, chemical installations, or waste and the collapse of buildings can lead to injuries, lives lost and environmental damage (Döpp and Albers, 2008).

Ultimately, the climate change impacts would have important implications on the security, functioning, and general quality of life of Dutch society if not managed adequately for the long-term (Hurk et al., 2007). The Dutch government has legislated and devised important response strategies in order to ensure its long-term protection against the risks of climate change.

### ***Climate Change Response Strategies in the Netherlands***

*"The space in the Netherlands must be adapted such that the effects of climate change are "acceptable". After all, we cannot eliminate them. This has been termed, in short, the "climate proofing" of Dutch spatial planning."*

(VROM, 2007;

ii)

The Netherlands' long history of continuous battle with the sea has led the Dutch government towards strategic and fore-sighted decision-making<sup>102</sup> regarding the challenges posed by climate change as well as its overall national development (Stive et al., 2011). The Dutch have learned to cope with the challenges of climate change and to work with rather than against the sea. *"In the Netherlands, many key decisions about future developments are being taken now, and incorporating*

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<sup>102</sup> According to the Environmental Protection Act (EPA) of 1993, the Dutch government must develop a National Environment Policy Plan (NEPP) every four years, and an annual Environment Programme.

*climate-change risks and opportunities into these decisions, as was recently called for by the senate of the Dutch parliament, is essential.... For the Dutch government, climate change is now accepted as an issue to address in many sectors and policies"* (VROM, 2009; p.32).

Overall, the Dutch research and policy on climate change has been mainly focused on three main areas, namely water, biodiversity, and energy. Climate change adaptation strategies have been integrated into the water policy agenda with a focus on prevention (Veerman et al., 2008). For example, the Flooding Defence Act and Coastal Defence Policy have been adopted as precautionary measures which incorporate emerging trends in climate, such as preparing regular risk assessments of flooding and coastal damage which might influence spatial planning and construction projects in flood-prone areas. There are over 50 dyke rings<sup>103</sup> in the Netherlands, and in economically important and densely populated parts of the Netherlands, the standards of flood defence are the highest in the world; dykes protect delta regions from a flood event expected to occur once every 10,000 years (KNMI, 2006).

Notwithstanding major investments in technological and structural projects to protect against flooding, Brinke et al. (2008) argue that Dutch policy remains generally focused on mitigation consequences rather than strengthening flood defences. The major safety measures against flooding have been developed in the lowest lying areas of the country. Other areas have been less protected against flooding. For example, Stive et al (2011) indicate that one of the main vulnerable areas to flooding is the province of South Holland, an important economic area, which is at risk from extreme storm surge levels and extreme river discharges, yet some areas are less prioritized than others; *"...although not all Dutch citizens may be aware of it, their government has accepted – even legislated – unequal protection, or what engineers euphemistically call ‘differentiation’, based on the fact that all places cannot be protected up to the same standard and individual cost must be balanced against collective cost"* (p.116). More recently, climate adaptation is gaining higher

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<sup>103</sup> Areas protected by dykes

consideration on the agenda of politicians, public administration and civil-society organizations (Biesbroek et al., 2010).

The Ministry for Infrastructure and the Environment<sup>104</sup> is the coordinating governmental body in the Netherlands for climate change policy, mainly responsible for environmental legislation and policy development. As the main adaptation concerns in the Netherlands relate to questions of flooding prediction and protection, spatial adaptation has become an administrative priority, as identified by the National Programme for Spatial Adaptation to Climate Change (ARK) in 2006 (van Ierland, 2006; VROM, 2009). This broad strategy addresses the various effects of climate change, including water safety, the agricultural sector, biodiversity, recreation and landscape, the urban environment and industry. Emphasis is placed on anticipating the climate impacts to be able to adequately manage them, as well as on stimulating innovation in management, research, design, and implementation through capitalizing on the opportunities presented by climate change (VROM, 2009). The programme has developed the National Adaptation Agenda 2007-2014 which identified the main activities that need to be undertaken for climate proofing spatial planning in the Netherlands. Also, the strategy recognizes the importance for raising awareness of the Dutch public and other stakeholders to climate risks as well as to the options for adaptation, and increasing their involvement in the development of climate response measures. For example, the interdepartmental Dutch climate change programme<sup>105</sup> on energy, 'Clean and Efficient', recognizes the importance of awareness raising and knowledge dissemination and communication in achieving significant changes in energy consumption and more environmentally-friendly lifestyles (SP&E, 2007).

The Dutch government has also established two national research programmes on climate change; Climate Changes Spatial Planning (KvK) and Knowledge of Climate (KvR) (VROM, 2009). These programmes work closely together, and also support certain international projects in other countries. The first programme, KvK, aims to provide a solid knowledge base to policymakers and practitioners on adequate coping system, by focusing on climate scenarios, mitigation, adaptation, and

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<sup>104</sup> Known as the Ministry of VROM

<sup>105</sup> Set ambitious targets for energy use reduction by 30% in 2020 as compared to 1990 levels

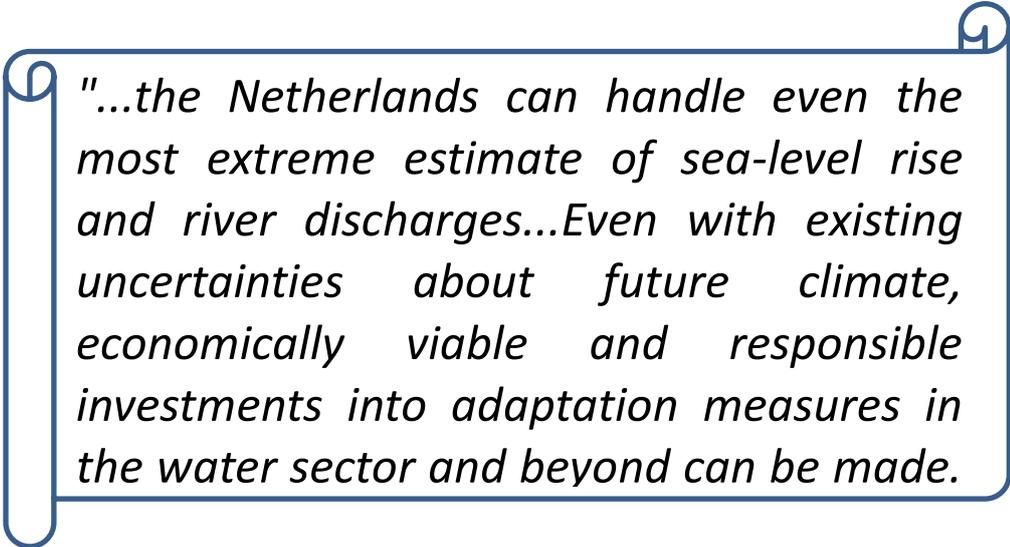
communication. KvR is mainly concerned with climate proofing the Netherlands. It aims to develop knowledge and services that help guide assessments of investments in spatial planning and infrastructure through focusing on eight 'hotspot'<sup>106</sup> areas such as the Rotterdam region, low-land rivers, and Schipol Airport. The programme is a collaboration between different national, regional, and local governmental bodies as well as private businesses. It also entails the Climate Knowledge Facility, which consists of model and research platforms for promoting knowledge transfer to communities, multi-sectoral dialogues, and international cooperation (KvK, 2009). Regarding the health effects of climate change in the Netherlands, the knowledge gaps in this area have been recognized in National Environment and Health Approach 2008-2012, which concluded that Dutch society has insufficiently prepared for the public health risks of climate change (Hunyen & van Vliet, 2009). Recently, a proposal for a research programme 'Climate Change and Health' aims at addressing these knowledge gaps through interdisciplinary research.

Finally, the Dutch government aims to make the Netherlands climate-proof by capitalizing on innovative strategies and green technologies to cope with the rising sea levels and the risks of river overflows. For example, Dutch experts are working on plans to develop floating farms, industrial and residential areas to manage both the rising demands for land and for new housing as well as the rising flood waters caused by climate change. *"From creating land to expanding floodways, to defending against global warming, the Dutch understand that human/nature conflict is something that requires engineering entrepreneurship to avoid...The Dutch take emergency planning to the next level by employing its most creative ideas to protect Dutch lives and property"* (Gilderbloom et al., 2008; p.28). Therefore, despite its geographic vulnerability, the Netherlands' technical and financial resources, and its focus on innovation in research and management, has enabled it to minimize the viability of risk from climate change, and to use the opportunities offered to move towards sustainable development. *"A lack of readily available renewable energy resources has made the Dutch inventive. As in a stereotypical picture, the Dutch produce energy from wind-mills, cycle paths and... cows"* (Stevens, 2012; p.1). The

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<sup>106</sup> Selected based on being major economic and infrastructural pillars in the Netherlands

relative security of the Netherlands against the risks posed by climate change can be best manifested through the following statement (Fig.14).



*"...the Netherlands can handle even the most extreme estimate of sea-level rise and river discharges...Even with existing uncertainties about future climate, economically viable and responsible investments into adaptation measures in the water sector and beyond can be made.*

*Figure 14: State of the Netherlands on Climate Change*

The next section discusses the implications of the overall Dutch environmental context and climate vulnerability on Dutch youth's lives and on their forms and processes of engagement.

### **5.2.2 Dutch Youth in A Changing Climate**

The previous section has demonstrated the main risks and impacts of climate change in the Netherlands and the adaptation measures undertaken to ensure the security and welfare of the Dutch community. Although the Netherlands has to a large extent succeeded in anticipating and managing the climate impacts through fore-sighted governance and innovative infrastructures, yet the country remains challenged with continuous risks given its geographic vulnerability to these impacts. Therefore, although Dutch youth might be relatively protected from the direct physical impacts of climate change, yet they remain continually burdened with the necessity of adequate management of its long-term risks for maintaining their security (VROM, 2007). They will need to live with the awareness and concern of a constant climate

threat and potential risk. In addition, in an increasingly globalized world in which lives and lifestyles are growingly interconnected, Dutch youth are also confronted with a global reality of climate change that is disproportionately impacting different regions and unjustly impairing vulnerable communities (Aalbers et al., 2007). The values, decisions, lifestyles, consumption patterns, and actions of people around the world is impacting the global ecosystem and shaping the lives of young people in different contexts of vulnerability.

Therefore, discussing the implications of climate change on Dutch youth's lives and well-being and exploring their diverse facets of engagement with this reality cannot be dissociated from the wider global dynamics of the climate crisis and from the lives of youth in different contexts (Johnson et al., 2009).

Over the long-term, escalating temperatures are expected to generate greater demand for drinking water and for energy usage. Yet the risk of groundwater infiltration from rising sea levels and the projected decrease in the availability of cooling water capacity might generate problems for public health and for the maintenance of power stations and industrial plants. VROM (2007) asks "*What can we do to keep the cooling of power stations and industrial plants from becoming a problem within several decades?*" (p.21). Also, the Netherlands' dependence on agricultural yields and industrial production in other countries implies that the projected decrease in agricultural yields as a result of rising temperatures and water shortage in these countries might negatively impact the Dutch economy. This might infer changes in the consumption patterns of today's youth and possibly shifts in their diet and sources of food (Villarreal Herrera, 2010).

Another potential risk over the long term is related to the transport system, as the level of preparedness of the Dutch roads and rail systems for coping with increasingly severe weather conditions, stronger winds, and more frequent storms is not well known (VROM, 2007). Also, the temperatures reached during the summer of 2003, which caused numerous health problems and disruptions to physical infrastructure, are expected to become the norm by 2050 (Hurk et al., 2007). The risk to water tables raises concerns related to water safety, river transport, and drinking water supplies, and the readiness to prevent the occurrence of adverse impacts which would place their toll on today's youth.

As for health concerns, repeated exposure to heat stress and the associated rise in vector-borne diseases might increase future rates of dehydration, illnesses, and mortality amongst Dutch youth; or might increase illnesses related to air quality such as summer smog as well as allergies, particularly hay fever (Schijven & de Roda Husman, 2005). Several of these health effects may be related to changes in behaviour, as higher temperatures drive people to more frequently spend longer periods of time in outdoor recreational activities. This would increase their exposure to harmful sun rays, air pollution and pollen, and waterborne diseases (Wardekker et al., 2012). Furthermore, the continuous climate risks could increase stress levels amongst today's young people who are living in the Netherlands and dealing with these risks on a daily basis. As thoroughly discussed in Section 2.3.2, the exposure to or continuous risk of climate change impacts could have significant implications on young people's emotional and mental health and their social interactions. In addition to the direct and indirect physical and emotional impacts of climate change on the lives of Dutch youth, it is also important to consider the implications of a constantly changing physical and social environment on their lives, well-being, and overall development (Fritze et al., 2008; Swim et al., 2009). Local adaptive efforts that need to be regularly monitored and enhanced to meet the changing circumstances, and innovative approaches which would infiltrate various structures and systems in Dutch society, imply that Dutch youth would need to constantly adjust to change. Overall, as the level of actual threat from these potential climate effects on health in the Netherlands remains insufficiently studied (Hunyen & van Vliert, 2009; Wardekker et al., 2012), the potential health and well-being risks for Dutch youth becomes more worrisome. These overlapping climate risks can particularly challenge today's higher education youth in the Netherlands, as further discussed below.

### ***Dutch Higher Education Youth and Climate Change***

Dutch higher education youth are key stakeholders to guide, decide, innovate, and lead their society towards a more secure and sustainable future. As the constant climate risks require continuous management, innovation, and action, they will be the frontrunners not just for dealing with these challenges in their daily lives, but also for working towards solutions in their communities and jobs (O'Loughlin & Wegimont, 2005; van Heeswijk, 2009). It is therefore crucial that they develop the competencies and skills to effectively manage the rising global and local challenges

of climate change as well as successfully lead Dutch society towards an increasingly green economy.

The Netherlands' long history of nature conservation and management has partly influenced the incorporation of environmental topics into the school and university curricula in the country. Traditionally, the focus has been on providing learning opportunities with nature such as camps and excursions and raising awareness on various environmental and public health issues such as recycling and healthy diet. More recently, governmental bodies and academic institutions are increasingly emphasizing the importance of education for sustainable development for promoting critical and futures-oriented thinking, reflection and dialogue, and collaborative work amongst its youth (Tauritz & Wals, 2009). Nevertheless, the country's constitutional right for freedom of education<sup>107</sup> implies the absence of a formal or national structure for integrating ESD into the educational programmes of Dutch schools and universities (Eurydice, 2011). In primary schools, sustainable development often forms part of environmental education projects offered by NGOs or local environment groups. Yet around eighty schools have structurally embedded ESD into their curriculum, and several others have adopted international ESD frameworks and principles such as eco-schools or UNESCO-profile-schools. At the level of secondary schools, ESD is often integrated into existing subjects such as geography, biology, natural sciences, or technology-related subjects. In vocational education, emphasis is placed on developing competencies and practical skills related to sustainable development, such as the application of environmentally friendly material in sustainable buildings (van der Waal, 2011).

In higher education, sustainability is embedded into various curricula in higher education institutions but most often as separate projects or as interdisciplinary endeavours in some institutions rather than ESD as a mainstream or integral vision of the institution. Dutch universities of applied sciences generally pay more attention to sustainable development than traditional research universities. A sustainable development charter signed at universities of applied sciences has resulted in the embedment of sustainability in educational programs. Other universities usually

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<sup>107</sup> Schools are free to choose the educational content and methodology. As a result, top-down influences on academic curricula is limited; higher education institutions are fully autonomous.

incorporate sustainable development in research programs, offer bachelor and master programs in sustainable development, or develop special summer courses (OCW, 2009, 2012).

The Dutch Programme 'Learning for Sustainable Development' (LfSD) was developed as the National ESD Strategy for the Netherlands. It aims to enhance education and learning processes on sustainability through promoting the integration of sustainability and climate change issues into the curricula of educational institutions (primary, secondary and higher education) and in teacher training programmes (Heideveld & Cornelissen, 2009; LfSD, 2004). It also addresses non-formal and informal education processes for ESD, through initiatives that seek to build competencies, promote knowledge, and develop networks and collaborations within different stakeholders. In addition, the LfSD programme is the Netherlands focal point for the UNESCO Decade for Education on Sustainable Development. A Core Curriculum Learning for Sustainable Development was also developed in formal education for students aged 4 to 18. Four bottom-up networks working on promoting sustainable development in formal education in the Netherlands include the Dutch Network for Sustainability in Higher Education (DHO); *Morgen*; the Network for Sustainability in Vocational Education (DMBO)<sup>108</sup>, and the Network for Sustainability in Teacher's Colleges<sup>109</sup>. The two networks focused on higher education are DHO and *Morgen* (van der Waal, 2011).

- *DHO* - the Dutch Network for Sustainability in Higher Education, founded in 1998. It is a network of more than 1500 teachers, board members from all universities and technical universities. It is financed by the Ministry of Education (50%), by NGOs (30%), and by higher education institutions (20%).
- *Morgen* – Students Network for Sustainable Development in Higher Education<sup>110</sup>, established in 1994. *Morgen* is a student-led network organization which aims to engage students in the daily practice of sustainable development, integrate sustainable development in curricula,

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<sup>108</sup> Established in 2005, works with 19 Technical Vocational Education and Training (TVET) secondary schools in order to facilitate the implementation of sustainability in their educational curricula.

<sup>109</sup> *Duurzame Pabo*, established in 2005, is focused on teacher training

<sup>110</sup> For more information, see <http://www.studentenvoormorgen.nl>

develop internships, and support or lobby universities to change towards a more sustainable management.

Finally, the review by van der Waal (2011) indicates that, based on reports by the Dutch Ministry of Economic Affairs, Agriculture and Innovation (EIM, 2008) and MVO<sup>111</sup> Nederland (2008); *"the ability to act sustainably is hardly expressed in society. Awareness may be there, but the sense of urgency is not sufficiently felt by citizens, politicians and businesses"* (p.44). ESD in the Netherlands therefore requires further emphasis in order to become more effective, mainly through its structural incorporation into the formal curricula of schools and universities and through enhancing governmental funding for ESD policy (Heideveld et al., 2008). Furthermore, several educational projects around ESD have been developed by NGOs and supported by governmental bodies, seeking to enhance the learning of Dutch youth on sustainability and climate change issues. There are numerous examples of youth-targeted projects as well as youth-led initiatives which demonstrate current circumstances of Dutch youth's roles and influence in fighting the climate crisis at the national and international stage. Table 4 below presents different examples of climate change and sustainability-themed youth programmes and initiatives in the Netherlands.

<p style="text-align: center;"><b>Morgen</b></p>	<p>Morgen is a student-led network organization aiming to engage students in sustainable development initiatives and practices.</p> <p>Morgen has executed many student initiatives and collaborated with partner organizations. Examples include ‘9-9-9’ (activities for the National Sustainability Day), the ‘Cookbook for the Sustainable University’ (examples of worldwide campus sustainability initiatives), and an online ‘Hyves’ profile.</p>
<p style="text-align: center;"><b>Young Friends of the Earth Netherlands (JMA)</b></p>	<p>Youth organization of Milieudefensie (Friends of the Earth Netherlands), but has its own board, policies and plans. Founded in 1999.</p> <p>Run for and by youth between 12 and 28 years old, who take decisions regarding actions, activities, and programmes.</p> <p>Aim to raise awareness among Dutch youth to their influence and power regarding political, economic, and environmental themes. Several activities, projects, and campaigns, centered around three</p>

<sup>111</sup> Main knowledge center of Corporate Social Responsibility (CSR) in The Netherlands

	main themes; Food, Energy, and International justice
<b>National Youth Council (NJR)</b>	Dutch National Youth Council (peer-led umbrella organization for all Dutch youth organizations)  Aim is to promote youth participation (aged 12-30 years) in their local community or at international level  NJR gives governmental bodies and other organizations advice on youth policy.
<b>GreenPeace NL</b>	Key focus areas include clean energy, strong forests, toxic world, sustainable agriculture, and living oceans
<b>Enviu</b>	Sustainability and business organization. Initiates projects aimed at creating a positive social and environmental impact.  Links higher education students with businesses and public and private organizations, and provides opportunities for internships and placements
<b>The Next Generation</b>	Platform on theme of sustainability, targeting students, educational institutions, employers, private businesses.  Provides a minor on Sustainable Leadership & Entrepreneurship, aiming to enhance leadership skills among future graduates as well as current workers.
<b>Students4Sustainability</b>	The Foundation S4S, is a student organization that invests in sustainable projects and technology in developing countries. Collaborates with academics, experts, and students.
<b>Youth League for Nature and Environment Study (JNM)</b>	National association for young people (aged 12 – 25) who are active in nature.  Involves study nature and exploration through round camps and excursions to beautiful natural areas in the Netherlands.

*Table 4: Examples of Dutch Youth Organizations and Initiatives Working on Climate Change and Sustainability Issues*

### 5.3 SOUTH AFRICA CONTEXT

Within the South African context, understanding the contemporary engagement of its youth with climate change and well-being needs to take into account the ways in which colonialism, capitalism, and apartheid have influenced its social structure, cultural and economic relations, and the socio-political situation. South Africa's long history of colonialism and apartheid<sup>112</sup> has generated socio-political unrest, wide social gaps, educational and civic inequalities, and variations in living standards across the population (PCAS, 2006). The government has applied the Black Economic Empowerment<sup>113</sup>, a rights-based approach to development, and social and educational reforms to address long standing disparities. Nevertheless, and despite significant advances in the socio-political, governance, and economic aspects, South Africa continues to struggle to overcome the social, economic, and political legacy of the apartheid system. Presently, poverty is still widespread in South Africa, with more than half of the population living in poverty, out of which over 70% are living in rural areas and informal settlements (Madzwamuse, 2010). The overall economic growth that the country has witnessed in the past few years has not been met with adequate job creation. More than a quarter of the population still lives in unemployment, out of which 2.8 million are youth without adequate jobs, training, or education (Puukka et al., 2012). The majority of the unemployed is constituted of the black communities who have been historically disadvantaged. According to the South African Institute of Race Relations, 51% of youth between 15 and 24 are unemployed, with considerable variations across races – 57% young Africans (black South Africans), 23% young Indians (Indian South Africans), and 21% young whites (white South Africans) (UNDESA, 2011). The low illiteracy rates and lack of skills is largely the result of the disparities in the educational system between different population groups as well as low enrolments and high drop-out rates (OECD, 2011). *"The persistent racial stratification and differences in social, economic and health outcomes between population groups are partly due to the*

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<sup>112</sup> Under the apartheid system, racial segregation was enforced through legislation, systematically dispossessing the majority of non-whites of their land and denying them access to resources and basic services such as education and medical care. Disadvantaged groups mainly included black Africans, Coloureds, and Indians.

<sup>113</sup> BEE is a programme launched by the South African government to rectify apartheid inequalities. It gives previously disadvantaged communities economic privileges that were not available to them in the past such as employment equity, skills development, ownership, socioeconomic development.

*apartheid education system, which served the black and coloured communities poorly*" (Puukka et al., 2012; p.14). For example, more than 62% of the rural households in the Kwazulu-Natal province are living below the poverty line (Madzwamuse, 2010). Gender inequality is also widespread across some communities, as women tend to be more vulnerable to inequalities of poverty through limited access to environmental and social resources, low literacy levels, and lack of employment. Consequently, the country's major concerns at a national level entail poverty and job creation, criminality, and the impacts of HIV/AIDS (Babugura, 2010).

The country also suffers from major disparities between urban and rural areas. For instance, the urban areas, in which 50% of the population resides, have developed modern infrastructure and established strong energy, transport, legal, and financial systems. Yet the suburbs and rural areas generally have outdated infrastructure and less public services, and the basic provisions for physical and social infrastructure in slum areas is almost absent (Pieterse, 2009; Stuckler et al., 2011). These stressors further debilitate the country's ability to prepare for and respond to external shocks as climate change (APF, 2007; Babugura, 2010). Hence, South Africa's vulnerability to climate change is exacerbated by a multiplicity of complex challenges that further debilitate the country's pathway towards stable and sustainable development.

### **5.3.1 Environmental Context: Climate Change Vulnerability & Response Strategies**

South Africa's rich diversity of natural resources, wide range of landscape and socio-economic systems, and multiple ethnicities and cultures provide a multitude of contexts at various levels of risk to climate change. The South African population is estimated to be at around 50,000 million people for 2012 (CIA, 2013), of diverse origins, cultures, and religions. The country's population is largely concentrated in the eastern and north-eastern parts, with the most populous provinces being Gauteng and Kwazulu-Natal, each with almost 20% of the total population (Babugura, 2010). The least densely populated province is the Northern Cape with only 2.3% of the total. In terms of contribution to climate change, the main emitters of CO<sub>2</sub> in South

Africa are fossil fuel burning (liquid fuels and especially coal in the thermal power stations), deforestation<sup>114</sup>, and land degradation (Chishakwe, 2010).

South Africa is largely dependent on its natural resource base, and its main vulnerabilities to climate change encompass reduced agricultural production, food insecurity, increased incidences of floods and drought, prevalence of diseases, and an increased risk of conflict over scarce land and water resources (APF, 2007). Therefore, climate change threatens the country's sustainable development and societal welfare, and the achievement of the Millennium Development Goals.

National and international studies and reports have warned that climate change could have numerous negative consequences at various environmental and socio-economic levels in South Africa. In general, scientific projections suggest a rise in temperatures by 1-3°C by 2100; reduction in rainfall by 5-10% over next the 50 years; and increase in storm activity and severity over the next few decades (Theron, & Rossouw, 2008; Madzwamuse, 2010). Yet these risks would vary considerably across the wide and diverse South African landscape. For instance, more severe droughts are expected for the south western parts of the country, resulting in large-scale drying in the winter season. Yet the northern and eastern parts are expected to witness increases in precipitation during summer periods as short and severe lapses which increase the risk of flooding.

The main long-term impacts entail changing rainfall patterns affecting agriculture and reducing food security; worsening water security; decreasing fish resources in large lakes due to rising temperature; shifting vector-borne diseases; rising sea level affecting low-lying coastal areas with large populations; and rising water stress (Midgley et al., 2007; National Climate Change Response Policy, 2009). As a semi-arid<sup>115</sup> country lying in a drought belt with often unreliable and unpredictable rainfall, South Africa's economic sector is particularly vulnerable to climate change because of its overdependence on rain-fed agriculture, compounded by factors such as widespread poverty and weak capacity. Changes in precipitation patterns could result increase the prevalence of droughts throughout the country, and would have negative effects on agricultural production and food security, would worsen water

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<sup>114</sup> Deforestation is 2<sup>nd</sup> largest emitter globally of carbon emissions, after consumption of fossil fuels.

<sup>115</sup> 21% of South Africa receives less than 200mm of rain per year (DEAT, 2000).

security and economic growth prospects, shift vector-borne diseases (APF, 2007). Furthermore, the low institutional and technological capacity and lack of reliable climate data make it more difficult for the country to efficiently respond to the potential climate risks; whereas widespread poverty, illiteracy, and reliance of natural resources could challenge numerous communities in adapting to such changes and securing their livelihoods (Giordano et al., 2011).

Therefore, the most vulnerable sectors to climate change in South Africa encompass; a) agriculture and food security; b) water resources; c) biodiversity; and d) health (APF, 2007; Madzwamuse, 2010). The National Climate Change Response Strategy (NCCRS), established in 2004, provides an overall policy framework for climate change adaptation and mitigation at a national level, and several adaptation strategies to address the climate change vulnerabilities across different sectors (Chishakwe, 2009).

### ***Climate Change Response Strategies in South Africa***

Climate change adaptation in South Africa is part of the environmental and natural resources management at the national, regional, and local levels. According to Kotzé (2006, 2009), Madzwamuse (2010), and Pauw (2011), environmental governance, of which climate change adaptation is one aspect, is highly fragmented in South Africa. It often taking place in the context of specific pieces of legislation rather than as structured and systematic strategies. Recently, there have been calls for such efforts to be mainstreamed into national development priorities and frameworks to improve long-term efficiency. Also, reviews of the general environmental policy frameworks have indicated a lack of focussed consideration for the implications of climate change (e.g. DEAT & UNDP, 2009; Mukheibir & Sparks, 2006). For example, the National Water Resources Strategy (NWRS) has been criticized for its inadequacy for climate change adaptation since it does not adequately reflect the need for balancing water demand and availability and proposing long-term water management strategies (Mukheibir & Sparks, 2003, 2006). Madzwamuse (2010) indicates that; "*although adaptation is a critical issue for South Africa, mitigation seems to drive the agenda, mainly due to the vulnerability of the energy sector and the economic exposure that the country faces as a result of its dependence on coal*

for energy" (p.31). Table 5 below summarizes the key national actors on climate change adaptation and their main roles.

<p><b>National Climate Change Committee (NCC)</b></p>	<ul style="list-style-type: none"> <li>- Established in 1994; main body responsible for climate change policy development.</li> <li>- Advises the Department of Water and Environmental Affairs (DWEA) on its national responsibilities in relation to climate change under the UNFCCC and other international and regional agreements.</li> </ul>
<p><b>Government Committee on Climate Change (GCCC)</b></p>	<ul style="list-style-type: none"> <li>- Coordination across various government ministries and departments.</li> <li>- Facilitate the development of an adequate domestic climate change programme with appropriate institutional capacity.</li> </ul>
<p><b>Department of Water and Environmental Affairs (DWEA)</b></p>	<ul style="list-style-type: none"> <li>- Lead department for directing and coordinating the implementation of the national climate change response programme. Hosts both the NCCC and the GCCC.</li> <li>- Ensures the enforcement of South Africa's obligations from regional and international climate change agreements.</li> <li>- Generates reports and requirements under the UNFCCC.</li> <li>- Ensures the consideration of inter-sectoral linkages</li> </ul>
<p><b>Department of Science and Technology (DST)</b></p>	<ul style="list-style-type: none"> <li>- Hosts the Climate Change and Biodiversity Unit, part of the Socio-Economic Partnerships Programme.</li> <li>- Coordinates strategies in response to the science and technology needs of various climate change interventions in South Africa.</li> </ul>

*Table 5: Key National Actors in South Africa on Climate Change Adaptation*

### *Constraints to Climate Change Adaptation*

Various constraints limit the success of the climate adaptation strategies and legislative frameworks in South Africa. These constraints entail; a) existing structural and social burdens for delivering basic services, redistributing wealth and resources, and increasing job growth; b) the challenges for mobilization of financial and human resources and the lack of adequate education and capacity development in several local bodies of governance (DEAT, 2004, 2009); c) existing differences across regions and government sectors in terms of the institutional capacity for

implementing climate change adaptation strategies (APF, 2007; Reid & Vogel, 2006; SARVA, 2010) and d) power struggles between democratically elected structures and traditional decision-making groups, especially in rural communities, which can create conflicts in leadership and decision-making and undermine adaptive capacity (Adger et al., 2009; Kelly & Adger, 2000). Overall, these constraints hinder South Africa's progress towards sustainable development and societal growth.

Civil society and the private sector are also becoming increasingly involved in environmental management and public engagement in South Africa (Giordano, 2011), with various national, local and international NGOs<sup>116</sup> actively involved in the implementation of climate change adaptation initiatives. The activities carried out by these groups entail climate change research, community adaptation strategies, awareness raising, capacity building and advocacy, and lobbying (DEA, 2010). Public institutions conducting research on climate change include the National Research Foundation; National Disaster Management Centre; Agricultural Research Council; South African National Biodiversity Institute; Water Research Commission; Council for Scientific and Industrial Research; and Health's Malaria Control Programme (Chishakwe, 2010; MEMD, 2007). Several academic institutions<sup>117</sup> have also played a significant role in enhancing the knowledge on national and international climate and in public outreach, communication, and engagement on these issues.

At the international level, South Africa has been a signatory in both United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. It has developed a Greenhouse Gas Inventory, produced a first National Communication which was submitted to the UNFCCC, and actively participates in the Clean Development Mechanism (CDM) projects (DEAT, 2009). In addition,

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<sup>116</sup> Such as WWF, Wildlife and Environment Society of South Africa, IUCN, EarthLife Africa, Environmental Management Group, Resource Africa and the South African Climate Action Network. A summary profile of the different NGOs working on climate change in SA is provided by Madzwamuse, 2010.

<sup>117</sup> Academic research institutions include the University of Cape Town Climate Systems Analysis Group (CSAG), the University of the Witwatersrand School of Geography, Archaeology and Environmental Studies and the University of Kwazulu-Natal Institute of Natural Resources.

South Africa has often taken a representative or leadership role for the African continent in various international events and conferences on climate change and sustainability issues; often taking the position of ‘common but differentiated responsibilities’<sup>118</sup>, while highlighting issues of equity (DEAT, 2004, 2009). A more detailed discussion of the climate impacts and the overall implications of such contextual settings on South African youth is presented below.

### **5.3.2 South African Youth in A Changing Climate**

Climate change poses multiple risks to South Africa's rising economy, widening social gaps, and vulnerable natural resource base. The projected impacts of climate change on the various sectors within the country can have important consequences over the long-term, which today's young populations will have to face and manage for their future.

The projected climate damage to the agricultural sector (Conway, 2009; Desanker, 2002) can have important consequences in the future for national food security and the national economy (Mukheibir & Sparks, 2003). Decreases in agricultural yields and water shortages are mostly projected for the marginal areas which are inhabited by impoverished communities who are already vulnerable (Ashton et al., 2008; Turpie et al., 2002). The climate shocks and stresses could have severe societal implications, particularly on poor communities whose livelihoods and welfare depend on subsistence agriculture (Davies et al., 2008; Desanker, 2002). According to UNICEF (2011), youth constitute more than half of the population in areas that are at most risk for future food insecurity and water scarcity in South Africa. These challenges therefore may pose barriers to their economic development as well as their welfare and long-term quality of life. Madzwamuse (2010) also argues that the dual economy in South Africa might cause second-economy related issues to be overlooked in adaptation responses, especially in the absence of formally strong representation and empowerment of poor communities at the level of policymaking.

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<sup>118</sup> The principles of common but differentiated responsibilities for countries signatory to the framework convention takes into account that developing countries have development needs and a lower level of responsibilities for the observed increase in greenhouse gas emissions.

Thus, the climate impacts could have socio-economic implications to South Africa's youth whose livelihoods and welfare depends on primary resources.

In addition, climate change has critical health implications in South Africa, mainly stemming from extreme weather events, changes in the patterns of infectious diseases, increased food insecurity and water scarcity, and ensuing population displacement (Mash, 2009; Turpie et al., 2002). These health consequences might be exacerbated by existing disparities in health status<sup>119</sup> and coping capacity across different regions or communities. For example, over 30% of the economically active age group of 15-49 are living with HIV/AIDS<sup>120</sup>, which not only increases their vulnerability to disease but also reduces their capacity to work and to produce food (UNICEF, 2011). The rising disparities in health vulnerability would increase the gap between the rich and the poor in the country and pose heavier burdens on national resources. It is also important to consider the gender differences in climate vulnerability, as women in South Africa form the majority of the rural population and often have limited capacities to adapt due to social inequalities including unequal access to resources and information, low education level, and lack of employment (Mwebaza & Kotze, 2009). This poses questions regarding the extent to which current young females in South Africa are empowered to face the rising climate challenges and the adverse impacts that such vulnerable positioning might have on their health, quality of life, and sense of well-being. "*Climate change will thus be one of the most important and urgent health issues in South Africa over the next ten years with major implications for the health sector*" (Madzwamuse, 2010; viii).

Further complexities facing South African youth entail the absence of long-term policies and integrated national adaptation response systems, and the lack of sufficient governmental knowledge of the distinct vulnerabilities across communities (Turpie et al., 2002). With the widening social inequalities and chronic poverty levels, such challenges can overwhelm economic and development planning

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<sup>119</sup> For example, according to the South African Institute of Race Relations, the life expectancy in 2009 was 71 years for a white South African and 48 years for a black South African.

<sup>120</sup> According to the 2011 UNAIDS Report, South Africa has over 5.5 million people living with HIV – the highest rate in the world.

structures at local government level. Adaptation responses need to be aligned with long-term policies that seek to address the underlying causes of poverty and vulnerability, such as the land reform process and a review of the impacts of the macro-economic policies on the poor (DEAT, 2009; Kotecha, 2010). SARVA (2010) also points to the increased pressure on youth through the dependence of the non-economically active population<sup>121</sup> on the economically active population<sup>122</sup>, mostly youth. The areas of highest dependency ratio are located in Easter Cape, KZN, and North-West and Limpopo provinces. Overall, such complexities will overburden South Africa's higher education youth in particular, who will need to drive more sustainability-oriented schemes whilst managing existing socio-economic and environmental difficulties (Koehn & Demment, 2010). Therefore, South African youth are facing complex challenges as well as opportunities for their future and need to be empowered to actively and meaningfully contribute towards a development pathway that enhances their welfare and quality of life whilst securing their livelihoods, health, and natural environment. Higher education institutions play a key role in preparing today's youth to lead towards their South African society's positive development.

#### *South Africa's Higher Education Youth*

The higher education system in South Africa underwent major reforms in 2004 through the merging of small universities into larger institutions, with a current total of 23 public universities. These are divided into three types; 11 traditional universities offer theoretically oriented university degrees; 6 universities of technology offer vocational oriented degrees; and 6 comprehensive universities offer both types of qualification (Puukka et al., 2012). The expansion of the higher education institutions has promoted a wider and more diverse student population<sup>123</sup> across different regional areas and socio-economic levels.

The overall level of higher education attainment remains low at 4.3% (OECD, 2011) and participation rates remain low at; *"16% in 2005, a predicted 17.5% for 2010 and*

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<sup>121</sup> 0 to 14 and over 65

<sup>122</sup> Between 15 and 30

<sup>123</sup> A rise in the number of HE students from 473, 000 in 1993 to 761,000 by 2007, with an increased percentage of African students from 49% to 63%

*a goal of 20% participation by 2015"* (Department of Education, 2001; p.16). Significant gaps in education also exist between different population groups. *"Owing to the apartheid education system, a vast majority of students currently entering university are from low socioeconomic backgrounds, are first generation students, and are members of a racial group at high risk of dropping out. As a result, a large majority of entering students present with two or more of the risk factors associated with university drop-out"* (Kuh et al., 2007; p.66). For example, during the period 2004-07, higher education participation was constituted by 54% white students and 43% Indians students, whereas Africans and Colored together constituted 12% of HE students. Africans today constitute about two-thirds of the total number of university students, yet are more likely to drop out<sup>124</sup> midway and not graduate (Puukka et al., 2012). The high drop-out rate (40% amongst first year students), and a low studies completion rate<sup>125</sup> (15%) (Strydom & Mentz, 2010), are often attributed to an underperforming school system as well as to socio-cultural and economic circumstances, such as poverty, unemployment, HIV/AIDS, and early family responsibilities. Such circumstances hinder the students' ability to complete their higher education and lower their prospects of developing necessary skills and attaining adequate employment.

Environment and sustainability education were placed in the national education and training agenda in South Africa through the 1995 White Paper on Education and Training, which emphasized the right to education for all citizens and the importance of sustainable resource use for current and future generations (Lotz-Sisitka & Olvitt, 2009). Environmental legislations and academic initiatives gradually developed to incorporate greater recognition of the value of and need for environmental education across different curricula and courses. The aim of such programmes was also *"to empower communities to act on environmental issues and to promote environmental ethics in a South African context"* (Odeke, 2009; p.60). The Environmental Education Curriculum Initiative (EECI) promoted a cross-curriculum, integrated, and action-oriented approach to environmental education (Lotz-Sisitka, 2006, 2009). Finally, Lotz-Sisitka (2009a) points out that: *"highly educated youth of South Africa*

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<sup>124</sup> 63% of all enrolled students in public universities are African, but make up only 57% of graduates.

<sup>125</sup> 30% drop out after the first year and another 20% drop-out after the second or third year.

have both a special advantage and an obligation. Their special advantage is that the past is still vividly present, and as members of a new privileged elite, they have an obligation to forge the vital link between the genius of the everyday and the resourcefulness and resilience of ordinary people" (p.47). It is therefore essential to examine the ways in which the country's higher education youth are empowered to meaningfully engage with the rising global and local challenges of climate change and the pressures and opportunities of a sustainability-focused pathway, all the while dealing with the remnant problems of their society's past. Arguably, it is important to also reflect on young South African's short and long-term well-being within such dynamic dimensions of their lives.

Table 6 below presents some examples of South African youth organizations and initiatives working on climate change and sustainability issues.

<p><b>African Youth Initiative on Climate Change (AYICC)</b></p>	<p>Biggest youth climate movement in Africa. AYICC was conceived in 2006 in Kenya during the 2nd international Conference of Youth before COP12. It aims to connect African youth to take action and make impact on issues of climate change at national and regional levels. AYICC has 42 country chapters, including South Africa.</p>
<p><b>BlueBuck Network</b></p>	<p>Youth-led environmental organization, set up to support and connect youth involved in environmental and sustainability initiatives in southern Africa. Encourages collaboration between individuals, organizations and projects. Provides a platform for sharing share ideas, knowledge, experience and resources.</p>
<p><b>TrashBack</b></p>	<p>TrashBack is a youth-initiated social enterprise that provides incentives for disadvantaged communities to manage their own waste through recycling. Participants bring in recyclable materials and are rewarded with vouchers for local community stores.</p>
<p><b>Generation Earth</b></p>	<p>"A green networking platform – with the youth, for the youth, by the youth". A youth-initiated and youth-focused environmental organization aiming to develop eco-conscious leaders for the future. Generation Earth assists school and university learners to set up green councils to facilitate the conduction of environmental projects in local communities.</p>
<p><b>South African Youth Climate Coalition (SAYCC)</b></p>	<p>Movement by and for youth, aiming to address climate change impacts and raise awareness on role of youth in creating a more sustainable future.</p>

<p style="text-align: center;"><b>South East African Climate Consortium – Student Forum (SEACCSF)</b></p>	<p>SEACC SF is a movement created and run by students. The network has nodes at different universities, including Rhodes University, University of Fort Hare, the Nelson Mandela Metropolitan University and Walter Sisulu University. It aims at empowering students across South East Africa to engage with issues of sustainability and climate change, to facilitate discussion and cooperation amongst various societies, NGOs and individual student researchers, and to develop and support local community projects on sustainability. The four pillars of SEACC SF are community engagement, operations, research and education.</p>
<p style="text-align: center;"><b>South African Climate Change Youth Ambassadors</b></p>	<p>Initiative developed by eThekweni (Durban) Environmental Planning and Climate Protection Department to support and sponsor three youth ambassadors for South Africa at the 7th Conference of Youth (COY7) before COP17. It aims to provide a platform for these youth to voice their concerns on climate change during the Conference, and to work all over Africa after the conference finishes in raising awareness about climate change issues and working with communities on local action initiatives.</p>

*Table 6: Examples of South African Youth Organizations and Initiatives Working on Climate Change and Sustainability Issues*

# **CHAPTER 6. CRITICAL INTERPRETIVISM PARADIGM**

## **6.1 INTRODUCTION**

The aim for depth of meaning and contextual understanding has guided this study to its critical interpretivist research approach. The study considers that achieving an enhanced understanding of young people's engagement with climate change and well-being is a constructed process, entailing the youth's personal reflections and experiences and their collective interpretations of such experiences within particular socio-cultural settings (Andrade, 2009; Guba & Lincoln, 1994). The study therefore aligns its conceptual and methodological rationale through applying a dynamic and interactive research approach that emphasizes subjective understandings, social interactions, contextual influences, and power relations in shaping young people's engagement with climate change and well-being.

First, the study recognizes the importance of young people's personal worldviews and understandings in shaping their beliefs, concerns, and behaviours in relation to climate change and their sense of well-being from its challenges, and in guiding their decisions and actions towards a more sustainable future (Wolf & Moser, 2011). It also recognizes that their engagement with these issues is partly shaped by their environmental, academic, socio-cultural, and political contexts (Arnold et al., 2009; Mason, 2002). Therefore, guided by interpretivism, the study engages the Dutch and South African participants in profound and reflective dialogues that emphasize their personal experiences and worldviews. It also ensures a comprehensive understanding of their engagement by contextualizing its different facets within the participants' local contexts (Merriam, 2009).

Second, the critical aspect of this research, derived from critical social theory, enables the exploration of underlying power relations within the youth's diverse

forms and pathways of engagement with climate change and well-being. Youth empowerment is a key issue to explore in this study, as it directly relates to the rights, responsibilities, and opportunities for today's youth who will be facing the climate challenges continuously throughout their lives (UNFCCC, 2009). Third, incorporating a critical element into this interpretivist approach links this study to the overall sustainability worldview, which emphasizes the meaningful participation of young people as key stakeholders in today's and tomorrow's world (Huckle, 2008; Tilbury & Wortman, 2004). This study applies the sustainability lens in order to engage the participants in an in-depth and meaningful research process. Important elements within this process entail the participants' personal reflection, critical and long-term thinking, and dialogue for the exploration of the multiple dimensions of such engagement (Weber & Morris, 2010). The study also recognizes that youth empowerment is interlinked with their quality of life and overall sense of well-being (Catalano et al., 2004). Achieving a better quality of life links the sustainability worldview to the concept of well-being (Chiu et al., 2010), and binds the main conceptual threads of this research.

The following Chapter constructs these different building blocks of the research methodology. Section 6.2 provides a brief historical depiction of the development of the interpretivist paradigm, followed by a clarification of the underlying philosophical principles; epistemological, ontological, and methodological- that have guided this research. Section 6.3 contextualizes the study within the key concepts of the undertaken critical interpretivist approach, including multiple subjective realities, social interactions, contextual influences, and meaningful participation and power relations. Section 6.4 discusses the main critiques of interpretivism and the strategies used in this study to respond to these critiques. Finally, Section 6.5 summarizes the main conceptual and methodological features of this study.

## **6.2 DEVELOPMENT AND MAIN PRINCIPLES OF INTERPRETIVISM**

The interpretivist paradigm mainly emerged as a critique to positivism in the social sciences. Interpretivism has its roots in the works of Immanuel Kant and Wilhelm Dilthey, who questioned the use of scientific methods to study human phenomena

(Madison, 1988). They argued that the centrality of positivist and empirical research on concepts such as objectivity, unequivocal truths, and scientific verification posed limitations to the study of the social world and the understanding of human behaviours, contexts, and interactions (Ritchie & Lewis, 2003). Interpretivists argued that understanding the social world required a view "*within the realm of individual consciousness and subjectivity, within the frame of reference of the participant as opposed to the observer of action*" (Burrell & Morgan, 1979; p.28).

The development of the interpretivist paradigm gave rise to several different theoretical perspectives, assumptions, and worldviews (Denzin & Lincoln, 2005). The most important include phenomenology (Husserl 1929, Schutz 1967), ethnomethodology (Garfinkel 1967), and hermeneutics (Dilthey 1976, Gadamer 1975). A central principle that is common amongst the various schools of thought of interpretivism, is the understanding of the social world through subjective experiences. Interpretivism assumes that human action is inherently meaningful, and that understanding actions requires an understanding of the meanings that comprise these actions (Denzin & Lincoln, 2005). Hence, these different schools of thought within the interpretivist paradigm share common grounds; a) human action is meaningful; b) importance of the lifeworld and the context; and c) emphasis on human subjectivity. The main difference between these schools lies in their theoretical perspectives concerning the process of interpretation or understanding of the social world (Crotty, 1998). For example, while phenomenology requires that researchers 'bracket' their presuppositions prior to exploring and reconstructing the meanings and experiences of participants through intersubjective communications; ethnomethodology aims to understand 'how' individuals themselves construct their social reality, rather than this reality being reconstructed by the researcher, who does not involve his personal biases and presuppositions into such interactions (Crotty, 1998; Denzin & Lincoln, 2005).

### *Key Principles of Interpretivism*

At the core of interpretivism is the emphasis on lived experiences, social construction of meaning, and contextual settings (Marshall & Rossman, 2006). The theoretical perspective in interpretivism is that reality is socially constructed and

fluid; hence knowledge is always negotiated within cultures, social settings, and relationships with other people (Cole et al., 2011). It rejects the positivist views of ultimate truths and objectivity apart from a human knower in a particular setting (Creswell, 2007; Denzin & Lincoln, 2005). It rather assumes a reality that is interpreted inter-subjectively through the meanings and understandings people acquire from their experiences in a social world. The inter-subjectivity of meaning-making, through which people constitute their reality, is constructed as people apply their knowledge to make sense of their experiences in an interactive setting. Such knowledge is composed of their beliefs, attitudes, values, and other constructs that are socially developed, which they apply to their experiences. Thus, meanings and interpretations are constantly being socially and contextually constructed and reconstructed (Creswell, 2007; Rowlands, 2005). The world of lived experiences, or lifeworld, forms the basis of human understanding, embedded in a socio-historical context and setting in which language and meaning occur (Angen, 2000). Interpretivism thus emphasizes understanding people's lived experiences within their wider socio-cultural and institutional context (Ritchie & Lewis, 2003). For example, Foucault's 'discourse analysis' highlights the importance of historical and cultural systems or 'discourses' of power and knowledge in shaping people and their understandings and experiences of their social worlds (Silverman, 2005, 2010). Also, Dilthey's notion of interpretive understanding through hermeneutics<sup>126</sup> argues towards social research which considers the social, cultural, and historical aspects of people's lifeworlds and explores the context in which particular actions take place (Denzin & Lincoln, 2011; Willis, 2007).

Methodologically, interpretivism emphasizes inter-subjective and contextual understanding and rejects absolute truths or realities in qualitative research. Amongst the basic principles of interpretivist research is that the main sources for data generation are people's understandings, interpretations, experiences, and interactions (Mason, 2002). Interpretivist research seeks to understand the ways in which people experience the world, their social interactions, and the settings in which these experiences and interactions occur (Blaikie, 2000). It considers that such

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<sup>126</sup> The hermeneutics circle seeks to enhance understanding of the whole issue or phenomenon under investigation, and ways in which each part is connected to the whole. Such understanding is achieved within the cultural, historical, and literary context in which these phenomena or artefacts are developed.

understandings can be achieved in dialogic settings, as the research participants, along with the researcher, interact in discussions and construct these meanings together (Smith, 2000). Accordingly, the interpretivist researcher is considered as a co-creator of meaning through the interactions taking place with the participants in the research. Thus, the interpretivist researcher's own subjectivities<sup>127</sup>, which may influence the research process, need to be recognized and managed.

The Section below clarifies the applicability of a critical interpretivist research approach to this study, and highlights the methodological gaps in current literature in relation to the research themes.

### **6.3 APPLICABILITY OF CRITICAL INTERPRETIVISM TO THIS STUDY**

The main aims of this study are two-fold. First, the study aims to explore the ways in which youth, particularly higher education youth in two country settings, South Africa and Netherlands, are engaging with climate change and well-being in their personal, academic, and socio-political lives. Second, it aims to explore the ways in which contextual factors, including the environmental, socio-cultural, academic, and political setting of each country, have influenced such engagement processes. Key elements that the study seeks to investigate entail; a) the participants' understandings, concerns, future visions, forms and pathways of participation, and sense of empowerment in relation to climate change and sustainability issues; b) the potential implications on their short and long-term well-being; and c) the contextual factors and power relations influencing such forms and processes of engagement.

Theoretically, the study considers that young people's personal experiences, social interactions, contextual dynamics, and power relations, influence their interpretations and actions regarding external issues such as climate change (Angen, 2000; Blaikie, 2002). It recognizes that understanding in-depth the multiple dimensions of the Dutch and South African youth's engagement requires exploring the youth's personal and social aspects such as their perceptions, concerns, lived experiences, and

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<sup>127</sup> The role of the researcher is further discussed in Section 7.7

relationships with others. It therefore aims to explore the participants' inter-subjective understandings and experiences with climate change and well-being from their own perspectives and interactions and within their own contextual settings. Furthermore, the study recognizes that achieving a critical and comprehensive understanding of the youth's engagement requires the exploration of each country's contextual setting and existing power dynamics, which shape the forms and depths of engagement of these youth, such as their understandings of climate change, extent of meaningful participation, and sense of empowerment for real influence in their communities (Marshall & Rossman, 2006; White, 2008).

Methodologically, this perspective is aligned with the undertaken critical interpretivist research approach. First, this approach assumes the social construction of meaning and the contextual influence on people's interpretations, values, and actions (Crotty, 1998). It considers that knowledge is relative to the knower and that new meanings are always being constructed based on people's experiences and relationships with others; hence resulting in multiple interpretations and realities (Denzin & Lincoln, 2003). It aims at understanding these meanings and the contextual factors influencing the interpretations reached by different individuals. Interpretivist research therefore recognizes the importance of social interactions and dialogic settings for generating profound data with participants. In the context of this study, interpretivism meets with the perspective held regarding the multiple experiences and interpretations that form the social reality in which young people in different settings act. It guides the study towards generating profound and meaningful knowledge on the various aspects of such engagement through collective meaning-making processes in a group setting (Blaikie, 2000). Therefore, applying an interpretivist perspective in this study would enhance a more in-depth understanding of the dynamics and dimensions of Dutch and South African youth's engagement by exploring the experiential and contextual factors shaping such engagement in two different contextual settings.

Second, the study applies a sustainability lens and incorporates a critical perspective, which enable the consideration of aspects related to youth's meaningful engagement within their local communities, and to the contextual factors shaping their self-efficacy and political agency (Catalano et al., 2004; Jennings et al., 2006). The

importance of this critical perspective, and its applicability to this study, are further clarified below.

#### *Incorporating a Critical Element to this Interpretivist Study*

The study incorporates a critical element, adopted from critical social theory, into this interpretivist research approach. In brief, critical social theory (CST) seeks to explore and critique social and political practices, injustices, and conditions of social exploitation or oppression. It seeks to provide opportunities for human and social emancipation; "*critical theory is concerned with extending a human's consciousness of himself or herself as a social being in light of the way dominant power operates to manage knowledge*" (Kincheloe, 2005; p.10). CST therefore aims to challenge existing power relations, seeking social and environmental justice through meaningfully involving people in the process of change as well as exploring their own false consciousness (Leonardo, 2004; Mula, 2011). In the context of this study, it is important to first note that its aims and scope do not target an actively critical and critiquing stance which is central to CST and which aims for participant empowerment and social transformation. The study does not claim to bring about direct social or political change. It rather seeks to produce a critical understanding of the relationship between institutional structures and contextual power relations, and youth participation and empowerment, and thus help create better engagement experiences for these youth.

The critical edge in this research is aligned with the sustainability worldview. Several aspects within this approach resonate with key concepts of sustainability, such as stakeholder empowerment, social and ecological justice, and enhanced quality of life (Tilbury, 2011a). The study recognizes social, pedagogical, economic, and political institutions as cultural and political sites which shape societal values, relationships, and practices (Giroux, 2003; Zimmerman, 2000). In order for youth to drive society to more secure and sustainable pathways, they need to be empowered intellectually and actively for critically reflecting on existing structures and processes which are continuing to reproduce unsustainable practices, and develop pathways that radically change the status quo. The study thus considers that engaging youth in effective socio-political action for change requires that they become critically aware and reflective of such institutional structures, values, and

processes that they seek to alter, and of their roles within such institutions and practices (Freire, 1970; Jennings et al., 2006). Therefore, adopting a critical perspective serves two main goals. First, it seeks to encourage diverse participants towards critical reflection and fore-sighted thinking, both concepts strongly advocated within the sustainability lens (Tilbury & Wortman, 2004; UNECE, 2009). By doing so, it aims to gain deeper insight into their experiential and contextual understandings with climate change and sustainability issues, and the implications on their well-being. Second, employing a critical perspective enhances the understanding of the dynamics of power relations and pathways of participation that the Dutch and South African participants are experiencing in their communities and academic institutions. It enables the critical exploration of the ways in which the local socio-political culture and higher education system in each country, promote or impede the youth's engagement with critical issues that concern them (Jennings et al., 2006; Leonardo, 2004). For instance, the study seeks to illuminate important structural or institutional problems through exploring the underlying power relations regarding the engagement of youth from different socio-demographic, cultural, and academic backgrounds in each country. The diversity of setting and participation supports a stronger understanding of such critical elements across a wide range of socio-cultural and political systems (Jennings et al., 2006). *"When critical constructivists produce knowledge, they are not attempting to reduce variables but to maximize them. Such maximization produces a thicker, more detailed, more complex understanding of the social, political, economic, cultural, psychological, and pedagogical world"* (Kincheloe, 2005; p.3).

Methodologically, the study employs tools that enable the documentation, understanding, and critique of these places of social interaction. The critical examination of the underlying relationships between the research participants' processes of engagement, and the relevant social and political systems and cultural institutions, enhances the understanding of the ways in which these systems function and the depth of their influence on the youth's engagement (Giroux, 2003). It enables the researcher to interpret and critically assess such institutional structures and objectives and youth agency. Specifically, this study would investigate the ways in which current visions and practices of educational, cultural, and political institutions are hindering or promoting meaningful youth engagement and participation. For

instance, the contextual exploration is framed within a critical element that seeks to investigate the ways in which the academic teaching and learning environment is influencing youth understandings of climate change and visions of sustainability, what social interaction processes influence young people's identities, sense of well-being, and worldviews, how the community culture reflects dominant social and environmental values or ideologies, and how organizational and political processes correspond to youth's priorities and influence their efficacy and agency for environmental decision-making and action.

The importance of enhancing such knowledge is that youth have a righteous and meaningful role in contributing to the responses of the long-term climate challenges and to the pathways for sustainability. Subsequently, a more sustainable future secures their long-term development and quality of life, which ultimately enhances their sense of well-being (Haines, 2008; Scott, 2007). Gaining insight into these profound dimensions of youth engagement can guide future policy and practice in this field.

#### *Methodological Gaps Identified in the Literature*

The decision to employ the critical interpretivist approach in this study was further supported through the review of relevant literature. During the early phases of this study, reviewing the literature highlighted the lack of in-depth studies on youth engagement with climate change and well-being in particular country contexts. Most of the qualitative studies that were found to address themes of youth, climate change and sustainability have explored particular aspects of the youth's engagement which do not provide a holistic and contextual understanding of their personal and social experiences. These studies rather tend to investigate singular or specific dimensions of youth engagement such as their awareness, attitudes and behaviours (e.g. Bezbatchenko, 2011; Wolf & Moser, 2011), vulnerability and impact on lifestyles (e.g. Perezniето et al., 2011; UNFPA, 2009), or participation opportunities (e.g. Johnson et al., 2009; UNFCCC, 2009). Other studies have taken a quantitative angle which seeks to generalize data and identify trends, yet the generated figures often do not enhance the understanding of the complex dynamics shaping the youth's engagement and its various levels, forms, and pathways in different countries. For example, Duan & Fortner (2010) examined US and China university students' risk

perceptions concerning environmental issues including climate change, and their preferences for educational strategies. The research findings indicated the level of concern of various students to environmental risks, particularly climate change, and highlighted differences in risk perceptions and educational preferences between the 2 examined contexts. However, the experiential aspects and contextual differences beyond these risk perceptions were not addressed. The researchers themselves indicated the need for research that looks more specifically into the personal experiences of these youth and the way they relate to these environmental threats in their everyday lives and socio-cultural context. Similar insights by other studies, such as Feldman et al. (2010); van Heeswijk (2009); and UNICEF (2011) further highlight the need for in-depth research into the underlying personally and contextually relevant aspects of youth engagement with climate change. Quantitative data fail to incorporate the larger picture, often reducing meanings, feelings, and experiences to mere codes and numbers that impede a comprehensive understanding of the issues explored. Policymakers and practitioners cannot always derive meaning from numbers. The design of policy instruments and practical engagement strategies that can meaningfully engage young people with climate change relies on information that is rich, detailed, and contextual (Bourn & Brown, 2011; Marshall & Rossman, 2006).

Furthermore, the study's focus on higher education youth and its exploration of the academic influences on their engagement, contributes to needed research in this area of climate change (Filho, 2010; Rappaport & Cleighton, 2007). For instance, with regards to climate change initiatives on campus, Helferty and Clarke (2009) indicate that the active and leadership roles of students have been insufficiently explored; *"students have played important roles, yet the literature does not generally consider the features that are particular to youth engagement, and in particular student leadership"* (p.288). Similarly, in a recent review of climate change education at universities around the globe, Filho (2010) attests to this literature gap; *"there is a shortage of empirical studies which aim to understand how climate change is seen and perceived among university students"* (p.5).

The critical interpretivist approach undertaken in this study would enable a more detailed and contextualized exploration of the ways in which university students in

two particular countries, within a European and African context, are engaging with climate change in their academic institutions. It would also enhance the understanding of their depth of learning and competencies for managing the long-term challenges over their future lives and careers. *"Because people are often unable to discern the ways their environments shape their perception – i.e. construct their consciousness – the development of modes of analysis that expose this complex process becomes very important in our critical constructivist effort. This is where the term 'critical' merges with constructivism"* (Kincheloe, 2005; p.10)

Finally, the literature review for this study also revealed gaps in the knowledge of the implications of climate change on young people's well-being. Until recently, well-being has been largely under-researched in the fields of climate change and public health, particularly in relation to youth (Strazdins & Skeat, 2011). The study finds a general trend in current literature towards identifying the links between climate change impacts and the geographic and temporal projections of specific diseases that might become threatening (McMichael, 2009; Gage et al., 2008), or between climate change and specific livelihood vulnerabilities (McMichael, 2009; McMichael & Lindgren, 2011; St. Louis et al., 2008). Other studies within this field tend to focus on specific mental health or psychosocial impacts, as for instance Fritze et al. (2008)<sup>128</sup> and Sly et al. (2008)<sup>129</sup>; or on the general impact of environmental conditions on people's quality of life (Kasser, 2009; Marks, 2006). Yet the complex interlinks between climate change and personal and social well-being within a particular setting remained understudied, particularly amongst young people.

This study considers that exploring the personal and subjective facets of young people's engagement with climate change, and understanding the ways in which this overall engagement is linked to their sense of well-being, requires that researchers engage in an open and dynamic dialogue with these youth. A dialogic interaction

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<sup>128</sup> Their study indicated important mental health implications from exposure to extreme weather events, effects of socio-economic or environmental disruptions to livelihoods, and anxiety over the future

<sup>129</sup> Their study revealed a greater likelihood for children and youth to be adversely affected cognitively and mentally as well as emotionally by climate-induced environmental disasters due to their longer period of exposure to these hazards throughout their lifetimes.

would provide young people with a forum to express their own perspectives and concerns, to recount relevant incidents and share personal experiences, and to discuss future possibilities and action plans within their local communities. Therefore, the significance of this critical interpretivist research is that it is situated within the participants' personal and interactive accounts, providing an in-depth insight (Ritchie & Lewis, 2003) into their subjectively meaningful experiences with climate change and well-being. It is also situated within a particular context and culture, providing a comprehensive understanding of the participants' engagement within their own 'social world'. This would enhance the understanding of the youth's engagement with climate change and well-being and enable an informed interpretation and analysis of the research themes. It would also guide towards important recommendations relevant to the participants' accounts and to the particular setting, and guide future research and practice into the personal and contextual dynamics within these research themes.

Section 6.4 clarifies the key theoretical perspectives and concepts within this critical interpretivist study.

## **6.4 THEORETICAL PERSPECTIVES AND KEY CONCEPTS WITHIN THIS STUDY**

This study has sought to structure a coherent and consistent research process in which the theoretical and methodological guiding principles would be adequately aligned (Mason, 2002). In the sections below, the philosophical and methodological perspectives and key concepts upon which this research is based are discussed in-depth.

### **6.4.1 Basic Theoretical Perspectives**

The philosophical or theoretical perspectives in social research embody the ways in which the researcher understands 'what is' (ontology) and 'what it means to know' (epistemology), in regards to the research themes to be explored as well as to the overall worldview of the researcher (Crotty, 1998). Research paradigms and their underlying principles inherently reflect the researcher's stance, or the various

perspectives and insights through which the researcher decides on the framing of data collection and analysis (Creswell, 2007; Merriam, 2009). Theoretical frameworks influence "*how and what we see, and the interpretations in the writing that arise from that seeing*" (Ely, 1997; p.32). In this study, identifying the theoretical framework demonstrates the alignment of the philosophical perspectives with the adequate research methods and tools for data collection, analysis, and presentation (Merriam, 2009; O'Donoghue, 2007). It also helps examine alternative perspectives or interpretations of the data, thereby enhancing the researcher's confidence over the choice of strategies and methods, and in the research findings (Denzin & Lincoln, 2005).

The segments below discuss the ways in which these ontological, epistemological, and methodological perspectives have guided the development of the study. This is followed by a detailed depiction of the key theoretical concepts in the particular context of this research and the related conceptual framework.

### **Ontological Perspective**

Ontology in social sciences is concerned with the nature of social reality and how it can be studied. The researcher's ontological assumptions, or views of reality, form the cornerstone to all other assumptions and philosophical positions (Burrell & Morgan, 1979; Ritchie & Lewis, 2003).

Guided by critical interpretivism, this study assumes a relativist ontology. It considers the engagement of the research participants with climate change and well-being as relative and dependent on their experiences, worldviews, and local context (Creswell, 2007; Denzin & Lincoln, 2003). It also recognizes that the values and meanings that the participants place on their experiences influence their behaviours. The study therefore places emphasis on exploring the personal meanings and subjective experiences of a diversity of research participants with climate change and well-being in their local contexts. As explained in the forthcoming section, insight into these multiple socially-constructed realities can be developed through dialogue and social interactions, which help define and identify their particular reality (Marton, 2000; Willis, 2007).

Furthermore, this ontological position guides the decision in this study to critically explore youth engagement in various country contexts. The study emphasizes the subjective, interactive, and contextual understandings, experiences, and overall engagement of the participants in two particular settings, the Netherlands and South Africa. The participants' inter-subjective perceptions of their surrounding environment are also assumed to influence their behaviours and their own constructed realities (Ritchie & Lewis, 2003; Willis, 2007). This implies that different contextual settings, institutional systems, and power relations in a community or country would yield different forms and frameworks of engagement of young people. Such diversity would in turn yield various visions for a sustainable future and desired pathways and opportunities for social change and improved quality of life.

The role of the researcher is also important within the held ontological position. As stated in the previous section, this critical interpretivist study is value-laden, implying that the researcher's interests, values, and skills may have influenced the research decisions and processes (Denzin & Lincoln, 2005). Consequently, the researcher needs to be aware and to articulate her own assumptions and interpretations that are made throughout the research process (Merriam, 2009).

### **Epistemological Perspective**

Epistemology is concerned with the study of the nature of knowledge, through clarifying the researcher's approach about knowledge creation and the methodology for generating the findings. Epistemology poses questions such as 'what is knowledge?', 'how is knowledge acquired?', 'what constitutes and validates knowledge?', and 'what is the relationship between knowing and being (epistemology and ontology)' (Ritchie & Lewis, 2003). "*A researcher's epistemology is literally (their) theory of knowledge, which serves to decide how social phenomena will be studied*" (Groenewald, 2004; p.7).

This study holds a social constructivist epistemology, which is basically concerned with the construction of knowledge and meaning through social interactions. Constructivism suggests that knowledge and experience is actively shaped by social processes, and that knowledge and social actions are interlinked (Young & Collin,

2004). Through these social interactions, people create their own meanings of situations and settings. As described by Crotty (1998; p.42); constructivism *"is the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context...meaning is not discovered by constructed"*. The constructivist epistemological position seeks the exploration of the experiences and understandings of the research participants through collective processes of meaning-making in a particular setting (Guba & Lincoln, 1994).

The study recognizes the socially constructed and contextually shaped nature of the participants' experiences. It considers that the research findings can be generated collectively and contextually as the participants reflect on and interact with each other's perspectives, ideas, and experiences in a particular context (Young & Collin, 2004). The emphasis placed on participant subjectivity and interaction also links back to the relativistic ontological stance assumed in this research. The findings on the participants' engagement are generated through the interactive data collection sessions, including focus groups and interviews, and are partly shaped by the participants' personal and social experiences and settings. The findings are therefore partly constructed rather than completely discovered (Guba & Lincoln, 2004).

Also, the critical constructivist approach gives the researcher greater scope for investigating questions related to 'why' particular dimensions of the youth's empowerment take place and 'how' they relate to their sense of agency, political efficacy, and overall engagement (Joselowsky, 2007; Kincheloe, 2005). The study's reflective and interactive spaces enable participants to discuss together their feelings of vulnerability and power in their own communities, the social, academic, and political support or lack thereof, and the opportunities and pathways they are provided for meaningful participation. Such dimensions of empowerment and engagement are largely contextually-based (Jennings et al., 2006). This requires insight into the socio-political and cultural contexts in which these forms of engagement take place (Ritchie & Lewis, 2003). Thus, the study also emphasizes contextual understandings in order to achieve a holistic interpretation of the participants' engagement with climate change and well-being.

It is important to note that the study does not take a radical constructivist approach, which assumes all understandings and experiences to be entirely constructed, and claims no objective, independent world outside the individual's experience of it (Denzin & Lincoln, 2003). Rather, the study leans towards a more moderate constructivist approach. It acknowledges the existence of an external reality<sup>130</sup> (climate change), yet recognizes that people's understandings and interpretations of this reality are shaped by their personal experiences, social interactions, and individual and collective agency in a particular setting (Featherstone, 2008; Gomm, 2004). In other words, the study considers that the knowledge generated concerning the participants' engagement is influenced by their social and contextual interactions, yet is not only the result of such dialogic settings. This implies that the researcher must address the following important issues when conducting and writing this study;

- The socially constructed meanings that take place in the context of particular discussion sessions (focus groups and interviews). The study recognizes the particular dynamics of each discussion and that the data generated cannot be replicated, but considers such data to be meaningful and important.
- The socially constructed meanings that existed prior to the discussions conducted in this study, and which have also influenced the meanings emerging in these discussions.
- The role of the interpretivist researcher in shaping the research process. Within critical constructivist epistemologies, the researcher is concerned with the co-construction or co-generation of the findings through dialogic interactions with the research participants and the critical analysis of contextual dynamics (Schwandt, 1998). Accordingly, it is important to recognize the researcher's biases and influences on the inquiry process. Researcher bias, and the importance of applying reflexivity, is discussed in detail in relation to the quality and validity of the study, in Section 7.7.

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<sup>130</sup> Factual elements to social reality apart from the participants' experiences and interpretations of such reality.

## **Methodological Perspective**

The methodological perspective is the researcher's tool-kit. It transitions the study from theoretical assumptions to practical strategies of research design and data collection and analysis. Along with the ontological and epistemological positions, these three dimensions of research form the basics of the research paradigm and the interconnected reasoning and practice (Ritchie & Lewis, 2003; Rowlands, 2005).

The methodological perspective in this study is aligned with both the research questions and the underlying philosophical framework. First, concerning the overall research design, the study recognizes its evolving nature and the importance of a dynamic and context-dependent process which is able to respond to particulars of the Dutch and South African settings (Creswell, 2007). The research design is therefore guided by the main theoretical perspectives yet responsive to the fieldwork context and the emerging data. Second, concerning data collection, critical interpretivist research generally employs qualitative methods such as focus groups, interviews, and observations, which provide in-depth, interactive, and analytical ways of investigating the participants' interpretations of their social world (Willis, 2007).

The study employs focus groups and interviews to promote profound dialogues and elicit detailed and thick descriptions of the participants' various forms of engagement (Denzin & Lincoln, 2005; Radnor, 2001). Guided by the critical interpretivist approach and the sustainability worldview, in-depth discussions are enhanced through the application of reflective techniques such as envisioning and the analytical exploration of the contextual setting and its influence on such engagement (Wayman, 2010). The diversity of participant profiles in each discussion session further enriches the dialogues and contexts through incorporating various perspectives, experiences, and personal backgrounds of participants (Huberman & Miles, 2002). In addition, the study employs document review, participant observation, and meetings with key informants. These methods enable the contextual exploration of a wide range of institutional, bureaucratic, participatory, and community structures in each of the Netherlands and South Africa (Walliman, 2006; Wilkinson & Birmingham, 2003). Enhancing the awareness of the socio-cultural and political systems and processes meets the research aims for critical and comprehensive understanding of youth engagement.

### *Importance of Considering the Researcher's Influence*

It is essential to consider the role of researcher within this critical interpretivist approach. The engaging and interactive nature of this study implies that the researcher's own subjectivity and personal experiences, as well as her prior readings on the research topics, may have influenced various aspects of the research process (Alasuutari et al., 2008; Angen, 2000; Schratz & Walker, 1995). Also, the relationship between the researcher and the participants is interactive and continuously developing. It is influenced by the participants' knowledge, values, and understandings, as well as by the researcher's own understandings and perspectives on the explored themes (Ritchie & Lewis, 2003). Accordingly, it is important to consider researcher bias, or the researcher's assumptions, values, and presuppositions which may have influenced for example the choice of methods, the facilitation techniques, or the analytical strategy. It is essential to recognize and acknowledge such personal influences<sup>131</sup> over the research process, through a process of reflexivity.

An elaborate discussion on reflexivity is provided in Section 7.7. Nevertheless, the following journal entry presents the reflexive thinking regarding the researcher's personal perspectives and their role in the data generation process.

*"I think I need to clearly understand my role in the focus group and interview discussions. Since I will be facilitating these discussions, it means that I might influence the way the conversation develops or the type of themes that come up or the questions that I might lead them. This is why it is important that I be consistent in the data generation process. I need to be clear and prepared on what exactly I'm looking for and how I need to explore. But this means I also need to recognize that some themes will be different in each session. I also have to facilitate all discussions myself, because I am taking a constructivist perspective which means construction of knowledge, together."(Research Journal, 18 June, 2011)*

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<sup>131</sup> While it is not possible to entirely remove this influence, it is essential to be aware of it and try to manage or reduce it where possible.

## 6.4.2 Basing this research within key concepts of critical interpretivism

There are fundamental concepts within the adopted critical interpretivist approach which have informed the theoretical perspectives and methodological structure for this research. These concepts, discussed further below, emphasize the importance of multiple subjective realities, social interactions, contextual influences, and power relations. Figure 15 presents the conceptual framework for this study, illustrating the dynamic inter-relationships between the different dimensions in this study.

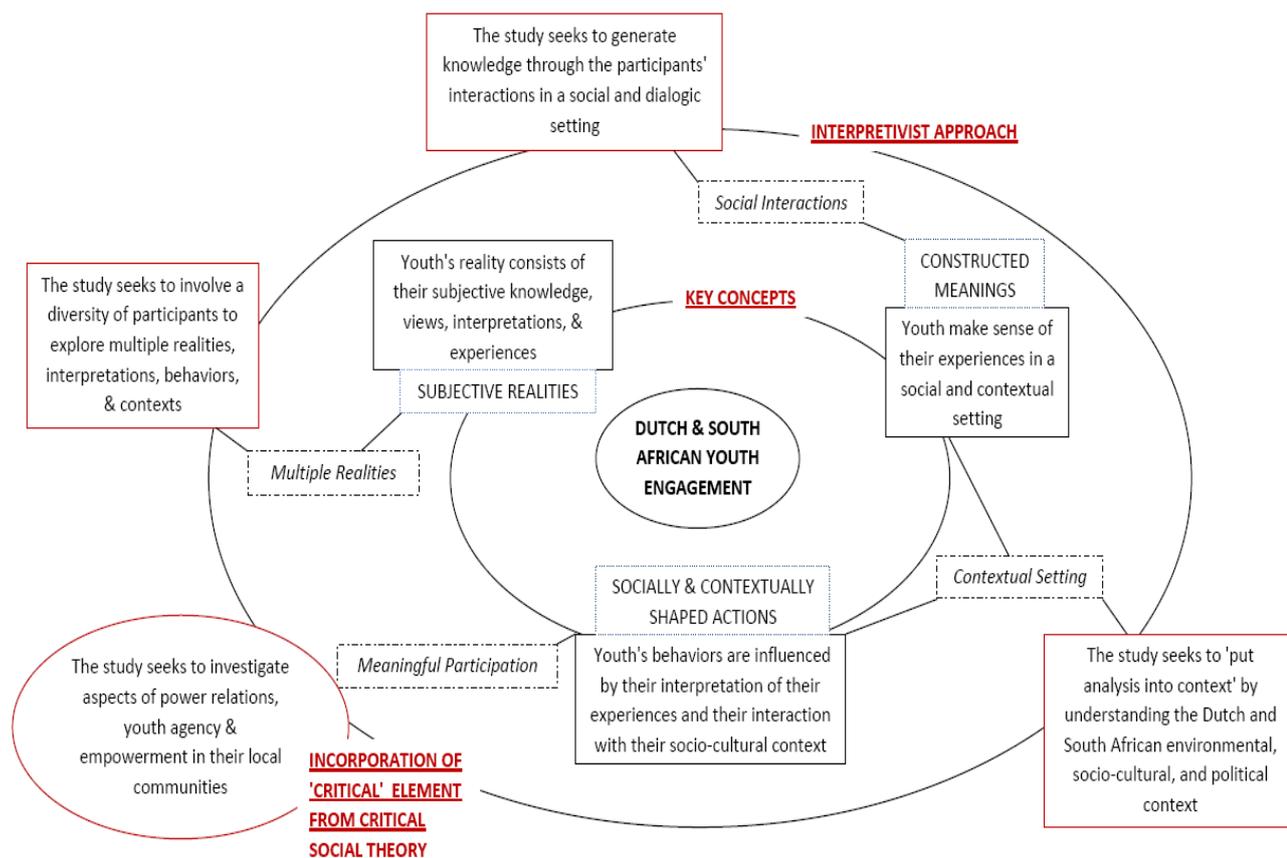


Figure 15: Conceptual Framework for this Study

### a) Multiple Subjective Realities

Interpretivism assumes that different people construct different realities based on their personal experiences and their local context. These meanings influence actions, as interpretivism also assumes that the way people understand their reality is manifested in their actions (Willis, 2007). Accordingly, the study considers that the research participants create and co-create meanings together and are continuously interpreting and making sense of their world. It considers that their sense of reality is always influenced by their lifeworlds; i.e., their personal experiences and concerns, subjective perspectives and beliefs, underlying values, and the socio-cultural and political context in which they are based (Radnor, 2002).

Understanding the subjective meanings and interpretations and the lived experiences of the participants concerning climate change and well-being is basic to answering the research questions. The study assumes that the ways in which the South African and Dutch youth make meaning of climate change, through their values, beliefs, perspectives, and experiences, helps manifest the ways in which they engage with these issues and what they mean to them personally (Klein & Myers, 1999). It assumes that the youth draw from the interpretations of their experiences, their relationships with others, and their surrounding context, to construct their identities, make sense of situations, and coordinate their actions (Ritchie & Lewis, 2003). The study achieves this understanding through the subjective realities and accounts of the research participants themselves (Willis, 2007). This manifests the importance of the participants' personal meanings and multiple subjective experiences in this study.

Researchers who have sought to understand the influence of subjective understandings and personal experiences on youth engagement with climate change include Bellamy & Hulme (2011); Braten et al. (2011) and Winter (2008). An example is by Macnaghten (2003), who applies an interpretivist approach to examine how pro-environmental behaviours are embedded in everyday lived experiences. He concludes that for most people, concern about environmental problems begins with personal experience: "*the environment is commonly experienced, not as simply a set of physical issues, but tangled up as part of social life, people come to understand the issues through particular things that matter to them*" (2003, p. 80).

## **b) Social Interactions**

In interpretivism, truth is negotiated through dialogue as people engage in social interactions and discussions to interpret their inter-subjective experiences (Angen, 2000). As explained by Kvale (1999) "*valid knowledge claims emerge as conflicting interpretations and action possibilities are discussed and negotiated among the members of a community.*" (p.56).

The study recognizes the importance of social interactions in constructing meaning, and employs interactive data collection methods. Focus groups and interviews promote dialogue among different group participants; hence providing multiple and profound perspectives and diverse experiences (Denzin & Lincoln, 2005). In a focus group setting, participants both influence the group and are influenced by it (Willis, 2007). Exploring and understanding the participants' engagement is achieved through understanding multiple perspectives on the topic in a group setting. As stated by Blaikie (2000, p. 115); "*in order to negotiate their way around their world and make sense of it, social actors have to interpret their activities together, and it is these meanings, embedded in language, that constitute their social reality.*" Accordingly, the social interaction achieved in a focus group setting and the emerging interpretations and possibilities would help reveal various aspects of the participants' engagement with climate change and well-being in their own lives.

Recent studies that have explored the dynamics of social relationships and interactions within people's environmental perspectives and lifestyles include Davison et al. (2011); Lapinski et al. (2007); and Nolan et al. (2008). For example, Duke (2010) investigated the influence of group processes on environmentally sustainable behaviours. He found that; "*...there was evidence of social influences interacting with, or working through, individual-level variables to guide environmental intentions and behaviours. Importantly, this kind of social influence has been under-researched*" (p. 193).

## **c) Contextual Influences**

In addition to the importance of meaning in this critical interpretivist research, the importance of context as a "*mediator of meaning*" (Willis, 2007 p. 211) is crucial for

achieving a comprehensive understanding of the participants' engagement with the research issues. An important goal of critical interpretivism is to achieve a better and more analytical understanding of issues within a particular context, rather than to achieve general or universal rules. It aims to generate understanding of the context of the phenomenon being studied and the process in which the phenomenon shapes and is shaped by that context (Denzin & Lincoln, 2003). Therefore, the analytical exploration of the particular setting in which Dutch and South African youth engagement is taking place is critical to achieving a comprehensive and valid understanding of such engagement. The study considers that the ways in which the participants personally relate to climate change, their sense of vulnerability, and their willingness and ability to act towards these feelings and perceptions, are all influenced by the existing environmental, social and institutional structures around them (Huberman & Miles, 2003) and by the power relations shaping their competencies and opportunities for participation (Rosev & Arjannikova, 2008; Jennings et al., 2006). Understanding these diverse contextual factors would enhance the understanding of the participants' engagement. Furthermore, considering that multiple realities exist concerning the participants' engagement (based on their lifeworlds and local context), it is important to investigate the influence of diverse contexts within South Africa and the Netherlands on the participants' engagements (Bourn & Brown, 2011). Hence, the study seeks to involve a diversity of participants from different geographic, cultural, socio-economic, and academic backgrounds within each of the Netherlands and South Africa. This would ensure the exploration and documentation of multiple viewpoints and their reasons within a diversity of contexts.

The important influence of culture and contextual environments in shaping sustainability pathways and in influencing youth's environmental attitudes and behaviours has been explored in various studies and reviews (e.g. Bråten et al., 2009; Dolnicar & Grun, 2009; Lee, 2011; Tilbury & Mula, 2009; UNESCO, 2009b). For example, Braten et al. (2009) concluded that; *"how people in different countries view knowledge and knowing about issues of vital importance, such as climate change, may be crucial for how those problems are understood, and eventually, solved. Questions concerning how knowledge and knowing about important topics are conceptualized in different cultural contexts, as well as the factors that may*

*constrain and enhance the development of more adaptive topic-specific epistemic beliefs, should therefore be more fully addressed..." (p.556).*

#### **d) Meaningful Participation and Power Relations**

The critical element incorporated within this interpretivist approach promotes a more in-depth and analytical investigation of the multiple and diverse dimensions of the Dutch and South African youth's engagement with climate change and well-being. It enables the exploration of existing power relations within the research participants and their specific socio-political setting. It also provides insight into their levels of and pathways for meaningful participation and their sense of empowerment as key stakeholders in their communities (UNIYY, 2010). For instance, Schwartz-Shea and Yanow (2012) highlight the importance of considering power relations in contextual interpretivist research; *"human conduct is understood in the myriad of historically constituted power relations that are part of the social setting"* (p.111). In the context of this study, the ways in which youth associate climate change to their own lives, their future possibilities, and to their sense of well-being; their understanding of socio-political processes and whether they feel empowered to address such understandings and concerns within their wider social and political sphere, all directly or indirectly relate to the context that partly shapes these feelings, perceptions, and experiences (Schreiner et al., 2005). Enhancing the participants' critical reflection can promote profound discussions regarding such various aspects of their engagement and the contextual influences.

As this study particularly focuses on higher education youth, several other studies have also looked into the role of educational institutions in promoting youth empowerment, such as Hayden et al. (2011) ; Jennings et al. (2006); and Shreiner et al. (2005). Shreiner et al. highlight the importance of investigating youth understandings of climate change and their feelings of empowerment within a particular social, political and educational context. The authors indicated that *"it would be of interest to see more studies of young people's integrated understandings of (or lack of such) the climate issue.... more knowledge about their motivational*

*patterns, views on the future...Empowering students to deal responsibly with the climate issue should be an important goal of education" (p. 41-42).*

## 6.5 CRITICISM OF CRITICAL INTERPRETIVIST PARADIGM

The main criticisms to the interpretivist paradigm need to be considered in this study in order to make sure that any possible weaknesses or limitations of this approach are taken into consideration. Table 7 presents the main areas of criticism of interpretivist and constructivist approaches and their application to this study.

CRITICISM	APPLICATION TO THIS STUDY
<p><i>Inability to make generalizations:</i> The relatively small number of participants (which might not be representative of the whole population), and the subjective and contextual nature of the study, limit the ability for generalizations to be made regarding the research findings (Silverman, 2010)</p>	<p>The study does not aim for broad conclusions regarding the general perspectives and concerns of Dutch and South African higher education youth on climate change and well-being.</p> <p>It aims for a rich and detailed data set, which can enhance the understanding of such engagement through insight into multiple viewpoints and experiences of diverse youth from different socio-demographic, cultural, and academic contexts in each country. In addition to informing local policymakers and practitioners on a diversity of youth's engagement processes, such insight would also enable youth and other relevant stakeholders in different country settings to identify similarities, disparities, and areas of resonance to their particular contexts (Grix, 2010; Mack, 2010).</p>
<p><i>Subjectivity:</i> The subjective position of the researcher influences the research process and the generated findings; hence their validity can be argued (Creswell, 2007)</p>	<p>The constructivist perspective in this study recognizes the active and interactive relation between participants and the researcher for co-constructing the data on their engagement. Such interaction provides the opportunity to dynamically explore the participants' profound understandings and experiences regarding</p>

	<p>climate change and sustainability, and their sense of well-being from its long-term challenges. As stated by <i>Alvesson, &amp; Deetz (2000)</i>; "...recognizing the interpretive nature of research means that no data, except possibly those on trivial matters, are viewed as unaffected by the construction of the researcher ..." (p. 113).</p> <p>Nevertheless, the researcher applied reflexivity to recognize and manage personal assumptions and biases.</p>
<p><i>Relativism</i>; if all meanings are co-created, this implies that all accounts are equally good or bad, worthy or unworthy, etc. How then to evaluate the meaning interpreted/analyzed by the researcher.</p>	<p>Interpretivism considers that the researcher can make worthwhile interpretations of social life yet does not claim such understanding and interpretations to be complete or final. Meanings and understandings are continuously being constructed and re-interpreted based on the social and contextual setting. Presenting a clear and transparent depiction of the coherence of the inquiry process would enable readers to decide on the credibility and quality of the research and the findings made.</p> <p>Also, interpretations made by other researchers could support or challenge the findings made in this study. This relates to the aims of this study to generate interpretations that provide insight as well as provoke further questions and research rather than provide definitive explanations. "<i>Interpretive accounts are to be judged on the pragmatic grounds of whether they are useful, fitting, generative of further inquiry...</i>" (Schwandt, 1998; p.247).</p>
<p><i>Lack of critical purchase</i>; Emphasis on subjectivity and meaning implies a tendency to understate the power relations; thereby neglecting to acknowledge the political or cultural influences on knowledge and social reality. It merely seeks to understand social phenomena rather than to change and challenge the status quo (Schwandt, 1998)</p>	<p>This interpretivist study recognizes the important of understanding the dynamics of meaningful youth participation and power relations in particular contexts. It therefore incorporates a critical perspective from critical social theory in order to critically explore issues relating to the empowerment of Dutch and South African youth within their social and academic environments and wider socio-political structures. Thus, while the analysis focuses on the meanings attributed to participants' experiences and actions, the study</p>

	aims to place these meanings in a wider framework that analyzes these meanings in a critical and contextual manner.
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*Table 7: Managing Criticism of Critical Interpretivism*

## 6.6 CONCLUSION

This study aims to achieve a comprehensive understanding of Dutch and South African youth engagement with climate change and well-being. It seeks to critically explore the youth's multiple subjective realities and their meaningful participation whilst emphasizing their social interactions and contextual settings.

Based on the key philosophical concepts and perspectives, the study considers that achieving an enhanced and valid understanding of the research participants' engagement requires a methodological inquiry that is coherent to the guiding theoretical framework. Accordingly, the study seeks to;

- a. Attain a diversity of perspectives, experiences, and realities by involving a diversity of participants from both countries, and from various socio-demographic, academic, and political backgrounds.
- b. Generate in-depth and meaningful data through engaging the participants in critical reflection, futures thinking, and profound dialogues.
- c. Investigate underlying power relations by critically exploring the youth's pathways to participation, sense of empowerment, and sense of well-being
- d. Understand the contextual dynamics of the participants' overall engagement by exploring the environmental, socio-cultural, and political setting in each of the Netherlands and South Africa
- e. Employ multiple data collection methods<sup>132</sup> to attain a comprehensive understanding through interactive as well as exploratory data sources.

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<sup>132</sup> Focus groups, Interviews, Participant-Observation, Meetings with Key Informants, Document Review

- f. Acknowledge the researcher's influence within this interpretivist inquiry and apply reflexivity to identify and manage any potential bias.
- g. Apply validation techniques<sup>133</sup> in order to; i) maintain conceptual and methodological coherence towards answering the research questions; ii) ensure consistency as well as flexibility across the fieldwork in each of Netherlands and South Africa; iii) ensure validity of research findings.
- h. Maintain ethical considerations<sup>134</sup> regarding anonymity, confidentiality, and voluntary participation.

The next Chapter (7) clarifies the research design, and details the main fieldwork phases in the Netherlands and South Africa.

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<sup>133</sup> Section 7.7

<sup>134</sup> Section 7.6

# CHAPTER 7. RESEARCH DESIGN AND METHODS

## 7.1 INTRODUCTION

The research design presents the coherence between the research questions and the methods or approaches used to generate data that can adequately answer these questions (Creswell, 2007). Radnor (2001) points out the basic features of a good interpretivist research. She emphasizes its "*explanatory and illuminating power*" (p.38) about the issues being studied, the multiplicity of perspectives and lived experiences, and the importance of taking a holistic and interactive approach to enhance the understanding of the research themes. She also stresses the importance of achieving methodological and thematic balance between data collection and analysis, in order to attain a sound and well-rounded output of the research.

In this critical interpretivist study, two key features characterize the research design. The first is the importance of conceptually linking the research questions, concepts, and methods in order to ensure theoretical and methodological coherence (Blaikie, 2000; Weber & Morris, 2010). The second is the importance of a flexible research process that can adequately manage the dynamics of the particular Dutch and South African settings (Maxwell, 2005; Denzin & Lincoln, 2003). This Chapter delineates the design decisions and research processes for this critical interpretivist study. Section 7.2 clarifies the conceptual rationale guiding the development of the research process and the decisions on setting, participation, and fieldwork. Section 7.3 discusses the aims and lessons learnt from the pilot study. Section 7.4 delineates the data collection methods and fieldwork processes undertaken in the Netherlands and South Africa; the main research methods included focus groups, interviews, meeting with key informants, participant observation, and document review, and thematic data analysis. Section 7.5 addresses potential limitations of the data sources and methods, and ways in which they were managed in this study. Section 7.6 discusses

the main ethical considerations in this study, and Section 7.7 discusses the quality and validity of the study and final reflections.

## **7.2 CONCEPTUAL RATIONALE GUIDING THE RESEARCH DESIGN**

The design for this study aimed at achieving an interactive research setting where data could be generated with a diversity of participants in each country, and the local setting could be contextually and critically explored for a holistic understanding of the participants' engagement. The dynamic and context-dependent nature of this study implies that the design would not be linear or sequential, but rather constantly evolving as the research progressed and new facts and factors emerged (Andrade, 2009; Mason, 2002). As explained by Maxwell (2005; p.2); "*the activities of collecting and analyzing data, developing and modifying theory, elaborating or refocusing the research questions, and identifying and addressing validity threats are usually all going on more or less simultaneously, each influencing all the others*". This on-going development of the research process was also essential in order to adequately respond to the contextual dynamics of each of the South African and Dutch settings whilst maintaining coherence with key theoretical principles of the study

*Which setting is appropriate for conducting this research?*

The overall aim of this study was to critically explore the ways in which youth in different countries are engaging with climate change and well-being in their personal, socio-political, and academic lives. The study sought to explore the different facets and dimensions of such youth engagement, as well as the different contextual factors influencing their engagement. As previously discussed in Section 6.3, the critical interpretivist perspective recognizes the contextual influences on the youth's forms and pathways of engagement. Accordingly, the setting in which youth engagement with climate change and well-being takes place is central to comprehensively understanding its different processes.

Recognizing the importance of context prompted the choice of two distinct countries, the Netherlands and South Africa. As discussed throughout Chapter 5, each of these two countries offers a distinct environmental, socio-political, academic, and cultural context, in which climate change, sustainability, and public health/well-being are approached differently, and in which youth engagement has historically taken different paths and priorities.

The aim for diversity did not only entail a different overall country context (Netherlands and South Africa); but also the diverse environmental, social, cultural, academic, and political contexts within each setting. The fieldwork was therefore designed to incorporate different geographic areas within each country, different types of universities<sup>135</sup>, and a wide range of youth and sustainability organizations. Each of these entities would provide a unique setting through which various aspects of the youth's engagement could be explored.

*Who are the potential participants in this research and how can access be gained?*

The study was conducted with youth since they are the main population group who will be facing the challenges of climate change continuously throughout their lives. In particular, the study places emphasis on higher education youth, who constitute the future leaders, professionals, and informed decision-makers in society (Bragg, 2010; Elaine et al., 2008). Achieving an enhanced understanding of the different ways in which university and college students perceive and relate to climate change at a personal and social level, their feelings and visions of vulnerability or security from its future risks, their forms and pathways of participation in their communities and internationally, and their sense of empowerment to influence change, can inform policy and practice on ways to reinforce the youth's meaningful engagement and empowerment in their local settings (Miller, 2012; Schusler & Krasny, 2008). Furthermore, exploring the potential implications of the youth's engagement with climate change on their short and long-term sense of well-being can further support the scarce literature existing in this area, which often seeks to demonstrate the importance of aligning the climate change and public health policies (EHP, 2008; WHO, 2009).

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<sup>135</sup> Comprehensive and technical universities; located in rural and urban areas

Moreover, conducting the study with higher education youth helped maintain the consistency of participant profile throughout the fieldwork between the two different research settings. Higher education youth in both the Netherlands and South Africa constitute a profile – as research participants- that: a) were accessed directly through the universities and colleges; b) varied in age from 18-30<sup>136</sup> but are still considered at a learning or early career stage; thereby youth whose future possibilities are impacted by climate change, and whose meaningful engagement is pivotal for sustained development and positive social change; and c) included both undergraduate and postgraduate students, which would provide a diversity of perspectives and experiences from participants of different social and academic backgrounds and at different levels of study. Therefore, university students as 'study participants' profile would meet the need for diversity within the research context while safeguarding the consistency between the two research settings.

In terms of access to participants, the study has identified two main routes that would ensure a diversity of settings and participants. In the first route, the researcher identified and contacted various universities across different geographic regions in each of South Africa and the Netherlands. The aim was to conduct focus group discussions with HE students at diverse academic institutions and doing different studies within each country. Approaching the universities also implied reaching out to a wide range of youth who are at different levels of interest and active engagement in climate change and sustainability issues. Therefore, coordinating the focus group sessions across a wide spectrum of Dutch and South African universities would expand the opportunity of capturing the voices and experiences of a variety of students. Such diversity would also enhance a more meaningful dialogue between focus group participants with different backgrounds, interests, and accounts.

In the second route, the researcher identified and contacted events relevant to the research themes in each of South Africa and Netherlands, and conducted focus group discussions with university students participating in these events. The events included academic conferences, forums, and workshops as well as social and cultural activities organized by sustainability or youth organizations. The researcher sought to hold the focus group discussions as part of the programme of these events, which

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<sup>136</sup> UN definition of youth: 18-30 years

would provide a chance to explore a diversity of perspectives amongst students from different universities and backgrounds. It would also enable the researcher to conduct participant-observation to observe the active processes of youth's participation and enhance the overall understanding of such engagement.

### *Establishing Local Contacts and Identifying Relevant Events*

The flexibility of the critical interpretivist approach implied that the research design would be developed and improved as the research progressed and as new and unanticipated data collection opportunities arised. The first few weeks in each country were important for enhancing the familiarity and the understanding of the Dutch and South African research settings, and for networking and establishing local contacts. Yet the continuous networking and active engagement in the field rapidly expanded the database of contacts, events, and organizations relevant for the study. At the same time, acknowledging the importance of context in this study implied maintaining the consistency in the conceptual and methodological rationale between the two research settings while allowing contextual elements to channel necessary adjustments. For example, given the enormity<sup>137</sup> of the South African landscape and the long distances and socio-cultural differences between the different provinces, the researcher visited four different provinces during the three months of July, August, and September 2011.

- Grahamstown<sup>138</sup> (Eastern Cape province): July 2011,
- Durban (Kwazulunatal province): first three weeks of August
- Johannesburg and Pretoria (Gauteng Province): the last week of August and first week of September
- Cape Town (Western Cape province): 3 weeks of September.

The preliminary planning for the South African and Dutch fieldwork phase was conducted based on two main networking routes. The first networking route entailed

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<sup>137</sup> Unlike in the Netherlands, which is a small country and the researcher was able to stay in one place (Wageningen) and make daily visits to other provinces as required. The impact of such contextual dynamics on the development of the study design is reflected upon in Section 10.4

<sup>138</sup> One of the main reasons for starting the fieldwork in Grahamstown was in order to take part in the National Arts Festival 2011 (NAF), which took place at Rhodes University from 29 June - 10 July, 2011. The event presented an opportunity to get acquainted with sustainability and youth related issues in South Africa and to establish local contacts through various workshops and events taking place, such as the ELRC's Re-Imagining Sustainability Forum.

an extensive online search on each country's socio-political and educational context for identifying potential universities, governmental institutions, and environmental and youth organizations that could be visited for the fieldwork. The second route was through the networking at the various events, themed around climate change, sustainability, public health, and youth issues, which were attended by the researcher. This supported the fieldwork progression by expanding the web of contacts who recommended relevant events and contacts; subsequently increasing the number of events that can be attended as participant-observer, and the focus group sessions, interviews, and KIG that can be arranged.

The continuous networking and development of the fieldwork process culminated with a database which covered the following different aspects of the fieldwork plan;

For organizing the focus group sessions and/or interviews:

- A list of potential contacts in various comprehensive and technical universities located in different regions of each country (youth environmental clubs, sustainability coordinators, and student unions).
- A list of national, provincial, and local youth organizations working on a range of environmental issues (climate change, sustainability, public awareness, environmental lobbying within political platforms, and youth leadership projects).

For organizing focus groups and/or participant-observation:

- A wide range of relevant events taking place throughout the year 2011. The compiled list of events encompassed formal academic conferences or workshops as well as national youth forums, public campaigns, and small-scale activities by local environmental groups.

For meetings with key informants:

- A list of key informants that could be contacted for attaining a deeper understanding of the local Dutch and South African contexts. The full list of member profiles is presented in Tables 4j and 4k.

- A record of various governmental bodies and national programmes working on issues related to climate change and sustainability, youth engagement, or youth well-being in the Netherlands and South Africa.

*Figure 16: Main Phases of the Study (over)*

**PHASE I:  
PILOT STUDY**

- Testing the research methods and techniques
- Developing group facilitation skills
- Exploring contextual issues
- Networking and establishing local contacts

**PHASE II: NETHERLANDS & SOUTH AFRICA  
FIELDWORK**

- **ESTABLISHING LOCAL CONTACTS AND IDENTIFYING RELEVANT EVENTS**
  - Network with national and provincial institutions (academic, governmental, non-governmental); university students, and youth groups.
  - Arrange data collection schemes within national and local youth events.
- **CONDUCTING FOCUS GROUPS AND INTERVIEWS**
  - Interactive discussions between participants regarding their perceptions, understandings, concerns, willingness to act, experiences, and pathways to participation concerning climate change and sustainability; and implications on their well-being.
  - Diverse participants from different demographic, socio-cultural, and academic backgrounds.
- **ATTENDING EVENTS AS PARTICIPANT-OBSERVER**
  - Climate change, sustainability, public health, & youth themed events.
- **MEETING WITH KEY INFORMANT GROUPS (KIG), REVIEWING KEY INSTITUTIONAL AND POLICY DOCUMENTS**
  - Explore contextual factors promoting or impeding youth engagement with climate change and well-being
  - Understand policy context and avenues for generating recommendations

**PHASE III: DATA  
MANAGEMENT & ANALYSIS**

- Transcribing / Coding using N-Vivo Qualitative Software
- Conducting Thematic Analysis
  - o Apply inductive thematic analysis to identify major themes of Dutch and South African students' engagement with climate change and well-being
  - o Contextualize the participants' engagement within the Dutch and South African settings.
  - o Explore implications for policy and practice and make

### **7.3 THE PILOT STUDY IN ZAMBIA**

The pilot study was conducted in September 2010 as a focus group session at the 28<sup>th</sup> Environmental Education Association of Southern Africa Conference (EEASA 2010)<sup>139</sup> which was held in Zambia. The event was decided as an adequate venue for conducting the pilot study for several reasons. First of all, the pilot study would allow the researcher to test the data collection methods and techniques and identify any areas that require improvement, especially concerning the envisioning exercise which she would be conducting for the first time. The pilot study would also enable the researcher to practice and develop her interpersonal and group facilitation skills which would be important when conducting the actual fieldwork in the Netherlands and South Africa.

In addition, conducting a focus group discussion on climate change and well-being within a regional sustainability conference provides an adequate chance to explore these research themes with a diversity of participants. This diversity could be attained as the conference was attended by experts, government practitioners, researchers, and students from different Southern African countries, providing different perspectives and accounts with the research issues. This diversity could also enhance the desired participant interaction within the pilot focus group discussion and the collective construction of meanings and understandings. The researcher needed to further develop such skills at a practical level, in order to better understand the study as well as the adopted critical interpretivist approach.

Finally, at a personal level, conducting the pilot study in a foreign country would help develop the researcher's skills required when undertaking the fieldwork in the

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<sup>139</sup> "Decade of Education for Sustainable Development: Lessons and Processes for a Sustainable World", held in Copperbelt University, Kitwe, Zambia from 19-24 September 2010.

Netherlands and South Africa. The pilot study therefore provided a good practice for the researcher to engage with the study's themes within a completely different context and socio-cultural and working environment. This would enhance the researcher's skills on maintaining focus on the research objectives and conceptual rationale while adjusting and modifying to meet contextual dynamics. It would also enable the researcher to practice conducting follow-up interviews with some participants as well as side discussions with key informant groups and experts in the field. In addition, the conference itself would present a chance to explore first-hand the main sustainability, climate change, and public health/well-being issues in a Southern African context, and the major themes and challenges being faced in that area. It would also help establish local networks and contacts valuable for the fieldwork in South Africa.

In summary, conducting the pilot study as part of the EEASA Conference provided an opportunity to literally conduct a pilot of the entire study: To explore, for the first time in a practical and non-theoretical way, youth engagement with climate change and well-being in a specific setting and country context.

#### *Lessons Learnt from the Pilot Study*

The pilot focus group study was conducted as a workshop session within the EEASA Conference programme. The session lasted 1.5 hours and the target participants were undergraduate and postgraduate university students, aged 18-30, from the Southern African region. The pilot study was attended by 8 participants<sup>140</sup>. The participants' profile is presented in Table 4b in Appendix 4.

The pilot study proved very useful for deepening the researcher's own conceptual and methodological understanding of the overall study as well as for developing important research skills. It provided a first-hand experience with the research issues and research participants, which guided improvement in the study design and

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<sup>140</sup> Ethical considerations regarding participation (consent form, privacy and confidentiality) were maintained.

methods. The pilot study also provided encouragement and a morale boost, as demonstrated in the following excerpt from the researcher's journal;

*"Stepping out of my comfort zone into a completely new research and social and cultural field gave me a fresh perspective on my research themes and new grounds for developing as a researcher. Engaging with other researchers and with other youth on sustainability and climate change helped me take a step beyond the theoretical concepts of research and understand the study at a practical level. It encouraged me to improve my design and I got excited looking forward to the fieldwork phase."* (Research Journal, 13 October, 2010)

In addition to the usefulness of the pilot study at the personal level; it was invaluable for enhancing the design and improving the methods. The lessons learnt from the pilot study are elaborated below.

- *Focus Group Dynamics*

The pilot study emphasized the need for a more logistically and conceptually organized focus group session. The researcher realized that it was not an easy task to manage a dynamic discussion amongst the focus group participants in the pilot study. For example, a free-flowing discussion between the entire group remained limited, as several participants often had to be addressed personally for answers. Also, the scattered seating of participants across the room hindered their interaction, and the researcher sought to have, when possible, round table discussions in the fieldwork phases in Netherlands and South Africa. In addition, the pilot study highlighted certain weaknesses in the facilitation of the session, which sometimes hindered the dynamic discussion. Listening to the voice-recordings following the session revealed that the leading questions were sometimes misleading in terms of clarity or irrelevance to the main research questions. This might have led to unnecessary diversion away from the main research topics or to confusion amongst

participants. The following personal reflection from the researcher's journal describes this problem;

*"I realized that I was prepared for moderating the session but it's never enough. I think I could have prepared or used exact wordings of some questions which were not clear to them and so I had to repeat and explain further, which might have even confused them further. I need to prepare clear and short questions that do not mix up too many ideas together & waste unnecessary time. Most importantly, they need to be linked to the main research questions..."* (Research Journal, 29 September, 2010)

In preparation for the fieldwork phase, the following improvements were applied to the study design and methods:

- A more coherent and clearer set of themes and leading questions were developed based on the key research questions. The aim was to guide the discussion towards exploring more in-depth and interactively the participants' engagement with the research issues.
- In order to enhance interaction within the group, the researcher realized the importance of clearly explaining to participants at the beginning of the session that this constituted an opportunity to have their own voices heard on these issues, and stress the study's interest in the natural interaction that would develop amongst them. The researcher also decided to repeatedly encourage the participants throughout the session to respond to and share each other's ideas, experiences, and accounts.
- The researcher realized that grouping the research participants into small group discussions at the beginning of the focus group sessions would act as an important ice-breaker, and could promote the discussion and help

establish bonds between the participants; thereby facilitating their interaction together.

- Concerning the data recordings, the researcher found that the technique conducted at the pilot study, by taking notes of the main points during the discussion rather than relying solely on the voice recordings, was very useful. Taking personal notes helped identify emerging themes and organize personal thoughts. It also facilitated writing brief observation notes and personal reflections during and after the session.

- *Envisioning Activity*

Following the pilot study, the researcher realized that she had not yet fully understood the purpose and usefulness of the envisioning activity. The research supervisor had recommended this technique in order to encourage the participants' reflective and critical thinking for a more in-depth discussion of the research themes during the focus group session. However, during the preparatory phases for the pilot study, the researcher had not been able to perform in-depth reading to further grasp the usefulness of this technique, but rather went through its main literature in a hurried way. Consequently, the researcher's aim of conducting this activity during the pilot study was to encourage the participants to express themselves in a written or creative form regarding climate change and well-being, which would help her explore the more personal aspects of each participant's engagement with these issues. Following the pilot study, the researcher conducted more in-depth reading into envisioning as a research technique, and reviewed the design of the focus group session and the sequence of techniques that had been previously applied. Learning from the pilot study, the focus group sessions were re-designed to start with the envisioning activity, realizing that this technique could be more useful at the beginning of the session, as illustrated in the following journal entry:

*"Through the envisioning activity, I want to allow the participants to take some personal space for themselves at the beginning of the session to*

*personally reflect on the themes we will be discussing. I want them to take these first 10 minutes of the session to personalize and be critical about climate change: to think of what it means to them personally and to the way they live their lives, to their health, to their future possibilities and jobs, and in what role and power they see themselves influencing their future to sustainability. I think this would help them engage in a more meaningful and profound discussion with each other and generate more meaningful data."* (Research Journal, 5 January, 2011).

- *Role of the Critical Interpretivist Researcher*

The pilot study helped enhance the researcher's understanding of her role in this study. The diverse processes that the pilot study encompassed highlighted the active role that the interpretivist researcher can play in facilitating the discussion and in helping the participants collectively construct their meanings and interpretations on climate change and well-being. It also illustrated the importance of the personal reflections and observations in the researcher's journal, in increasing her awareness of underlying thoughts and opinions regarding the research issues and the pilot study setting. This encouraged continuing this reflexive and reflective process which would help identify personal engagement with, and potential influences on, the research process. For example, the following journal entry reflects on the researcher's concern regarding her role during the facilitation of the pilot study focus group;

*"I'm not sure, but maybe at some points I might have interrupted unnecessarily. I should read more on how to be a good facilitator from an interpretivist perspective, so that I can understand my role in the process. I also want to reflect on my own assumptions, I need to make sure that what I personally think of climate change and well-being does not directly influence what they say in the discussion."* (Research Journal, 29 September, 2010)

- *Data Analysis*

In order to make sure that the data from the pilot focus group session were answering the research questions, the researcher thematically analyzed the data right after it was generated. The importance of conducting data collection simultaneously with data analysis is reflected in the following excerpt from the researcher's journal;

*"I learned that this technique would be important during the fieldwork so I can identify emerging themes and reflect on personal observations following each session. It also made me realize the importance of managing time and data so I can be able to collect, transcribe, and analyze data at the same time in an efficient way whilst in the field." (Research Journal, 13 October, 2010)*

In addition, the extensive data set that was generated from the pilot focus group discussion prompted the researcher to use an adequate programme (N-Vivo 9) for documenting and managing the data, realizing that the data set would largely expand with the two research settings in the Netherlands and South Africa.

#### **7.4 DATA COLLECTION: METHODS AND FIELDWORK PROCESSES IN THE NETHERLANDS AND SOUTH AFRICA**

The fieldwork in the Netherlands and South Africa was undertaken throughout 2011<sup>141</sup>. In total, the researcher spent three consecutive months in South Africa<sup>142</sup>, and two and half months in the Netherlands<sup>143</sup>. The researcher decided to complete all the South African fieldwork in one visit to the far-distanced country, whereby the relatively closer Netherlands could be returned to as needed for completing the

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<sup>141</sup> Prior to commencing fieldwork, extensive reading and online research was conducted in order to get acquainted with the environmental, socio-cultural, political, and academic context of each country.

<sup>142</sup> July, August, and September 2011

<sup>143</sup> 2 weeks in November 2011; June 2011; February 2012

Dutch fieldwork. The decision to use focus groups and the envisioning technique, interviews, participant-observation, meeting with key informants, and document review, is in accordance with the study's ontological and epistemological perspectives which reflect a constructivist and contextual understanding of the social world (Arksey & Knight, 1999; Merriam, 2009). The sections below describe the fieldwork processes undertaken in both countries, including establishing local contacts and events, conducting focus groups and interviews, meeting with key informants, attending events as participant-observer, and reviewing key documents.

#### **7.4.1 Focus Groups**

Focus groups constitute a dynamic data collection method which promotes interactive discussions among the research participants in an organized group setting (Barbour, 2007; Morgan, 1998). In focus groups, "*one person's ideas bounce off another's, creating a chain reaction of informative dialogue*" (Anderson, 1998, p.200). It is therefore effective for inducing ideas, triggering memories of events and experiences, and encouraging the expression of opinions, attitudes, and emotions. This generates rich understandings on participants' concerns, beliefs, and experiences (Barbour & Kitzinger, 1999; Crotty, 1998). This study considers that generating meaningful data on the various dimensions of the participants' engagement, including their personal beliefs, values, and concerns, and their actions and experiences, can be achieved through critically exploring multiple perspectives and experiences in a group setting (Anderson, 1998; Denzin & Lincoln, 2003). A diversity of participants, from different geographic, cultural, socio-economic, and academic backgrounds within each of the Netherlands and South Africa, would enhance a richer, deeper, and more contextual discussion where valuable data can be generated.

The study design identified two main settings for conducting the focus groups in each country; a) comprehensive and technical universities and colleges located in

different regions; and b) climate change/sustainability or youth related events<sup>144</sup> in which higher education students are participating (such as youth forums, academic conferences, or social events organized by youth or sustainability/climate change organizations). The aim was to capture a diversity of participant backgrounds, perspectives, and experiences, and to explore the impact of different socio-demographic, environmental, and political settings on the participants' engagement. Participant diversity would also promote interactive and meaningful discussions in these sessions (Maxwell, 2005; Morgan, 1998).

The focus group sessions were semi-structured. The study aimed for a group size of 8-15 participants. This would promote a diverse, rich, and dynamic discussion whilst maintaining smooth interaction among the participants and ensuring each participant has the opportunity to contribute constructively to the session (Barbour, 2007). Each focus group session would last between 1-1.5 hours, to ensure sufficient time for the participants to first reflect on the research themes at a personal and critical level then interact together in a meaningful and prolonged discussion.

At the start of each focus group session, an envisioning, or futures thinking, activity was applied in order to promote critical and reflective thinking, and more meaningful discussions throughout these sessions.

### *Envisioning Technique*

Envisioning has been prominently featured in recent literature and practice, as a core component of learning and education for sustainability, as "*the exercise of imagining a better future*" (Tilbury & Cooke, 2005; p.23). Envisioning aims to engage people in a profound, critical, and future-oriented thinking over their preferred pathways to sustainability (Meadows, 1996). It prompts various stakeholders to reflect on their personally desired futures and long-term goals and establish links to their current beliefs and actions. Such reflective and fore-sighted thinking enables people to re-examine and understand their underlying values, beliefs, and interests and motivates

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<sup>144</sup> The focus group would be held as part of the programmes of these events.

them to explore the pathways to positive action and change. As people share their visions and understandings and debate their conflicts and similarities, they work together towards arriving at a personally and contextually relevant pathway to sustainability. *“As a pivotal component of education for sustainability, futures thinking is a process that is transforming the way people relate to their future, helping to clarify their values, cultivate dreams, inspire hope and, above all, lead to action plans for change towards a more sustainable future.”* (Tilbury & Wortman, 2004; p.33). In addition, a critical aspect of envisioning is its ability to empower people by helping them to see themselves as owners of their visions and as vital contributors and responsible stakeholders to the process of change (Wayman, 2010).

Recently, future-thinking techniques have been applied by several researchers and institutions within the field of sustainability and climate change. This includes applications in the research and practice of higher education institutions (ARIES<sup>145</sup>; Jones et al., 2012; Pollock et al., 2009; Robinson, 2011); governmental institutions (Bryson et al., 2010; Kelly et al., 2004); and international organizations (OECD<sup>146</sup>; UNESCO, 2006<sup>147</sup>; UNESCO, 2012b). For instance, Jones et al. (2012) developed a framework for promoting futures thinking among higher education students in science education. They highlighted the importance of such critical and reflective techniques particularly amongst youth; *“futures thinking framework provides a useful model to guide teaching and learning programmes, and it is our hope that it can be used to extend traditional approaches to science topics and encourage students to develop critical, reflective, and flexible responses to future-focused issues that affect them as individuals and as residents in local, national and global communities.”* (p. 33)

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<sup>145</sup> ESD at ARIES [http://aries.mq.edu.au/publications/aries/efs\\_brochure/pdf/efs\\_brochure.pdf](http://aries.mq.edu.au/publications/aries/efs_brochure/pdf/efs_brochure.pdf)

<sup>146</sup> Schooling For Tomorrow research on Futures Thinking (with several country case studies) <http://www.oecd.org/site/schoolingfortomorrowknowledgebase/futuresthinking/>

<sup>147</sup> Youth Envisioning Contest, UNESCO Asia-Pacific 2006 <http://www.unesco.org/new/en/natural-sciences/priority-areas/sids/enabling-environments/youth-envisioning-contest-asia-pacific-2006/>

### *Clarifying the Relevance of Envisioning in this Study*

The study employs the envisioning technique in order to personalize climate change for the participants and promote their critical awareness and reflection with a focus on social and political processes and structures. Envisioning helps set a subjective<sup>148</sup> and critical tone for the discussion, by providing the participants with reflective space to envision their own future with climate change, the social and political changes they would like to see towards achieving sustainability, and their role in the process. It encourages the participants to reflect on the values, beliefs, and assumptions that have shaped their visions of their future, and the contextual factors that have influenced their climate efficacy and agency to affect changes. Accordingly, the envisioning process helps uncover important value orientations and institutional dynamics exerting control or influence over young people's capacity and agency to affect societal practices and organizational functionings regarding climate change and sustainability issues.

A critical perspective towards youth engagement recognizes that true empowerment requires that youth have the knowledge, skills, and space for understanding wider societal values, structures, and practices that shape their surrounding environment and for reflecting and negotiating ways to change and enhance it (Meadows, 2001; Zimmerman, 2000) As Jennings et al. (2006) argue; *"youth empowerment is not complete without critical reflection, reflective action, and social change at the individual and collective levels. Youth may be able to address community problems, but if they do not have opportunities to examine the socio-political processes that underpin and created these community problems, then they lack the insight needed to become effective agents for altering the status quo"* (p.50). Thus, achieving a greater level of depth and reflection through the envisioning process would promote more meaningful dialogues amongst these youth on the pathways and possibilities for a more secure and sustainable future (Tilbury, 2011a).

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<sup>148</sup> Congruent with the multiple subjective realities that the study seeks to explore.

- *Fieldwork*

A semi-structured approach<sup>149</sup> with open questions was used in all focus group sessions conducted in both countries. This enabled the researcher to probe and explore contextually-relevant issues in each distinct session whilst ensuring a dynamic and naturally-flowing discussion (Bryman, 2008). Open questions also stimulate unanticipated or unexpected themes, which are personally and experientially relevant to the participants, to emerge from the discussion (Barbour, 2007; Krueger & Cassey, 2000). In the preparation for the whole group discussion, which would form the gist of the data generation, the researcher reviewed the main research questions and objectives to prepare a list of main themes and leading questions to facilitate and guide the discussion. As the study was exploratory and sought emerging data, the main research questions did not themselves constitute the focus group questions, but were rather used as the core guide for developing these questions (Kvale, 1996; Ritchie & Lewis, 2003). The overall structure of the focus group sessions was designed to include a preliminary envisioning exercise to encourage reflection and critical thinking, followed by small-group discussions in which participants shared their visions and reflected on their influences and possibilities, then an interactive discussion between the whole group. Figure 4a in Appendix 4 displays the main format and aims of the focus group sessions that were conducted in both the Netherlands and South Africa.

In total, 8 focus groups<sup>150</sup> were conducted in the Netherlands and 10 focus groups<sup>151</sup> in South Africa, with a total of 66 and 117 participants, respectively. Tables 4c and 4d in Appendix 4 provide a summary profile for these sessions in both countries. An important highlight from these tables is the diversity of participant profiles in terms

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<sup>149</sup> In compliance with the exploratory approach of this research and its constructivist epistemology.

<sup>150</sup> Out of these sessions, 4 were conducted with students at Dutch universities, 3 were conducted with student members of environmental or sustainability organizations, and 1 was conducted in a sustainability youth event.

<sup>151</sup> Out of these sessions, 7 were conducted with students at South African universities, 2 were conducted with student members of environmental or sustainability organizations, and 2 were conducted in sustainability youth events.

of age, level of study, academic discipline, and place of origin. The study has repeatedly highlighted the importance of such diversity in personal socio-demographic contexts of the participants for enhancing the interactive and meaningful discussions amongst participants in a focus group (Marshall & Rossman, 2006; Rowlands, 2005) The tables also demonstrate that focus groups were conducted in various locations across each of the Netherlands and South Africa, in order to reach out to a diversity of higher education youth in each country.

It is important to note the logistical constraints<sup>152</sup> which are often inevitable in qualitative research conducted with voluntary participation and a dynamic research design (Denzin & Lincoln, 2005). For instance, the number and duration of the focus group discussions relatively varied between the different sessions; this was largely shaped by the uncontrollable group dynamics in each session (Barbour, 2007). A few sessions did not meet the aimed group range<sup>153</sup> of 8-15, as for instance one session which had 4 participants, and another which had 20 participants. The study design also aimed for a diversity of participants, in terms of gender, socio-demographic and cultural background and academic field of study. However, this also depended on the type of individuals who were interested in the research and in taking part in these group discussions. Also, the researcher noted that in the sessions that had between 5 and 8 participants, the focus group session lasted around 45 minutes to 1 hour. In the sessions that had more than 10 participants, the discussion tended to last for 1.5 hours.

Another crucial point to highlight is that the focus groups in this study did not adopt a standard approach with regards to the framing of the discussions. Rather than the researcher articulate specific questions to be answered by the participants in the discussions, the focus group sessions created some learning and reflective spaces, primarily through the envisioning activity which subsequently generated deeper and more connected dialogue (than the standard focus group interactions) and promoted

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<sup>152</sup> Fieldwork limitations addressed in Section 7.5

<sup>153</sup> Please refer to Appendix 4.

the participants' interactive construction of the frames guiding the discussion. This is aligned with the critical interpretivist position of this study and the aim for in-depth and analytical understanding through diverse participants' multiple subjective realities and interactions.

The study considered that employing multiple research methods would help further explore the emerging themes from the focus group discussions, and promote a more comprehensive understanding of the research issues explored (Merriam, 2009; Silverman, 2006). These methods are discussed below.

#### **7.4.2 Interviews**

Interviews enabled the researcher to “*understand the world from the subjects' point of view, to unfold meaning of peoples' experiences*” (Kvale, 1996; p. 1-2). This interactive method was effective in generating expansive data on the participants' experiences (Greenfield, 2002), and enables the researcher to use various probes and other techniques “*to achieve depth of answer in terms of penetration, exploration, and explanation*” (Ritchie & Lewis, 2003, p. 141). The study sought to gain in-depth insight into the personal and experiential aspects of the participants' engagement with climate change and well-being, from their own perspectives and in their own words. In addition, the knowledge constructed in the interview met the constructivist epistemology of this research (Elliott, 2005). The role of researcher in this study surpassed the mere collection of data to entail a wider process of data production along with the interviewees. This process is described best by Mason (2002, p. 63); “*according to this (constructivist) perspective, meanings and understandings are created in an interaction, which is effectively, a co-production, involving the researcher and interviewees. Qualitative interviewing therefore tends to be seen as involving the construction or reconstruction of knowledge more than the excavation of it.*” In the interview, both the researcher and the interviewee were engaged in dialogue; hence the importance of recognizing and managing the researcher's potential influence on the interview process.

The main aim of the interview was to gain insight regarding the following;

- Following-up with focus group participants to get a deeper and more personal insight into their engagement with climate change and well-being.
- Capturing a diversity of perspectives and accounts by interviewing youth who would be interested in participating in the research but are unable to attend the focus group sessions.
- Exploring the contextual aspects of youth engagement with climate change and well-being by interviewing young people involved in youth or sustainability, climate change, or public health initiatives, projects, or events.
- *Fieldwork*

Semi-structured interviews were conducted for their flexibility, as interviews are bound by context, setting, and interviewee dynamics (Mason, 2002; Maxwell, 2005). The flexible design allowed the more detailed and contextual information to gradually emerge through the interactive conversation. An interview guide was prepared to ensure a systematic interview process across the different sessions in both countries. The aim of the interview guide was to organize the discussion with different interviewees by identifying the principal questions that fit the profile of each interviewee and the data expected to be generated with them (Creswell, 2007). In addition, the interview guide would provide logistical support through improving theme and time management and organizing note-taking. Concerning time management, the design was aimed towards a 30-45 minute interview, to give sufficient time for an in-depth discussion to elicit meaningful data with the interviewees (Creswell, 2007).

A total of 9 interviews were conducted in the Netherlands, and 16 interviews in South Africa, as shown in Tables 4e and 4f in Appendix 4. The interviewees' profiles widely varied with young people from diverse backgrounds, interests, and expertise, further enriching the study with a diverse data set with different Dutch and South African youth. For instance, some interviews were held with university and college

students from different academic fields to gain insight into their perspectives and experiences, and with postgraduate students and young researchers working in the field of sustainability/climate change in different Dutch and South African universities and environmental and youth organizations. Other interviews captured the experiences and concerns of youth who were student members of academic, national, or local environmental groups, or who have been involved in local climate change projects, youth forums, or youth representation at national and international environmental events. Several follow-up interviews were also held with focus group participants to discuss more-in-depth their personal and contextual experiences. Finally, a number of interviews were also held with university students who are not directly involved in climate change or other environmental activities, but who expressed interest in sharing their views for this study. The researcher sought to keep the interviews informal and flexible to meet with the exploratory aims of the study and enable adequate probing to the interviewee's accounts and perspectives as the discussion developed.

Finally, it is important to note that the interviewees were mostly youth who are directly or indirectly involved in active environmental practices. Initially, the researcher had also sought to hold in-depth interviews with some young people who were not directly involved in climate-related activities to explore their perspectives and concerns with climate change. Yet this was difficult, as the one-on-one discussions mainly appealed to youth who are actively involved in some way with climate change or sustainability issues. The limitations of such uncontrollable fieldwork dynamics are further discussed in Chapter 9. Table in Appendix presents a summary profile of the different youth who were interviewed.

### **7.4.3 Participant-Observation**

This study used participant observation to enable the researcher to critically explore the active youth engagement with climate change and well-being as it occurred through socio-cultural interactions and activities (Flick, 2002, 2009; Silverman,

2006). It also enhanced the exploration of the youth's forms and pathways of participation, and locating such engagement within wider socio-cultural, academic, and political contexts. This would improve the understanding and analysis of the research themes in ways that cannot usually be obtained relying merely on interview or focus group data (Maxwell, 2005). Other benefits of this method include the longer engagement with youth in their natural settings, as compared to often single encounters during interviews and focus groups (Flick, 2002). The benefit of such prolonged engagement with the participants in the setting, is described by Ritchie & Lewis (2003, p. 334); “*hanging out builds trust, or rapport, and trust results in ordinary conversation and ordinary behaviour in your presence*”.

It is essential to acknowledge the relative subjectivity of the critical interpretivist researcher as a potential weakness of this method. The personal notes or observations might not always represent the youth's actual understandings and accounts but rather the researcher's own personal understandings or initial interpretations of such statements (Marshall & Rossman, 2011). The researcher managed this during the fieldwork phase by maintaining a consistent scheme of recording, as much as possible, the exact wordings of the participants rather than paraphrasing, and by distinguishing personal notes and reflections by an italic style of writing. Furthermore, the triangulation of research methods helps balance the weaknesses of one method with the strengths of another. The use of this method in conjunction with focus groups and interviews would enhance a more comprehensive and valid understanding (Silverman, 2006, 2009).

- *Fieldwork*

Attending events as participant-observer largely enhanced the understanding of the dynamics of active youth engagement and participation, and of the academic, social, and cultural context of each country. Three events were formally attended for collecting data as a participant-observer in each country (Tables 4j and 4h in Appendix 4). The importance of attending these events as participant-observer lay in

the ability to observe first-hand the ways in which the Dutch and South African youth were engaging with climate change and sustainability at a collective and active level, the challenges they were facing, and their priorities at a personal level. They also provided, as the participants shared their personal accounts and experiences in these forums, insight into the implications of their different forms of engagement on their lifestyles, sense of security or vulnerability, quality of life, and overall sense of well-being. Furthermore, these events enabled the researcher to hold interviews and side discussions with various participating youth, including university and college students and young researchers. Numerous side discussions were also held with some of the participants in these events to gain deeper insight into their experiences and the factors driving them to participation. Some of these events were taking place over a few days or over several weeks, which presented an important opportunity for the researcher to follow the participants' engagement up-close throughout its duration, and to observe the preparations and interactions taking place. As presented in Appendix 4, the different aims, processes, and participant diversity throughout these events enriched the type of data collected and enhanced the understanding of the dynamics and pathways of participation amongst these youth.

In addition to these events which the researcher attended as a formal participant-observer, other academic and community activities and workshops taking place at the time of the fieldwork enhanced the researcher's understanding of each country context (Appendix 4).

It must be highlighted that in the Netherlands fieldwork, the language barrier constituted an important limitation throughout the attended events. Whereas the focus groups and interviews were held in English which all the study participants, and Dutch HE youth in general, are fluent at, yet the researcher had no control over the events that were organized by Dutch groups. The majority of attended events were conducted in Dutch, which notably weakened the researcher's ability to grasp the specific details and the important interactions taking place. It was occasionally

difficult to understand the dynamics of the underlying discussions amongst the youth themselves and between the youth and other stakeholders present at these events. The researcher had to place greater emphasis on personal observations as well as on constant questioning and side conversations with the various participants in order to understand the evolving dynamics of these events and the gist of the discussions being held.

In South Africa, participant-observation proved to be a valuable data source for the South African fieldwork, especially that numerous events that were attended formed part of the preparations for COP17<sup>154</sup>. This method enhanced the contextual understanding of the youth's engagement and the researcher's ability to interpret and analyze the fieldwork data in its particular South African context. It must be noted that the working language in all events attended was English.

Throughout the various attended events, it was important to ensure consistency in the documentation, as a participant-observer, across the various events, and that recordings are not selective or missing out on important information stated by the participants. Therefore, the observation notes taken during these events recorded, as much as possible, the exact wordings of the participants as they were presenting their visions, sharing their experiences, and making their public speeches at the forums.. In addition, the researcher kept written record of personal observations and critical reflections throughout these events. Finally, several side discussions were held with experts and researchers present at these diverse events. This further enhanced the contextual understanding of the research themes in the South African setting.

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<sup>154</sup> Taking place in Durban in December 2011.

#### 7.4.4 Meeting with Key Informants

The term 'key informant' refers to the special nature of the person being interviewed, often an individual who is knowledgeable in a particular field or subject area related to the research themes, or someone with an important viewpoint, status, or expertise in a certain institution or culture within the research setting (Bloor & Wood, 2006; Marshall & Rossman, 2006). In this study, meetings with key informants were conducted in both the Netherlands and South Africa to further understand the socio-cultural, environmental, and political context in which the research participants' engagement was taking place.

- *Fieldwork*

Key informant groups (KIG) in each country ranged from civil servants and government officers to managers and researchers in academic institutions and coordinators in youth or environmental organizations in each country. Figure 6i in Appendix 4 provides a summary of the main KIG profiles. Particular interest areas to be explored with the key informants in each country entailed the following;

- Understanding the main climate change impacts in each country, the degree of vulnerability for the country as a whole and for particular regions, and the response strategies and preparedness to manage these risks. This required meetings with government practitioners in each province and academic researchers in the various universities that were visited.
- Understanding the connections between climate change risks and public health threats and the forms in which this information is communicated to the public. Also, exploring the extent to which youth well-being is incorporated into research and policy related to climate change and public health. This required meetings with government practitioners and policymakers in the public health field, academic researchers in the fields of climate change and health, and medical practitioners at hospitals and medical research institutes.

- Exploring the level of integration of education for sustainable development in the educational curriculum of schools and universities across various regions, and the presence of environmental/climate change awareness programs or activities in various educational institutions and within the community. Accordingly, meetings were held with heads of departments or sustainability coordinators at various universities, and with public practitioners within ministries and municipalities working in the field of climate change awareness and education for sustainability.
  
- Exploring the role of various environmental NGOs and youth institutions in engaging youth in climate change awareness and sustainable practices, as well as in lobbying within the government for more sustainability-oriented policies and legislations. The pathways for youth participation, and the challenges involved in undertaking environmental or youth related work in each country context were also explored. These issues were investigated through meetings with coordinators and members of various youth and environmental organizations

Key informants were contacted either through email or phone, and the meetings proved highly valuable for gathering important information on the Dutch and South African context. Tables 4j and 4k in Appendix 4 provide details regarding the profile of each key informant in both countries and the main themes discussed with them.

#### **7.4.5 Review of Institutional Documents**

Document review provided insight into formal elements such as government policies and action plans, national statistics, or strategies and projects of private institutions. Such documentation provide contextual facts and statements that cannot usually be obtained by subjective methods such as focus groups and interviews. It also provides access into intangible aspects of the socio-cultural and political context such as the common values, beliefs, and customs within the research setting (Flick, 2009; Marshall & Rossman, 2011). This method can therefore ensure a more

comprehensive understanding of the social, political, and cultural context of the research themes within each of the Dutch and South African context. The data generated from more subjective or collective methods can be contextualized and further understood holistically.

In the context of this study, the researcher reviewed Dutch and South African governmental papers and policy reports; and reports by international organizations<sup>155</sup> working on academic and environmental issues or youth issues. This was necessary to understand the contextual setting of the participants' accounts and the socio-cultural, socio-economic, and political backgrounds. The researcher also reviewed documents generated through or for this research, such as participant-generated comments and envisionings, and the personal data collection and reflective notes of the researcher.

However, a commonly cited drawback of document review and analysis is inferential reasoning, in which such documents mainly hold meaning in the way they are used and understood and in what and whom they represent socially and culturally (Mason 2002). Researchers are therefore often advised to review and analyze these artifacts taking into consideration the particular context in which they were produced. Also, it is important to clarify the logic behind the interpretation of meaning from a document (Bryman, 2008). This is further expanded as reflexivity is discussed in the section on validity and quality of the research.

#### **7.4.6 Thematic Data Analysis**

The study applied content or thematic analysis using an inductive analytical approach. Content analysis aims at identifying key themes, patterns, and meanings from the data, placing emphasis on 'what is being said by the participants and in what particular context' (Fontana & Frey, 2005). It draws the advantage of enabling the organization of large segments of data through establishing sets of codes and

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<sup>155</sup> Such as UNFCCC; UNEP; UNESCO; EU; WHO; GHF (Global Humanitarian Forum)

categories which can then be presented as themes (Bryman, 2008). The inductive content analysis used in this study entails generating the main codes and categories from the data itself rather than from pre-assigned categories<sup>156</sup>. It is useful when the existing literature and knowledge on a certain issue is limited or fragmented (Ritchie & Lewis, 2003), as is the case with youth engagement with climate change and well-being in particular country contexts.

In general, the purpose of coding is to 'fracture' the data and rearrange them into categories that facilitate comparison within the same category and between categories, and that aids in the development of theoretical concepts (Maxwell, 2005). Generating the data codes from the data itself meets the study's aim for understanding the participants' engagement from their own emic constructs, that is, their own words and accounts. In taking an emic approach<sup>157</sup>, the study meets the aim of this interpretivist study for 'situated understanding' (Willis, 2007). It seeks to put aside prior assumptions and theories so that the core findings emerge from the data generated with participants. Arriving at this understanding through the participants' accounts and interactions implies an essential focus on an interactive process of meaning-making (Radnor, 2002). This approach also avoids that the researcher overlooking certain categories or important ideas emerging from the participants' accounts<sup>158</sup> (Huberman & Miles, 2002). Maxwell (2005) outlines different types of codes: organizational, substantive, and theoretical; which the study has followed in the coding strategy.

Nevertheless, it is important to note that the researcher chose not to ignore previous work in the field. At the beginning of the fieldwork, a preliminary conceptual model

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<sup>156</sup> Used in the deductive approach

<sup>157</sup> The emic approach is at the core of the grounded theory approach. It is mainly applied in studies exploring topics that are not yet extensively theorized. A main strength is its emphasis on the participants' own viewpoints and the particularity of the research context, and its potential to uncover unexpected findings.

<sup>158</sup> As per Silverman (2006), the risk of overlooking certain data categories as the deployment of categories can often be pre-designed rather than dependent on the categorizations emerging from the participants' interactions.

was developed, guided by; a) the research aims and perspectives, b) the pilot study, and c) available literature in the field of youth engagement with climate change and the impacts on well-being. The model was useful for guiding the data collection phase by providing a set of provisional issues to be investigated<sup>159</sup>, as well as for keeping track of the fieldwork development and ensuring that important issues are not overlooked. In terms of the analysis, the model also guided the researcher's preliminary interpretations and the development of the initial coding scheme (Grix, 2010; Lapan et al., 2011).

Finally, it is important to mention that data collection and analysis are conducted simultaneously, guided by the critical interpretivist approach which considers that "*meaning is not discovered but constructed*" (Crotty, 1998, p. 42). Therefore, the study acknowledges that the findings would emerge gradually as the research progresses and data is generated. Data on the participants' engagement with climate change and well-being would emerge as they engage in conversation together and actively construct the meanings and interpretations that they relate to their lived experiences with the research themes, and as new insights emerge with new focus groups, interviews, and observations. Data collection and analysis are thus performed in an iterative manner, continuously informing each other and subsequently guiding further fieldwork steps (Silverman, 2006).

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<sup>159</sup> The provisional set of issues entailed; Personal concern; personal experiences; health concerns; sources of information; willingness to act; role of government, university, society; changes they would like to see happen; how they want to be involved; opportunities and challenges for participation; sense of empowerment.

## Phases in Data Analysis

### *Preparation Phase*

- Following each data collection session, the voice-recorded data<sup>160</sup>, along with the field notes and researcher's journal<sup>161</sup>, were transcribed verbatim. The researcher read through the transcripts to help remember the details of the session, to familiarize with the content, and to highlight striking quotations. The importance of becoming familiar with the data, through engaging in this preliminary data reading and examination, is emphasized by several researchers such as Creswell (2007); Maxwell (2005); and Lacey & Luff (2001). This preliminary step enabled the researcher to identify emerging themes and relationships between themes, and note down the relevant contextual issues that could be possibly linked to the themes later on in the more in-depth analysis. It also guided the subsequent fieldwork process, as data collection and analysis went hand-in-hand in this study. Moreover, transcribing the personal/reflective notes from the researcher's journal assisted in becoming reflective as well as reflexive about the researcher's personal biases and assumptions and how these might have influenced the interpretation of the data (Huberman & Miles, 2002; Silverman, 2006).
- The breadth of qualitative data that was generated was organized and managed using the N-Vivo 9 programme<sup>162</sup>. This enhanced the researcher's ability to sort out the data, and simplified the coding/categorization phase.

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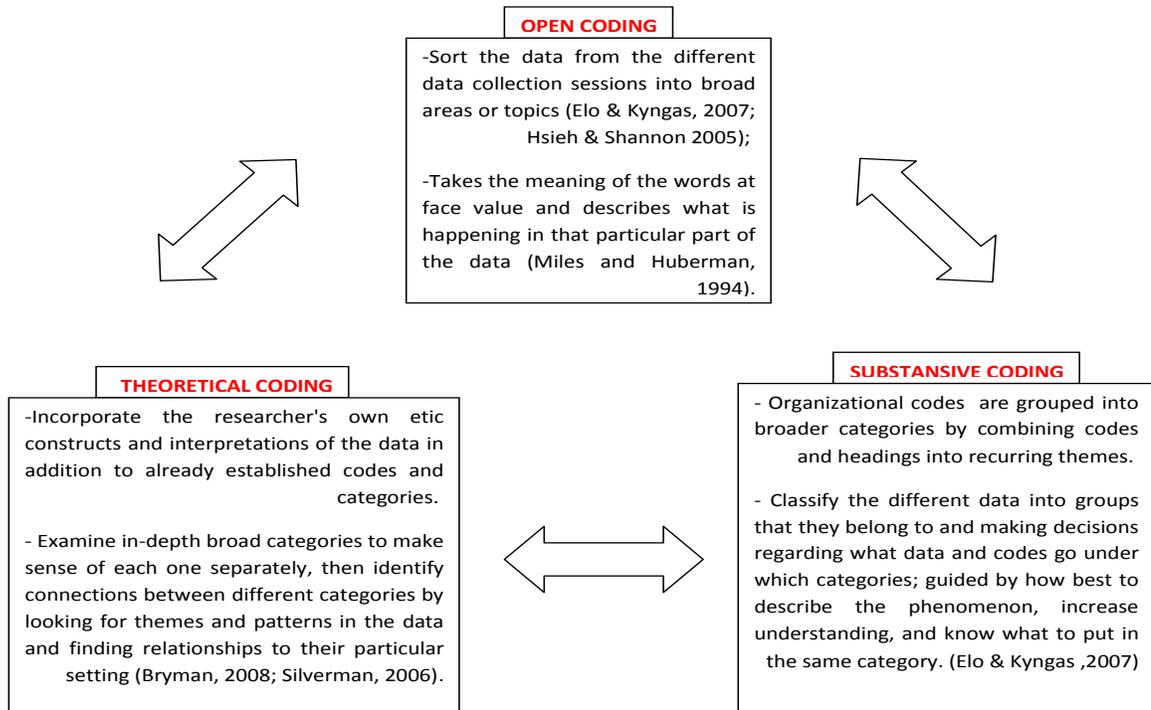
<sup>160</sup> The generated data were voice recorded after participants' consent. The study maintains ethical research practice concerning participant anonymity and data confidentiality; explained further in Section 7.6

<sup>161</sup> The researcher's journal is discussed as part of ensuring the quality and validity of the research in Section 7.7

<sup>162</sup> NVivo 8 is a software programme for qualitative data analysis. It mainly facilitates the organization, classification, and presentation of the data, but does not entail any core analytical functions.

### *Coding, Categorizing, & Conceptualizing Phase*

The study applied the inductive content analysis to organize the data through organizational, substantive, and theoretical codes<sup>163</sup>. Figure 17 below demonstrates the process of data interpretation and analysis<sup>164</sup> which guided the identification of key findings and themes.



*Figure 17: Data Interpretation and Analysis*

It is important to note the following important considerations throughout the data analysis phase;

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<sup>163</sup> Similar to Grounded Theory's approach of open, axial, and selective coding (Strauss & Corbin, 1990).

<sup>164</sup> It is important to note that the coding framework accounted for the unique data of each data collection session and for the general patterns emerging across the different sessions. But the final themes encompassed the overall findings, as the study does not seek to make strict comparisons within specific settings or across the 2 countries studied.

- Although substantive coding is more organizational than purely analytical, yet, this preliminary categorization of the data helps explore the initial emerging themes as well as established preface relationships between various themes. For example, the following entry into the researcher's journal illustrates the usefulness of this preliminary categorization phase;

*"As I was applying this preliminary coding phase, I noticed that, for both the South African and Dutch data, a lot of the data that I categorized under 'Challenges', I also categorized under 'Culture', and this signifies a potentially strong link between these two themes in the research."*  
(Research Journal, January 12, 2011).

- The researcher sought to put the analysis in context, through linking the identified themes with the contextual data that was generated on the environmental, socio-cultural, educational, and political settings in each of Netherlands and South Africa. The importance of the context in this critical interpretivist research approach has been repeatedly emphasized. The analysis therefore aimed to interpret the identified themes by locating them back within the participants' personal experiences and socio-political environment. *"Through contextualization, the researcher reveals how ordinary people experience the phenomenon – by thickly describing occurrences of the phenomenon in the participants' worlds of interaction."* (Huberman & Miles, 2002; p.359). The discussion of the findings also entailed returning to the literature in order to identify consistencies with and departures from findings in other studies, and to note new perspectives or insights contributed through this study.

- The researcher applied reflexivity throughout the data analysis process in order to manage personal biases or early assumptions regarding the meanings that the data might signify. The researcher also ensured triangulation of data sources to enhance the validity of the findings (Creswell, 2007). The following entry into the researcher's journal captures important insights and thinking processes throughout the data analysis phase;

*"My main worries were depth and validity. I wanted to make sure I go deep enough in understanding the data and identifying links so I don't just present raw data, so I don't end up with 'so what' but actually present something meaningful and that contributes to the literature...I really took my time with the data and kept going back and looking for new or different ways to see the findings; deeper, better, more complex. How to present complex themes in a simple way; how to make use of data I captured through different methods. I also kept going back to the transcripts, to make sure I've captured the meanings of what they're saying. Because I noticed that sometimes when we take a statement and put it under a specific finding category or theme, we risk taking it out of the context of the conversation or of that particular person. So, I always went back to my transcripts before deciding on the final themes and whenever I wanted to quote something, to make sure that the statement I am presenting is relevant to the finding I have identified rather than to my own understanding of the statement". (Research Journal, 13 December 2012)*

Figure 41 in Appendix 4 presents an example of the data analysis process and the key questions asked for arriving to a theme.

### **Managing Criticisms and Concerns on Thematic Data Analysis**

The researcher reviewed the main concerns and criticisms that are often raised in relation to thematic analysis, and identified the main concerns related to this study. These concerns and the ways in which they were managed in this context of this particular data analysis process are clarified in Table 8 below.

<i>Concern</i>	<i>How Concern was Managed in this Study</i>
Thematic data analysis can be criticized for losing the interactive quality of the focus group data in the reduction and coding of this data (Grix, 2010).	Integrating quotations from the participants' own accounts in order to portray –verbatim- their engagement with the research issues and the progressive construction of meanings and development of themes occurring throughout the sessions.
The importance of giving consideration to the role of the researcher making interpretations regarding the data (Silverman, 2006).	<p>The researcher was reflective and reflexive in the data analysis process, making sure that the meanings and interpretations that were developed did not merely represent personal understandings of the data separate from the participants' understandings of the research issues, or vice versa. Instead, the researcher sought to ensure that the data;</p> <p>a) re-presents the constructed realities that the participants and the researcher had collectively developed in the data generation process</p> <p>b) is interpreted within its particular context whenever applicable.</p>
Overlooking irregularities in the data that do not fit into a specific category (Coffey & Atkinson, 1996)	The researcher recognized that such data could be signifying important findings. The aim was therefore not to dismiss any data that did not fit into one particular theme, but rather to look for ways to understand it within its wider context.
The importance of keeping track of theme development and the ways in which the data starts to make sense and to be interpreted (Lapan et al., 2011; Silverman, 2006).	The researcher kept written record of personal reflections, and of decisions concerning the coding process, the emerging relationships between data, and theme development.

*Table 8: Addressing Potential Concerns of Thematic Data Analysis*

## **7.5 MANAGING POTENTIAL FIELDWORK LIMITATIONS AND CHALLENGES**

The flexibility of the study design implied that certain aspects of the fieldwork might need to be modified in order to be responsive to the developing study and the particular contextual dynamics (Merriam, 2009). The researcher sought to think ahead of some of the potential challenges that might be faced and the ways to manage them. A few examples below illustrate this process;

- The study design had to consider possible difficulties in terms of maintaining consistency of participant profile in the focus group sessions, as participation would be voluntary. Problems with inconsistency in qualitative fieldwork are cited by several authors, such as Barbour & Kitzinger (1999) , Barbour (2007), and Bryman (2008). They indicate that often the group composition may be the result of circumstance rather than planning, and that this should not be considered as a weakness of the method but rather as a natural consequence of voluntary participation. Nevertheless, it was important to maintain a flexible approach in the planning phase for the focus group sessions and the fieldwork process in general, guided by the inherent flexibility of this study. The researcher took into consideration the potential contextual issues that might be faced when organizing the focus groups, such as youth or sustainability event dynamics, venue and timing of sessions, the bureaucracy of networking with universities, and the level of interest of the student body in different universities.
- Applying a very structured approach and a strict questioning scheme to focus groups might limit the discussion to specific themes or might not be relevant to the group's interests or concerns (Barbour, 2007). Therefore, the flexible design accounted for important group dynamics that could emerge in different sessions. These included; a) the level and depth of interaction

among the group members (managed by probing questions and envisioning activity, respectively); b) the clarity in which different members express themselves verbally or linguistically (managed by ensuring clear questions tailored to the participants' English fluency, and by keeping moderate pace of discussion); and c) the possibility of some members not fully taking part in the discussion (managed by addressing these participants in person for the main leading questions, asking them for their opinion or feedback regarding another participant's perspectives, and reminding participants that the study is interested in a diversity of opinions and experiences).

- The researcher aimed for a range of 8-15 participants per focus group session. However, considering the inevitable practical constraints of fieldwork (Blaikie, 2000; Schwandt, 1998), voluntary participation meant that such practical constraints of focus groups cannot be completely controlled. For example, in the actual fieldwork, one focus group session had 5 participants whereas another had 20 participants.
- The important role played by the researcher in the data generation process is a central concept in the critical constructivist epistemology (Guba & Lincoln, 1994, 2004). It was therefore important to consider and manage the researcher's biases along the two fieldwork phases. The researcher tried to recognize and acknowledge personal influences<sup>165</sup> over the research through a process of reflexivity. This entailed considering the researcher's own personal assumptions and perspectives that may have influenced the progression of the fieldwork and the data generation and analysis at the time of facilitating the interactive discussions and interpreting the findings.

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<sup>165</sup> While it is not possible to entirely remove this influence, it is essential to be aware of it and try to manage or reduce it where possible.

### *Criticism of Focus Groups*

A common criticism of focus groups is that they tend not to reflect the reality that they claim to capture. Some researchers doubt the 'naturalness' of focus groups and thereby their applicability to real life situations, claiming that the organized setting of a focus group hinders a real understanding of the actual situations or themes being studied (Barbour & Kitzinger, 2007; Wilkinson, 2003). However, this critical interpretivist approach aims to explore the participants' engagements through a process of social knowledge construction, rather than fixed attitudes and perspectives in a fixed reality. The study recognizes that the participants' understandings and actions are shaped by their personal experiences and understandings and overall social and contextual setting (Blaikie, 2000; Krueger & Casey, 2000). The discussions between the participants on climate change and well-being, albeit in an organized setting, would nevertheless be valuable in revealing these socially constructed understandings and interpretations (Myers & Macnaghten, 1998). In fact, it is the interaction and dialogue emerging from the focus group setting that elicits the valuable research findings. Furthermore, the often natural and spontaneous discussions that develop in a focus group setting are often similar to those occurring in a usual social setting, and reflect a similar reality, which, based on interpretivism, is also collectively interpreted. For example, Myers and Macnaghten (1998) state that; *'even under these relatively artificial conditions [a one off focus group], we saw important aspects of talk that are glossed over in surveys and even in interviews; there is every reason to think that they have implications of the way people talk about the environment in pubs and markets and buses'* (p.351)/

Another criticism of focus groups is the concern over power issues in a focus group setting, claiming that certain participants might dominate the discussion and overshadow others; which might impact the type of data generated (Krueger & Casey, 2000). This would constitute a weakness to the objective of the focus group discussion of eliciting the interaction of a diversity of ideas, perspectives, and themes surrounding the research issues. Therefore, it is important to keep in mind

that not all participants are as vocal and opinionated as others, and to address such concerns by making sure that the all participants have a chance to speak out. Techniques that were used in this study included addressing certain participants by name or asking them direct questions, continuously reminding the group of the study's interest in a diversity of perspectives and emphasizing the contribution of all participants, and stressing anonymity and confidentiality of shared information (Flick et al., 2004).

In addition, some researchers are concerned with the possibility of participants eliciting spur-of-the-moment or spontaneous responses which might not reflect their genuine perspectives concerning the research issues. However, this also conflicts with the held constructivist perspective, in which the participants' dialogic interactions co-create the data on their engagement with climate change and well-being. Group interaction develops a sense of security among the different participants, as they are encouraged to express their views and share their experiences within a flexible and friendly group environment. It also enhances the spontaneity of responses, as participants become vocal when interested in a theme, triggered by a comment, or reminded of a personal experience (Flick, 2009). Participant spontaneity is important for a coherent and comfortable flow of discussion and for the expression of the participants' natural perspectives. Nevertheless, it was important for this study to ensure that such interaction takes place naturally and effectively, and elicits meaningful discussions. Reflective techniques such as envisioning were applied for this reason, aiming to promote the participants' critical thinking and personal reflection to enable an in-depth dialogue (Tilbury & Wortman, 2004).

Finally, it is important to consider the fact that the data generated from a particular group cannot be separated from that group and the group dynamics (Morgan, 1998). However, the general aim of the study is not to generalize the findings concerning youth engagement with climate change and well-being. Rather, it aims to critically explore various levels and forms of such engagement in different settings. Hence,

the uniqueness of each focus group context and setting would serve to enhance the richness and diversity of knowledge generated within particular contexts.

### *Criticism of Interviews*

A common drawback of qualitative interviews is the constraint imposed by language, where the type and tone of questions asked may influence the interviewee's responses (Bryman, 2008). This is taken into consideration in the fieldwork conducted in the Netherlands and South Africa. The interview guide is developed to maintain coherence towards answering the key questions that the study is investigating, and the researcher focuses on listening to take cues from the participants' responses and follow-up with relevant probing questions. Another concern revolves around the researcher's personal biases and interpretations. However, as repeatedly emphasized throughout this thesis, this contradicts with the study's constructivist perspective and the focus on co-creation of meaning between researcher and the interviewee. Also, researcher bias is reduced through reflexivity.

## **7.6 RESEARCH ETHICS**

This study takes consideration of research ethics with the aim of safeguarding the participants as well as the value and contributions of the research itself (Maxwell, 2005). The study has aimed to maintain research ethics through applying various strategies and procedures, which were formally delineated prior to the fieldwork, in the research degree proposal<sup>166</sup> submitted to the Research Committee of the University of Gloucestershire. The proposal outlined the main ethical considerations which had to be maintained throughout the research process. Upon getting the ethical approval from the University, the researcher developed the ethical forms for participation and initiated contact for starting the fieldwork phase. The Research

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<sup>166</sup> RD1 submitted in June 2010

Ethics Handbook of the University of Gloucestershire (University of Gloucestershire, 2008) was useful in guiding the management of these ethical considerations, which entailed the following;

**Free and Informed Consent;** As a precondition for participation in any research, it is necessary that potential participants fully understand the nature and aims of the research and the ways in which they would be involved. This would enable them to make an informed decision for voluntary participation (Fisher & Anushko, 2008). In the context of this study, the researcher prepared an Information and Ethical Consent Form<sup>167</sup> which provided the research participants with the following details; a) the background and aims of the research; b) the duration, setting, and main methods of the session; c) that participation is voluntary; d) the right to withdraw at any time from the research; e) the extent of privacy and confidentiality; f) the use of a voice-recorder upon consent of all participants in the session; g) the contact details for any further inquiries regarding the research ethics or the research findings.

The Information and Ethical Consent Form was presented to all participants in the focus group and interview sessions for them to read, approve, and sign. The researcher also explained to the participants that she was aware and respectful of their right to withdraw at any time during the session, and asked for their approval for the use of a voice-recorder during the focus group discussion. The researcher also clarified to participants how the information from the session would be used, and ensured privacy, confidentiality, and anonymity, explained further below.

**Privacy, Confidentiality, and Anonymity:** In addition to the Ethical Consent Form, which stated respect for the anonymity and privacy of the participants and the confidentiality of information, the researcher personally re-stated these issues at the beginning of each session. All participants were also assured that random names would be assigned in order to maintain anonymity, and that collected data would be safely stored for maintaining their confidentiality and prevent unauthorized access.

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<sup>167</sup> Appendix 5

Furthermore, the researcher explained that she could be contacted with any inquiries from participants interested in the findings of the research.

An Information and Ethical Consent Form<sup>168</sup> was also used in the interviews with youth and key informant groups. The form was either completed immediately after the meeting or later through online correspondence.

Finally, the researcher maintained a moral obligation throughout the study to continuously make sure that the design was appropriate for answering the main research questions. The researcher also aimed to maintain a systematic and meticulous process of data documentation, analysis, and reporting, in order to safeguard the truthfulness of the research and the validity of the findings. From an ethical perspective, a sound and adequate research design implied an adequate and relevant methodology and applicable research methods. It also implied that the researcher's role in the research process would be clear and reflexive (Radnor, 2002). Accordingly, the researcher decided to conduct a pilot study in order to identify any required adjustments to the research design and methods prior to undertaking the actual fieldwork with participants.

## **7.7 RESEARCH QUALITY AND VALIDITY**

It is essential to demonstrate the quality and validity of this critical interpretivist research for safeguarding its value for informing policy and practice on youth engagement with climate change and well-being. It is also important for contributing to the field of social science and climate change/sustainability research. Addressing issues relating to quality requires explaining the rationale and strategies for data collection and analysis. Validity mainly relates to the precision of the research findings (Ritchie & Lewis, 2003), or as stated more clearly by Hammersley (1990;

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<sup>168</sup> Appendix 6

p.57); "*the extent to which an account accurately represents the social phenomena to which it refers*". Clarifying the theoretical and methodological alignment and the research progression in two different country settings helps validate the research approach undertaken and demonstrate its applicability in the context of this study.

Validity remains a highly debated topic with not one unified procedural perspective (Creswell & Miller, 2000; Guba & Lincoln, 2004). Several researchers have developed their own concepts of validity and proposed terms that they consider to be more appropriate for qualitative research, such as trustworthiness (Guba & Lincoln, 1989; Seale, 1999); understanding (Maxwell, 1992; Wolcott, 1994); and quality (Davies & Dodd, 2002). Several interpretivist researchers (e.g. Duke, 2010; Evans, 2011) have chosen to emphasize the trustworthiness of their studies rather than validity, which they tend to associate with scientific and experimental studies. Trustworthiness is the extent to which the generated data and the data analysis are believable and trustworthy. Demonstrating the trustworthiness of the research findings renders the study more plausible by going beyond the researcher's own perspectives and assumptions to clearly display the research arguments and processes that have led to the generated findings (Stringer, 2007). It brings clarity and credibility to the findings and interpretations. Guba and Lincoln (1989) and Creswell (2007) suggest that the trustworthiness of qualitative research can be demonstrated by addressing criteria regarding credibility, transferability, dependability, and confirmability. These four strategies in turn utilize criteria such as reflexivity, triangulation, and rich descriptions. In the context of this interpretivist study, some strategies are more applicable than others. For example, transferability, which is analogous with the generalizability of the research findings, is not directly applicable within the held subjectivist and contextual perspectives and in-depth data. Accordingly, taking into consideration these four strategies, this study is guided by Maxwell (2005) who suggests that the researcher examine the specific validity threats that apply to each particular inquiry process, and develop strategies that can adequately manage such threats. Table 9 demonstrates the main validity and quality

threats that have been identified for this study (guided by the four trustworthiness criteria), and the strategies devised to best deal with them. This is followed by a more thorough explanation of these different validation strategies used in this study.

<b><i>CONCERNS TO QUALITY AND VALIDITY IN THIS STUDY</i></b>	<b><i>STRATEGIES TO MANAGE CONCERNS</i></b>
<i>Credibility</i> ; extent to which data are believable and trustworthy (Greenwood and Levin; 2007)	<ul style="list-style-type: none"> <li>- Triangulation of research methods</li> <li>- Thick descriptions</li> <li>- Prolonged engagement</li> </ul>
<i>Transferability</i> ; extent to which findings can be generalized or transferred to other contexts or settings. In this study, the subjectivity of the researcher and the strongly interactive, contextual, and in-depth data generation and analysis process implies that developing context-relevant statements <sup>169</sup> is more applicable.	<ul style="list-style-type: none"> <li>- Thick descriptions detailing;               <ul style="list-style-type: none"> <li>The research methods</li> <li>The research settings</li> </ul> </li> <li>- Identifying researcher's assumptions</li> </ul>
<i>Dependability</i> <sup>170</sup> ; extent to which research findings can be replicated with similar participants in a similar context. This is problematic in this interpretivist study which is highly contextual and dynamic and incorporates multiple interpretations and realities and inter-subjective co-construction of meaning. In the context of this study, dependability relates to demonstrating the consistency of results with the data collected (Merriam, 2009).	<ul style="list-style-type: none"> <li>- Clarify the theoretical orientation and personal assumptions guiding the study</li> <li>- Triangulation of research methods</li> <li>- Thick descriptions: Detailed explanation of data collection process</li> </ul>
<i>Confirmability</i> ; extent to which research findings can be confirmed or corroborated by others. It is analogous with objectivity, which	<ul style="list-style-type: none"> <li>- Researcher Reflexivity</li> <li>- Documentation/Archiving of all fieldwork material related to data</li> </ul>

<sup>169</sup> This study does not claim to make generalizations; hence does not seek to demonstrate 'transferability' as it applies in the above definition. It rather seeks to provide a thorough description of the research context and central assumptions guiding the inquiry. This would help guide others in identifying areas of relevance to their particular research aims and setting.

<sup>170</sup> "Emphasizes the importance of researcher accounting for or describing the changing contexts and circumstances that are fundamental to the consistency of the research outcomes" (Thomas, 2010;p.31)

does not apply to this subjectivist and relativist study approach. Rather, the researcher seeks to identify personal biases and subjectivity in the inquiry process (Seale, 1999).	collection and analysis
<i>Researcher Bias</i> ; Personal Influences of the researcher on the inquiry process.	<ul style="list-style-type: none"> <li>- Transparency<sup>171</sup></li> <li>- Reflexivity</li> <li>- Research Journal</li> </ul>

*Table 9: Addressing Concerns to Quality and Validity*

### *Prolonged Engagement*

The prolonged engagement and persistent observation in the field add to the validity and credibility of the research by "*building trust with participants, learning the culture, and checking for misinformation that stems from distortions introduced by the researcher or informants*" (Creswell, 2007; p. 207).

The fact that the researcher spent a considerable length of time in each of the two study countries (3 months in South Africa, 2 and half months in Netherlands), enabled a more active involvement with the overall research setting. The long and repetitive engagement in the field helped develop an in-depth understanding of the research issues in each particular context, which was particularly important in this interpretivist study. Understanding the culture and overall context was key to understanding the participants' experiences, accounts and the generated data. It also enabled the identification of premature ideas or assumptions which the researcher might have developed at early research phases (Maxwell, 1998). Moreover, this prolonged engagement helped the researcher build a trustworthy relationship with the research participants (Creswell & Miller, 2000; Merriam, 2009), which facilitated the interaction and cooperation for the study. This was particularly applicable during week-long youth and sustainability events, where the researcher had the chance to network with the youth participating in these events, get to know

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<sup>171</sup> Declaring the researcher's interests and position at the start of thesis.

them personally, and hold side conversations with them. This further solidified the understanding of the active and interactive dimensions of the youth's engagement and the overall contextual setting.

### *Thick Descriptions*

Thick descriptions entail the detailed description of the research process, including the data collection process and analysis, the overall research procedures and settings, and the researcher's interpretations (Ritchie & Lewis, 2003). Thick descriptions provide richness and detail regarding the study participants and the setting. They help the reader understand the progression and the context of the research process (Creswell, 2007), and allow them to make decisions regarding transferability (Guba & Lincoln, 1989; Merriam, 2009).

In writing up this thesis, the researcher sought to share the research experience with the readers in order to present a clear and honest portrayal of the different stages of the research, in each of the Dutch and South African settings. This was achieved through detailing the following descriptions throughout the thesis:

- Clarifying the conceptual thinking and personal assumptions guiding the rationale for the inquiry process
- Describing the various dimensions of each of the Dutch and South African research settings, including the geo-environmental, academic, socio-cultural, and political contexts relevant to the research themes.
- Detailing the circumstances behind the data collection process, the dynamic procedures of the fieldwork (participation, networking observations events, etc), and the challenges that were faced throughout.
- Presenting excerpts from the researcher's journal, which demonstrate the critical and reflective thinking throughout the research process, and further enriches and contextualizes the writing process and the research descriptions.

Therefore, thick descriptions not only added to the trustworthiness of the research but also provided a contextual element to help other researchers evaluate its applicability in other contexts (Lapan et al., 2011).

### *Triangulation*

Triangulation involves substantiating evidence from different data sources in order to overcome problems related to bias and validity bias (Blaikie, 2000; Creswell, 2007). Triangulation utilizes multiple data sources and methods and diverse informants to gather multiple and diverse perspectives regarding a research issue. The multiplicity and diversity attained helps uncover biases, increases the confidence in the research findings, and enables a more complete and comprehensive understanding of the themes being investigated (Patton, 2002). For instance, Creswell & Miller (2000) describe triangulation as; “*a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study*” (p. 126).

Focus groups, interviews, participant observation, and document review each have their own strengths and weaknesses<sup>172</sup>, and the decision in this study to undertake methodological triangulation was to help offset the limitations posed by each method on its own (Silverman, 2006). Triangulating the research methods assisted in generating a diverse data set which addressed the different research questions adequately. Focus groups and interviews generated data interactively and through the collective constructions of the participants' subjective accounts. Participant observation generated practical data on the participants' engagements as well as reflective data on the researcher's critical observations. Finally, document review generated factual, objective, as well as contextual data.

Accordingly, triangulation ensured a practice of good research (Bloor et al., 2000), enabling a more comprehensive understanding and interpretation of the participants' engagement with climate change and well-being. It enabled the exploration of the

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<sup>172</sup> Refer to Section 7.4

participants' inter-subjective meanings of climate change and well-being, and relating these meanings to their social structure and overall context (Silverman, 2005).

However, criticisms of applying triangulation in interpretivist research have mainly revolved around the loss of context as alternative meanings are derived from different methods, and that triangulation signifies assumptions of an underlying objective reality (Silverman, 2006). In the context of this study, the aim with triangulation was not to check the validity of the participants' accounts against an external reality, but rather to arrive at a more comprehensive and valid understanding of their engagement with climate change and well-being, through the diversity of data that the different methods would provide. Furthermore, triangulation meets with the held constructivist epistemology in this study, which values the acquisition of multiple and diverse realities regarding the youth's engagement in the Dutch and South African settings. Engaging multiple data sources leads to a more valid, reliable, and diverse construction of such realities (Johnson, 1997).

#### *Enhancing Quality By Applying Reflexivity*

A study undertaking a critical interpretivist approach recognizes the researcher as a key instrument in the overall research process. It cannot be totally value-free and objective, as the researcher's personal assumptions and understandings could influence the data generation and analysis and the overall approach to the study (Merriam, 2009). Accordingly, researcher bias is inevitable in this critical interpretivist study (Creswell, 2007; Johnson, 1997), necessitating that reflexivity be applied in order to manage personal biases. Applying a strategy of reflexivity implied that the researcher recognize and manage their own contribution to the understandings generated, and trace their own conceptual development regarding the research themes. Thus, reflexivity in this study is less concerned with creating

objectivity but rather with understanding and acknowledging the "*inter-subjective creation of meaning and understanding*" (Angen, 2000; p. 383).

In this study, the direct engagement with participants required that the researcher systematically and critically reflect upon her role in influencing the data generation and analysis process. For instance, in facilitating the data collection sessions<sup>173</sup>, it was important to consider the researcher's influence on; a) constructing the data with the participants in the interactive discussions, b) potentially guiding participants towards certain themes or discussion topics concerning climate change and well-being, and c) the implications of such influences on the resulting interactions, theme development and generated findings. Furthermore, the potential subjective influence is not only related to the social interactions taking place between the researcher and the participants in the data collection sessions. Other important influences could be the analytical task undertaken throughout the critical exploration of contextual and power dynamics, and the personal understandings or pre-suppositions that the researcher might have developed through prior reviews of literature (Maxwell, 2006).

The researcher managed such potential influences by taking time at the beginning of the fieldwork phase and throughout the preparation for the data collection sessions, to think about the ways in which she could possibly influence these processes through her biases; thereby acknowledging such biases prior to the immersion in the fieldwork sessions. The researcher sought to base the facilitation scheme for the focus group discussions on the main research questions and objectives, rather than on her personal assumptions or beliefs. The researcher tried to undergo reflexive

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<sup>173</sup> It is also important that the researcher develop interactive skills for interviewing and focus group conduction. Skills for interviewing gained through previous Masters degree fieldwork; skills for focus group facilitation developed through researching the topic, through attending external sessions to familiarize with the practicalities of the process, and through conducting a pilot study, explained in Section 7.3

thinking and practices to recognize and understand her possible influence on the research, thereby allowing her subjectivity to emerge and be adequately managed.

This helped avoid a direct influence from the researcher on the participants' accounts and perspectives regarding the research themes. For example, throughout the fieldwork phase, the researcher tried to be reflective and reflexive about her own perspectives and beliefs which might influence the facilitation process of the focus group and interview discussions. The researcher tried not to state her personal views and not to pre-categorize or analyze the data during the data collection session. In this last point, the aim was to keep focus on the participants' own accounts of the research issues rather than assign early value judgments that might not reflect the true meaning of the data.

In addition, the researcher also sought to maintain, throughout the fieldwork and during the write-up phase, a strategy of transparent and rich descriptions that clarify the research process and recognize any personal influences (Radnor, 2002). The importance of theoretical and methodological transparency is highlighted by Coffey & Atkinson (1996) in terms of making explicit the theoretical stance from which data collection and interpretation takes place.

### *Research Journal*

Keeping a research journal (Creswell, 2007) was also an important technique for displaying the progression of the research journey and contributing to its trustworthiness and validity. With the constant development of this critical interpretivist study, the researcher documented the details of events and fieldwork progression, recorded personal observations throughout the fieldwork, and reflected on the progress of the research, the challenges faced and mistakes made, and the avenues for improving the next step. This strongly helped display the development of the researcher's thinking and continuous reasoning along the research journey. It constituted a persistent, consistent, and self-conscious documentation of the fieldwork process and the rationale of thinking throughout (Huberman & Miles,

2002). It also provided a forum through which the researcher could take a few moments off the hectic fieldwork schedule for reflection and personal writing. The following data from the researcher's journal describes the usefulness and value gained by keeping a journal;

*"The more I engaged in writing my research journal, the more I value it. It's like a critical thinking process where I can think about the research progression and plan ways to improve ideas and methods. It also helps me become more reflexive concerning my possible influences on the research process and ways to address them. I will try to be consistent in writing after every formal data collection session; whether focus groups or interviews with students or with KIG, or participant observation sessions." (Research Journal, 15 June, 2011)*

Finally, the quality of this study is enhanced by ensuring the coherence and alignment of its conceptual and methodological perspectives, discussed further below.

#### *Enhancing Quality By Ensuring Conceptual and Methodological Alignment*

The quality of this study is further enhanced by demonstrating, throughout this thesis, the conceptual and methodological coherence of the research process. This entailed continuous reflection on the interlinks between the research questions, conceptual framework, and fieldwork progression. It also required critical examination of the soundness and relevance of decisions taken at every step in the research process, including the research design, data collection, and analytical framework (Lapan et al., 2011; Radnor, 2002).

Primarily, the researcher sought to attain a solid understanding of the theoretical and practical considerations that had to be followed by committing to a critical interpretivist philosophical approach, and the ethical dilemmas involved in engaging in research. Therefore, prior to initiating fieldwork, the researcher conducted in-

depth reading and preliminary writing on a) the interpretivist research paradigm, b) the constructivist epistemology, c) the critical perspective within critical social theory, d) the qualitative research design and methods, and e) research ethics. This enhances the research quality by clarifying its overall conceptual and methodological rationale. The rationale guided the research framework towards research questions that are exploratory and seeking subjective and situational understandings; research design that is dynamic, flexible, contextual, and ethical; different data collection methods that are interactive, in-depth, and exploratory; and data analysis and interpretation that is inductively thematic, contextual, and valid.

Furthermore, the study ensured consistency between the two fieldwork settings by developing a central fieldwork plan that was based on the key research questions and underlying perspectives. Specific background research was also conducted on each of the Dutch and South African countries to become acquainted with the research settings and the contextual issues that might arise (Radnor, 2002). The flexible and interactive fieldwork process sought to attain a wide diversity of socio-demographic and academic backgrounds of participants to meet the aimed multiplicity of subjective understandings, experiences, and realities (Creswell & Miller, 2000). Finally, the study also sought to ensure that the Dutch and South African contexts are also taken into consideration throughout the inquiry process. The study was therefore designed to account for the diversity of settings and contexts within each of South African and the Netherlands. For instance, the researcher visited different areas and provinces in each country to explore the voices and experiences of youth in various communities and universities. In another example, accounting for contextual dynamics implied managing the research design in relevance to the timings of existing events in each country; or to manage the time frames which are most appropriate for the university students (not exam time or semester break)

# **CHAPTER 8. RESEARCH FINDINGS**

## **8.1 INTRODUCTION**

The study findings are presented within three main areas of youth engagement encompassing multiple inter-related dimensions and contextual influences. Section 8.2 discusses the findings regarding participants' perceptions of vulnerability and control with regards to climate change and sustainability issues. Section 8.3 discusses findings on participants' perceived efficacy; Section 8.4 on participants' agency. The researcher pays attention to identifying distinct or un-widely shared findings, and to important contextual insights, within these findings.

## **8.2 PARTICIPANTS' PERCEPTIONS OF VULNERABILITY AND CONTROL: SHAPED BY FINANCIAL AND TECHNICAL AUTONOMY; SHAPE THEIR VISIONS OF FUTURE CHANGES: SOCIO-POLITICAL STRUGGLES, TRANSFORMATIONS IN LIFESTYLE AND GOVERNANCE SYSTEMS**

The findings indicate a relationship between the participants' perceptions of risk and vulnerability to climate change, and their perceptions of control over its risks through financial and technical means.

### 8.2.1 Perceived Control Through Financial Means: Visions of Future Political Conflicts, Socio-Cultural Inequalities, and Long-Term Health Consequences

The majority of participants considered themselves to be safe against the potential impacts of climate change, associating their lack of vulnerability to their perceptions of financial security. Their discussions reflected greater concern over the widening gap between the rich, whom they considered to be safe from climate change, and the poor, whom they viewed as the disempowered victims.

#### **FOCUS GROUPS**

***"It hardly affects you. We have money to buy crops from other parts will be affected but us No."*** (FG NL8)

***"We have means to ignore and it doesn't affect us as much. There is general people who will suffer most but don't have power to change t***

#### **INTERVIEWS**

***"I am privileged, I have choices. If there's climate change in Johar survive without crops, can buy food. Others can't."*** (participant in SA e

Several participants expressed such concerns in their personal visions, in which they described the social inequities that they imagine taking place in a climate-threatened future.

#### ENVISIONINGS

*"The world I envision becomes increasingly polar. Rich people that spend money that's needed for their lives and on the other hand increasingly marginalized people especially in Africa; and arid lands and pollution will affect the poor, if we don't do anything about climate change now." (South African participant, FG SA3)*

*"I didn't draw problems...Governments, not just national but UN, will be super later with interventions. I see 2 sides: one surviving, the other surviving but not so well so I drew Africa. Lots of island victims of climate change, and picture of rich man with suitcase filled with money. People on bad side is because they don't have enough money to move to safer places. The good place is coincidence, because it's where you're born. So we are in Holland, having it relatively good." (Dutch participant, FG NL5)*

The main areas of concern amongst these participants addressed future inequalities shaped by the extent of financial autonomy over climate risks;

- **Visions of Political Conflicts, Power Relations Between Nations, and Socio-Cultural Inequalities**

Most participants who discussed future climate inequalities expressed concern over the future livelihood implications for impoverished communities as a result of increasing financial disparities in a resource and climate-threatened future, and the consequences of forced migration and the creation of climate refugees;

#### FOCUS GROUPS

***"I think there will be more invasion by powerful states to third world countries. Economic drivers will be more depending on climate for production and this will cause unrest and destruction...In the future we will have a world of conflicts caused by lack of resources." (FG SA6)***

***"If people can't feed their children or if there's war over***

A few participants criticized current capitalistic economies as impeding real sustainable change in society and disempowering poor communities from changing their living circumstances towards better possibilities;

**FOCUS GROUPS**

***"As we see in America, capitalism will be more important. If a big area floods, government will ask is it***

- **Visions of Long-Term Health Consequences**

Overall, most participants associated the health risks of climate change with poor communities and expressed no personal concern as a result of their financial autonomy;

**FOCUS GROUPS**

***"I think of health of people in developing countries, especially because I'm not I live here, I can buy my own food and eat what I want...If you would be doing more concerned on climate change risks national or international, my answer is local problems." (FG NL5)***

**INTERVIEW**

***"We sit in high income bracket, so we don't worry about our own health in our mind...It might impact where we go on holiday." (INT SA8)***

The few participants who discussed the long-term health impacts of climate change varied in the nature of their concern between the Dutch and South African settings.

A small number of Dutch participants who expressed concern over the health threats from climate change mainly discussed the indirect implications at wider social and national levels rather than the direct consequences to their personal health. These themes emerged in only a few particular groups, as shown below.

### **FOCUS GROUPS**

**People's physiological capability to adapt to environmental changes;**

***"There might be differences in environmental conditions than what people are adapted to; such as in pests or different breeding brands for different bacteria " (FG***

In the South African data set, concern over personal health risks from climate change was expressed by a few participants in particular focus group sessions. These participants tended to associate the possibility of health threats to their socio-economic status and the surrounding environmental setting, as for example the ensuing threats of environmental deterioration in their communities (such as respiratory illnesses from air pollution; diseases from water scarcity, pollution, and poor waste management).

### **FOCUS GROUPS**

***"I have asthma and it will get worst, will be like HIV now. We will be like AIDS; because it's internal, respiratory problem...We will go hungry who just shop for everything; we rely on primary resources not tertiary resources. If rain can take it away." (FG SA8)***

### **INTERVIEWS**

***"I'm worried about asthma, air pollution from industries, also leukemia near the refinery have asthma." (INT SA5)***

***"I think there will be more droughts which will lead to famines and infrastructure survive? Hospitals might not be fully equipped to handle a strong disaster management team in KZN." (INT SA7)***

This highlights the important role played by contextual factors such as the participants' socio-demographic background and the area in which they live in their sense as well as circumstance of vulnerability to climate change, as further discussed in Section 9.2.1.

#### **8.2.2 Perceived Control Through Technology: Visions of Transformations in Future Lifestyle and Governance Systems**

The level of trust in science and technology emerged as an important factor influencing the participants' feelings of control over climate risks, and subsequently their sense of vulnerability and future visions. Most participants expressed complete trust in science and technology to manage any potential climate impacts, and

indicated their lack of concern over their personal security or health. This mainly emerged amongst the Dutch participants.

### **FOCUS GROUPS**

***"I feel optimistic. In 20, 30 years technology would give us tools to control the situation through technology." (FG NL2)***

***"If I stay here in the Netherlands I feel safe about my future because I came up with water works and protection...So we will not drown I'm not are living below sea level." (FG NL4)***

### **INTERVIEWS**

***"I'm not worried about floods, cannot relate to it. Our government is are very well prepared to deal with climate change. We have dikes flood or when a dike breaks, we don't say it's climate change, we sa operate it well...it's because the dikes are too weak and we blame nature."***

A few other participants' discussions on technology highlighted a different perspective in which they expressed concern over the impacts of climate change on their personal lives. Certain contextual influences appeared within these findings. For instance, shared concern amongst the Dutch participants over the unpredictability of climate risks only emerged in FG NL3 held in Rotterdam, which as stated in Section 5.2.2 is at continuous risk to sea level rise and flooding due to its geographic vulnerability.

### **DIALOGUE IN FG NL3**

***"I don't feel safe here in Holland with all the water around me...I'm from Rotterdam We're surrounded by water, it's difficult to manage, to control the dikes."***

***"You see lots of things happening in the world like floods***

Amongst the South African participants, such concerns were also expressed by a few particular individuals, which also demonstrates the importance of the youth's contextual setting in influencing their personal sense of vulnerability to climate change and perceptions of technological autonomy. For example, a South African participant in FG SA6, who is taking part in a poverty alleviation programme, discusses her dependence on natural resources and her future concerns due to the lack of access to education and to technologies which could improve her livelihood.

### **FOCUS GROUPS**

***"In 20 years to come, climate is still a big issue, changing every time, cannot predict. I also see myself***

Another example is the interview INT SA6 with a young South African university student living in a township in Durban, which captures her concerns of the effects of uncontrollable weather extremes and fluctuations on the community's ability to grow food and sustain livelihoods in the absence of direct technological solutions.

### **INTERVIEWS**

***"Durban is usually summer all year, now winter is so cold it felt like not in Durban....I worry, in few years with***

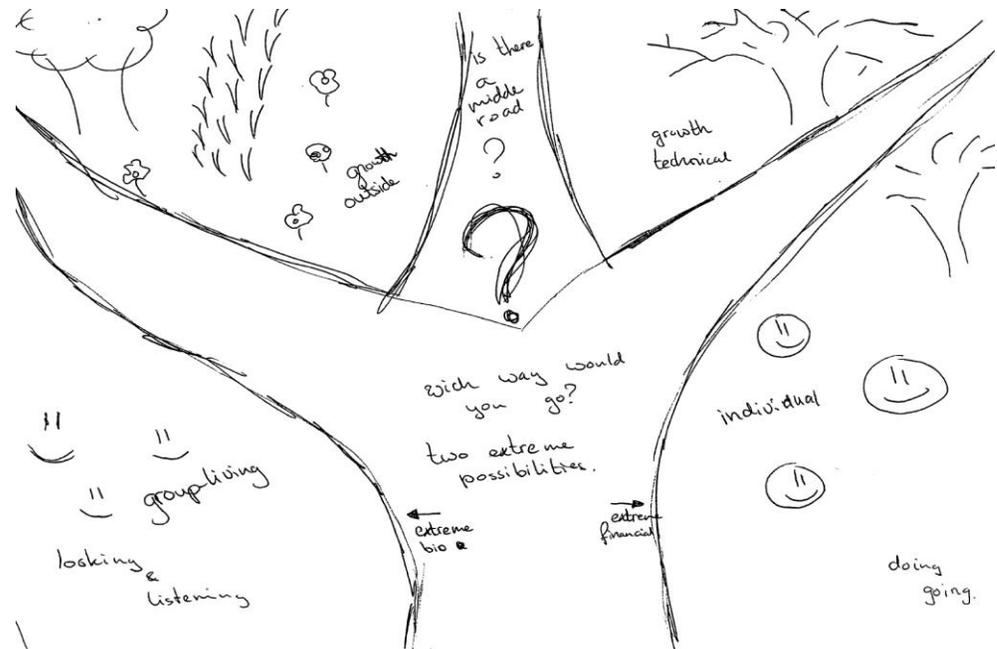
Finally, a few participants were sceptical of the long-term implications of complete dependence on technology in the future and expressed mistrust in science and technology;

### **FOCUS GROUPS**

***"We come up with advances that we think will completely solve the problem. For example most people stop drinking tap water and get bottled water; it's even more plastic to worry***

A similar perspective was expressed by a Dutch participant in FG NL1, who explained her vision regarding the two extreme pathways of development that she foresees for the future. She pondered the possibility for a middle road which would be centred around sustainability and is more moderate than the two extreme;

*"I thought about as a way of living, not how Holland would look like... I think there are 2 extreme ways we can go to live: Biological-living, climate neutral, really alternative and all together. Or other extreme to individuality, money, technical growth. There is a middle road coming, such as with electric cars, organic biological products, but I don't know if it will go further than where it is now. Will it develop, or won't we use it. That's my question. I'm looking for that middle road, but I don't know if it's really a possibility to be there."*



### 8.2.2.1 Visions of Lifestyle Changes

Another important theme emerging amongst the wide majority of participants is their visions of future changes in their personal lifestyles and in local governance systems, as illustrated below.

#### - *Incorporation of Technology into Daily Life*

The generated data highlight the participants' visions of changes in the functionality of their lives such as greater reliance on sustainable and efficient technology in everyday life. This theme emerged in almost every focus group and interview session held and was widely shared amongst the participants in these sessions.

## **ENVISIONINGS**

***"I see changes in our system of living. I think in around 10 years technologies will be more efficient ways for using electric power such as electronics that will be used in your house. Same as with water, there will be ways in which equipment will be used more efficiently." (FG NL7)***

***"I see the world still trying to introduce environmentally friendly water bottles and hybrid cars. There will probably be more inventions in the future." (FG SA2)***

## **FOCUS GROUPS**

***"Netherlands more sustainable...what will change in few years is the transport system because of increasing population and so increasing the need for transporting will differ...maybe might have completely different transport systems like with solar bike." (FG NL4)***

***"The way I live will change, equipment more adapted to efficiency. There will be more things that." (FG NL5)***

***"In 10, 20 years, move towards green economies, services such as education and health care will change behaviors." (FG SA6)***

Nevertheless, it is important to note that the data captured regarding complete trust in technology to solve climate problems emerged more extensively amongst the Dutch participants than the South African participants. This could be partly related to the Netherlands' focus on technical solutions and innovations for securing the country against climate change, as discussed in Section 5.2.2. This could also be related to contextual factors such as the multiplicity of challenges facing South African society, as captured in the following statements;

### ***PARTICIPANT-OBSERVATION***

***"Even if we want to invest money on technology for climate change, do we (our economy) have that much money...If people find out that government is spending so much money on climate research when people are***

#### **- Natural Adaptation**

A small number of participants regarded the observed changes in the environment as a natural process of life, placing their trust in society's natural capability to constantly adapt to change.

### ***FOCUS GROUPS***

***"We will reach a new equilibrium and humans will adapt to whatever is thrown at them. Look at all natural disasters and deaths, and then people will move on, same will happen with climate change. We will find a way around it, rebuild, maybe***

#### **- Rising Costs of Living**

A large majority of participants envisioned higher costs of living resulting from increased incorporation of technology into daily life and into production processes. They often discussed the importance of maintaining a certain standard of living in order to be able to afford the rising expenses.

## **FOCUS GROUPS**

***“Electricity will become very expensive if you buy from the government as they try to reduce their carbon footprint...Solar heating will also be an advantage of the situation.” (FG SA8)***

***“I will try to live more sustainably but I think it will be difficult mainly because long as there are so many options that are cheaper than the more-climate friendly options, I will use the cheaper options to live.” (FG NL1)***

## **INTERVIEWS**

***“Everything will become more expensive, huge increase in electricity, water level, we need to make sure we are in position to cope with changes and be able to afford to keep that standard of living because if we drop below that, it's too much money to buy food and it's so expensive.” (follow-up with participant in F)***

### ***- Increased Challenges on Natural Resources***

A few participants expressed concern over the challenges that future climate change would impose on their natural resource systems, and the need for technological innovations to substitute scarce resources.

### **ENVISIONINGS**

***“Effect on us whether we see it or not, because it's part of daily life water. We won't be drinking tap water because of shortages and it will require desalination. I am very likely to not want to visit Mpumalanga because of the loss of more biodiversity, places like Grahamstown and CapeTown which have become more extreme. This will impact our produce, and we won't have enough to eat. It will be expensive.” (FG SA2)***

***“We are running out of fuels. In 20 years we need alternatives to fossil fuel consumption. As this will affect us all, I hope the coming government will address this.” (FG NL2)***

### **FOCUS GROUPS**

***"Industries will be affected by either having to change to environmental friendly practices. Developing countries such as South Africa are affected most since they rely heavily through primary industry, farming or raw materials; that's the lifeblood of the country...Environment is very important for us." (FG SA4)***

Within this theme, a distinct finding emerging from the data captured with the South African participants entailed their concerns about the possibility of diminishing opportunities for future generations to experience nature as a result of the loss of biodiversity.

## **ENVISIONINGS**

***"Personally the greatest effect that climate change will have on me is the destruction of our beautiful environment...Loss of aesthetic value probably be our biggest issue." (FG SA6)***

## **INTERVIEWS**

***"The next generation will have different experiences with nature; the birds species because bird migration will change...There will be decrease in biodiversity such as the fynbos region." (INT SA6)***

***"The important point about climate change is the extinction of experience with nature, our children won't know it. We'll be unable to see certain species. The shoreline will be depleted and we can't walk on the beach." (INT SA10)***

### ***- Self-Sufficiency***

Many participants expressed their desire to live self-sufficient lifestyles in their future, such as living in energy-efficient houses and growing their own food.

## ENVISIONINGS

***"In my future I intend to be completely self-sufficient. I will be living i from Eskom. I will harvest my own electricity, grow my own food materials and educate my family on sustainability. I will create as little to preserve and improve the environment. But maybe this requires con  
"In the future I would like to live self-sufficient. I would use fruits a plastics, gas, and paper separately. I will raise my children to be less less meat, eat fish that is properly caught. I would buy fruits and vege  
(FG NL7)***

## FOCUS GROUPS

***"I hope I can afford to grow my own plants and eat from my own land priced more than I can pay, I will have to buy cheaper food that is n sustainable as I can." (FG NL1)  
"Assuming nothing changes we will see social changes, have more sustainably in isolation...It's also a backlash from globalization." (FG S***

Within such visions and implications of future changes, participants often discussed the important role of government in supporting and advancing such technological investments and solutions, not just at the corporate or industry level, but also in terms of policies and strategies that can facilitate and promote such lifestyle changes, as further illustrated in the below finding.

### ***8.2.2.2 Visions of Transformation in Future Governance***

The majority of participants' visions of future changes in governance systems projected stricter policies and legislative limitations and taxation on resource use, as illustrated below.

**FOCUS GROUPS**

***"There will be more rules; I envision two paths of political orders. More things will be scarce, so more rules, hierarchal structures, and constraints for people as the government tries to organize everything. So some places will have a totally different form of organization, locally based decontrol: people in their communities will***

Another widely-held perspective was the participants' emphasis on the provision of legislations that can support and facilitate society's transition towards sustainability. Several themes were widely shared amongst the Dutch and South African participants regarding the role their government should play in this process; themes regarding food and agriculture, transport, energy efficiency, and taxation systems. Other themes emerged distinctly in particular country data sets, as demonstrated further below.

## **FOOD AND AGRICULTURE**

*"The choice between organic and not organic is now the big difference it's a big step to buy organic food...Gov should subsidize organic food, who normally wouldn't afford it can buy. This will make more farmers all consumer driven." (FG NL2)*

*"At COP17, a key issue to be addressed needs to be agriculture, there and lots of problems with food security and distribution, and this change" (SA quest 2)*

## **TRANSPORT**

*"With transport, we need to be realistic, because people won't give up find a way to make sure it's not polluting. In Eindhoven there's now takes energy to make. Government should invest more in such renewable*

*"Government needs to focus on public transport. Here it's very un public transport is more efficient and sustainable. Here it is creating will be worst...If we have subway between Pietermaritzburg and D sustainable and cheaper." (FG SA7)*

## **ENERGY EFFICIENCY**

*"Dutch people are rich and have lots of savings; Investing in your option more encouraged in Netherlands. But now people are not always because it's still high costs. We need subsidies." (FG NL7)*

*"Policies that help sustainability will also alleviate poverty, electricity and not enough to supply all. Improving electricity supply and efficiency only help sustainability and climate change in long run but it's all country ...These things often overlap." (FG SA6)*

## **TAXATION AND SOCIAL LIVELIHOOD**

*"There's a lot of law to protect the physical environment but no law utilize the environment for a living. For example there's a law to not protect people who need to cut trees to make a living...No law environment" (FG SA10)*

- **Distinct Dutch Theme: Long-Term Policy Visions**

The majority of Dutch participants discussed the need for long-term policies and visions that prioritize sustainability and integrate it into central decision-making;

***FOCUS GROUPS***

***“Sustainability as a standard, not as something that will cost money or that is always seen as negative and as always asking for more attention and more money and distracting from the main policy. It should be the main policy. Not as an explicit policy but intrinsically part of every decision that you make, one of these decision criteria should be what is the environmental impact.” (FG***

Nevertheless, a few Dutch participants expressed their support of their government's approach in its focus and prioritization of economic rather than sustainability issues, hence seeing economic and sustainability themes as separate rather than interconnected;

***FOCUS GROUPS***

***“But maybe green is not high enough on agenda because some things are more important than green at this moment. Economic crisis, people losing their houses, jobs...I understand that green is important but we have***

- **Distinct South African Theme: Policy Prioritization and Enforcement**

The majority of South African participants discussed the need for prioritization of green issues within government performance and legislation, and for proper implementation of environmental policies that protect their natural resources and invest in green technologies.

### ***FOCUS GROUPS***

***"We don't need more environmental policies, we have the best. What we need is implementation. Not enough people to get it enforced and not enough resources for government to spend money on people to go monitor. Implementation and the government getting on board"***

However, a few South African participants held a different perspective supporting the government's focus on priorities for economic development and social welfare;

### ***INTERVIEWS***

***"Too many problems in South Africa now; hunger and fear of unemployment are dangerous because they can"***

- **Distinct South African Theme: Positive Climate Change Impacts in Africa**

A small number of South African participants considered that over the long-term, climate change would pose greater challenges to rich countries which will have to deal with the loss of their natural resources due to overexploitation and with accumulating climate consequences such as increased pollution and health problems. They envisioned the African continent as the secure region over the long-term due to the abundance of and reliance on natural resources, and as the future hub for the emergence of new development pathways and technologies. The statements below demonstrate such perspectives;

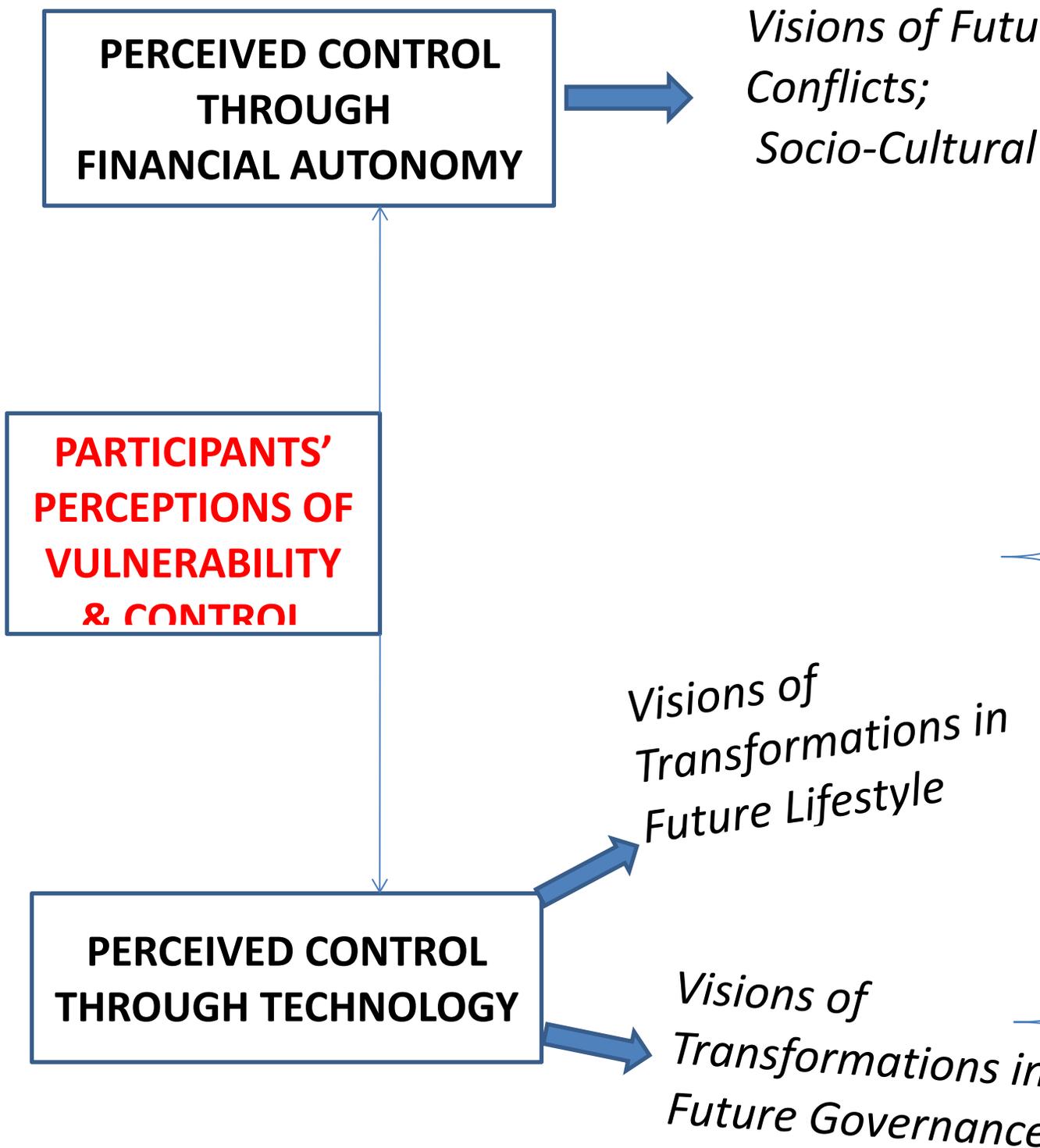
### **FOCUS GROUPS**

***"First people to feel climate change is us in Africa, but in the end the station because here temperatures will be very high and the first world (FG SA5)***

### **INTERVIEWS**

***"I feel positive about South Africa. There's small things happening change, I have more hope for South Africa than for developed countries livelihoods more directly dependent on our resources whereas in rich environment." (INT SA14)***

Figure 18 summarizes key themes on participants' perceptions of vulnerability and control.



*Figure 18: Key Themes on Participants' Perceptions of Vulnerability and Control*

### **8.3 PARTICIPANTS' SELF-EFFICACY: INFLUENCED BY PERSONAL AND EDUCATIONAL EXPERIENCES, SOCIO-CULTURAL FRAMES, AND COMMUNICATION APPROACH; INFLUENCES THEIR FORMS OF PARTICIPATION**

The data generated regarding the participants' self-efficacy concerning climate change and sustainability issues highlight interconnections with their personal, socio-cultural, and academic experiences, and the influence of perceived self-efficacy on participants' forms of participation.

#### **8.3.1 Personal and Educational Experiences: Influence Participants' Perceptions of Climate Change and Their Role As Agents of Change**

The study captured considerable data which suggest the importance of personal and educational experiences of climate-related events in shaping the participants' self-efficacy regarding climate change and sustainability issues. Such perceptions appeared to influence the participants' motivation to participate in action against climate change or in supporting sustainability initiatives.

##### ***8.3.1.1 Personal or Community Experiences of Climate Change Impacts: Motivation to Engage***

The majority of participants related their perceptions of climate change to their personal experiences. At one end, most participants perceived climate change as a

distant threat to which they could not relate in their personal lives, and expressed the 'need for a shock' through sudden climate impacts to make them realize its risks to their own lives and push them to more sustainable behaviours.

**FOCUS GROUPS**

***"I have not personally experienced anything concerning climate change, so I can't really relate to it...In South Africa people will realize and feel effect on them when something drastic happens in their lives; will only do something when***

A few also discussed the difficulty of relating to or prioritizing climate change in the absence of direct physical impacts as compared to economic circumstances which have a more immediate and tangible effect on their lives;

**FOCUS GROUPS**

***"Difficulty is that nature or environment is abstract, difficult to grasp. Social and economic issues are more***

At the other end, a few participants related their efforts to act in a sustainable manner to their experiences. They described their personal observations of local or global changes such as weather extremes or agricultural changes, and discussed the ways in which they are trying to influence small changes.

### **PARTICIPANT-OBSERVATION**

***"The last 2 years we had extreme winters we haven't had for years; there was floods, physical loss, infrastructure, and properties being damaged. I have not seen it personally it happened in other parts of the country and I think that's good enough to bring it up...That's why we're***

#### ***8.3.1.2 Upbringing and Surrounding Physical Environment: Belief in Personal Influence and Ethical Contribution***

A large number of participants discussed the role of their upbringing and surrounding physical environment in influencing their understandings and enthusiasm for environmental work and belief in their ability to make a change.

### **FOCUS GROUPS**

***"When I lived with my parents I got bothered when they used the car just for a drive or for eating so much meat. When I lived on my own I was able to make choice not to eat so much meat, to use the bike, to walk." (FG NL6)***  
***"What influenced my attitude on the environment is the***

Several participants also discussed the impact of their upbringing in instilling ethical considerations and feelings of responsibility to contribute to societal enhancement.

### **FOCUS GROUPS**

***“For me personally, I have been brought up from my parents to care about nature, and then when you see things you were brought to care about being destroyed, that’s when you fight. So now I’m volunteering as an activist with this international environmental organization...It’s my feeling of responsibility, as a world***

#### ***8.3.1.3 Educational Experiences: Understandings of Climate Change and Beliefs in Importance of Action***

The study captured data which indicate the influence of the participants' educational background on their understandings of climate change and their belief in the importance of taking action. Whilst a few participants related their sceptical views of climate change to their academic fields of study which presented different arguments to those offered by climate advocates, most discussed the ways in which their studies have enhanced their understanding of climate change science and impacts;

### **FOCUS GROUPS**

***"I don't believe we have to change anything. I think human influence ancient history and we study that ancient climate has always been changing and we are impacting a few degrees more and yes we should care not to make it worse but it already is. but maybe not." (FG NL5)***

### **INTERVIEWS**

***"General people are not dealing with the environment directly so they don't care, it is not significant, but we are researching these things, so for us, 1 cm is a lot, we need to do something about it." (INT SA4)***

***"I've learned about environmental management and also now working on it, recycle, use less water, because now I know. My brothers and friends are doing it, they have the same sense of responsibility. I see that link, they don't...The more I understand and believe that it's important to change." (INT SA5)***

### **8.3.2 Social and Educational Systems Promote Individualistic Values and Disconnected Thinking, and Influence Meaning Associated to Individual Contributions: Participants Discuss Importance of Reshaping Society and Reforming Education**

The generated data reflect the participants' criticism of current forms of education and social value systems which promote individualistic thinking and materialistic values. They emphasized the need for reshaping society through education and adequate governance systems which promote more holistic worldviews and environmentally-friendly behaviours.

#### **8.3.2.1 Current Social and Educational Systems**

The study gained insight into the personal priorities, perceptions, and values of some participants, which seemed to influence their willingness to engage in environmentally-friendly behaviour and the meanings they associate to their individual contributions.

#### **8.3.2.1.1 Individualistic and Materialistic Values: Reluctance to Change Lifestyle**

A few participants indicated that they do not highly value environmental issues and are less willing to take part in environmentally-friendly behaviours or green activities. This emerged in the following data collection sessions;

### **FOCUS GROUPS**

*"Sustainability has to be more than just being good for the planet, I guess we all want to be involved but we are so busy with our own lives we won't take a class or do something environmental only because you're not going to benefit because it will benefit you economically or you don't have another choice."*

### **DIALOGUE in FG SA2**

*"I'm not gonna stop eating meat. I want to drive my fancy car, it's got leather shoes. I don't know what it is I should be doing, but in terms of wanting, I won't give them up, even for the environment."*

*"It's a bit late for me to start thinking about the environment when I'm already we want a car. They won't be impressed with a Toyota Prius. They will come back with that. Even if we say it saves the environment, but that's not the point."*

*"I wouldn't go to climate change event because we have not placed enough time being part of environmental society or doing environment stuff. I'd rather be doing than even thinking of being environmentally-conscious."  
"Things are only marketable when their value is increased. We don't ask the question until it is hammered into our understanding. If you want to market it, you have to find a way of giving it enough value. Find a way to make it worth marketing now it's not given much value."*

8.3.2.1.2 Business-powered Governance: Insignificance/Intangibility of Individual Actions

The majority of students related their lack of motivation to live more sustainably to the intangibility and insignificance of individual behaviour.

***FOCUS GROUPS***

***"We are educated, why are we not changing. Maybe because we know that economic growth will trump anyone else so what's the point...Even if I turn down my lights or shower shortly, there are still one billion Chinese who also want the warm shower and car and computer. At the individual level not too much change can be done. Needs economic change. Mostly big corporations responsible for carbon emissions and global changes." (FG***

However, a few participants discussed the positive impact of such small, individual changes.

***FOCUS GROUPS***

***"Eating vegetarian is one of the few things we can do, something tangible. Like when you say don't fly, I don't think many people will do that. So for me it's the only***

**8.3.2.1.3 Influencing Factors**

The study generated important findings that reflect a relationship between the participants' educational influences on their perceived efficacy and the meanings

they contribute to their actions, and the social and educational system in which such engagement modes are taking place.

First, a wide majority of participants criticized the prevalent disconnected thinking amongst the public, which they considered to have been shaped by educational approaches that do not promote critical and systemic thinking among the youth;

### **FOCUS GROUPS**

***"When people buy a car they don't think of kids in Africa or how much we see the bigger picture, realize we are all interconnected. We have to change our programmes don't address these problems and this way of thinking is not environmental awareness but not overall picture, not to understand the issue wasn't really presented as an issue that we all have to work on." (FG 1)***

### **INTERVIEWS**

***"We are educated to be very focused on one thing only, not to think holistically. We see each other as separate from nature, so we don't see our impact...It's also about what we are told as we grow up and in school about AIDS...but nothing on the environment." (INT SA1)***

### **PARTICIPANT-OBSERVATION**

***"Usually no reflection. For example in school, if environmental issue is brought up, picture, asks students what do you think about it; then switches to a normal class, no reflection, no discussion." (SA event 2)***

Second, many participants discussed the influence of materialistic social and cultural value systems, and profit-based governance, which promote individualistic and

unsustainable lifestyles.

**FOCUS GROUP**

*"Worst thing now is value system, that's what needs to be changed. A lot of achievement in relation to resources you have; the reason why you have such unequal distribution of resources, because of the resources you own and money you make, for sure you want to have more."*

*"Capitalistic ways lead to bad lifestyle choices in terms of what you want to accumulate capital, and they can't afford to think about it. It's a luxury of the rich and these people often ignore it. The driving force of industry, it needs to come from the bottom."*

**INTERVIEW**

*"We need to change the system. Economy now is profit driven, money or are supported and controlled by people with more power. The focus is on making money. The problem is the solution...We need to change the system."*

**PARTICIPANT-OBSERVATION**

*"The way world is shaping now, you need more money, it affects me. What we do need is sufficiency, related to equality. The world as sufficient for livelihood, not for 'better life'." (SA e)*

Third, a few participants criticized current processes of production and consumption, in which people disconnect from the sources of their products and services, and do

not consider the extent of utilized energy and resources or the wider implications of their consumption patterns.

### **FOCUS GROUPS**

***"It's also media, TV commercials, campaigns...We live in a world led by one who makes our vision. I think the government is not the strongest; it's the individual; but he is influenced by anything. That's why media matters." (FG NL1)***

***"Environmentalists need to realize it's about marketing. We need to think like a marketing team thinks; in their commercials, you open coke, environmentalists have to do, learn lessons from great corporate on greening." (FG SA10)***

### **INTERVIEWS**

***"We might be more aware of climate but on other hand we don't know how to receive it packed and ready." (INT NL7)***

***"Meat production we buy in package; eat with knife and fork...You can't see you. Urban life is candy-coated. Don't see sources or processes, only finished products." (INT SA10)***

#### **8.3.2.2 Importance of Reshaping Society**

A widely-held perspective amongst participants was the importance of re-shaping social values to enhance contributions to a more sustainable society through establishing value systems that promote inter-connected and critical thinking, give meaning and value to individual contributions, which would subsequently enhance young people's sense of efficacy to contribute to change. The majority discussed the role of education and of social trends in reshaping societal values, understandings,

and action. A few also discussed the need for society-nature connections – see below.

### 8.3.2.2.1 Role of Education: Fostering Holistic and Critical Worldviews

Most participants discussed the need for educational reforms which incorporate more holistic thinking and integrate sustainability education and learning into various educational spaces and disciplines.

#### **FOCUS GROUPS**

*"Schools should do more. For me it was an important place where I got information and giving info, but in giving them assignments, asking them to go out and do research, letting them understand and look it up for themselves. Maria wrote an essay about different types of vegetarianism and looked it up to understand and I got convinced." (FG NL6)*

*"We need to change our children. If climate change is really happening, we need to be teaching them sustainable living and life skills. This will change their mindsets in their future careers and lives...We haven't grown up with that mindset. We need to teach sustainable living, efficient ways, recycling, if you set those values, then we might start to see change." (FG SA6)*

#### **INTERVIEWS**

*"Schools are important. Friday class was sometimes linked to the environment. I slowly become aware of your surroundings. You realize that everything you do, you reflect on your lifestyle." (INT SA13)*

#### **PARTICIPANT-OBSERVATION**

*"We need to find a way to bring sustainability to the school, to the community. Why are we doing these things and what can we change...They start to take their own." (NL event 3)*

#### **8.3.2.2.2 Role of Society**

##### ***- Developing Social Trends that Reconstruct Social Value System***

The generated data highlight a very common belief amongst participants in the importance of community-driven changes towards sustainability. Numerous participants considered bottom-up approaches that spring from community visions and actions to be valuable for influencing the general public, corporate, and governments towards sustainability. They also stressed that social trends need to be supported by governmental initiatives in order to ensure continuity and gradual incorporation into different societal, academic, and governance systems.

## **FOCUS GROUPS**

***"A trend has to be made and it's starting, emerging from the people. Sustainable clothes and also in supermarkets they're making more sustainable products. People are asking for it. I hope there will be policies coming from this. (FG NL1)***

***"I don't feel completely powerless; might not have power to make big changes but I can be part of it. We need to get more people thinking like this, youth need to be more active. I think if I do it myself it won't make impact. But maybe we need to encourage others. The only thing I can do. You can change what you have choice in, what you eat, what you buy, how much you drive." (FG SA4)***

## **PARTICIPANT-OBSERVATION**

***"With cooking, I eat vegetarian; because it's not good for the environment and the ecological footprint that meat has...Also because of the way animals are raised contribute to this system. I try to think of what I eat. If we can get more people to eat less meat, more land can be used for organic farming. Right now, it's not so important. In South Africa we need to get this message across. It's something people can do to contribute to decrease world hunger. " (SA4)***

### ***- Creating Spaces for Re-Connection with Nature***

A smaller number of participants discussed the ways in which integrating the natural environment into people's daily lives, especially in urban areas, can make them more aware and emotionally connected to their natural surroundings. Their conversations also touched on themes encompassing the role and accountability of other

stakeholders, contextual factors such as environmental setting and social value systems, and the enhanced sense of well-being upon closer connection to nature.

### **FOCUS GROUPS**

***"Possibility to put life and nature more into the city, give more vegetables, hybrid between nature and the city. So we were talking closer to nature." (FG NL1)***

### **INTERVIEWS**

***"Take people into nature, to connect. In Cape Town, some youth have relate to the environment..Their experience differs, they don't know a How will they understand the value of taking action to protect it?" (IN***

### **PARTICIPANT-OBSERVATION**

***"Should not underestimate capacity of people to value the environme just this knowledge needs to be unlocked and rediscovered underestimate the wisdom of adults. Their experience is valuable and improve our ways." (SA event 2)***

Finally, the following envisioning document from a South African participant in FG SA3 highlights different themes captured in this study on the need for societal transformation, innovation, social and economic equity, lifestyle changes, and new governance systems, which the participant viewed the African continent leading such changes.

**Sustainable Future?**

- Space where Social equality + enviro. Sustainability grow together + take priority over mass individualistic consumerism.

→ Africa as leader for change and alternative model for societal arrangement

→ Community ownership + creation of the best solutions

*Handwritten notes:*

- People have enough; are not in a great need of their situation.
- Something different to the current situation where 'individual competition' is prioritised over community sharing for good of all.
- Western solutions no longer sufficient; Africa as pioneer of new age/new challenges.
- No hierarchical systems of power: communities work (equally) to find best solutions.

*Vertical notes on the left:*

- CLEAN ENERGY + Alternatives to Oil + fossil fuels!!
- Travel without carbon emissions!

Envisioning Exercise – participant in FG SA3

### 8.3.2.3 Negative or Ambiguous Communication Approach: Influence on Perceived Efficacy

The large majority of participants indicated that the negativity and complexity in the communication of climate change by experts and through media sources is leading to disengagement from this global crisis at a personal level. Most participants

criticized the pessimistic, ambiguous, and blaming communication approach, which they considered to generate feelings of confusion, and powerlessness. They also expressed being overwhelmed and sensing climate fatigue, which is driving them to overlook such realities to avoid emotional and practical disturbances to their lives.

### **FOCUS GROUPS**

***"I prefer to fight for good things. I see bad things but prefer not to think about them and I feel useless." (FG NL5)***

***"We distract ourselves so we don't have to think about these unpleasant things that would mean for changing lifestyle. It's much easier, convenient to do nothing now." (FG SA10)***

### **PARTICIPANT-OBSERVATION**

***"Communication of climate change is very pessimistic...I don't think of it as a very terrible thing happening to our planet." (NL event 1)***

***"Climate change is like the new AIDS, people's don't want to know or hear about it." (NL event 1)***

Few participants also stated their lack of trust in science and the media due to multiple and incongruent messages that generate scepticism and confusion.

### **FOCUS GROUPS**

***"Climate change is to scare people. Lately we see lots of mismatching climate change. They don't even know if it's that bad. I don't believe they have control over us. Because they don't even know it, just so water.... It sounds weird." (FG NL7)***

### **INTERVIEWS**

***"Climate change gets me confused. Agenda is pushed by certain people public, but not what they need to know; who's going to believe that? behind closed doors. Media is diluted. People have no power." (INT SA)***

Nevertheless, a few participants indicated that the pessimistic and perilous outlook presented in the media and the stories covered on extreme events happening around the world is creating concern over the potential impacts on their lives in the future.

### **FOCUS GROUPS**

***"I'm worried. Seen some documentaries, and although you think you'd be dead by then but not really. Like in few decades if we carry on the rate we're going things like***

Finally, in SA event 2, one participant described the emotional burdens of trying to communicate the grave challenges of climate change in ways that might trigger an emotional response from the audience;

### **PARTICIPANT-OBSERVATION**

***"It was difficult to make the presentation (on climate change and water scarcity in poor communities). I felt***

**8.3.2.4 Social and Political Frames of Climate Change and Sustainability Issues: Shape Willingness to Participate and Perceived Efficiency and Contribution**

**- *Stereotyping 'Green' Issues: Influences Willingness to Participate***

A widely shared perspective amongst participants is the stereotyping of climate change advocates and environmental activists into a particular image, stigma, social class, or political group. The findings on the political framing of climate change and sustainability issues was mostly evident in the data generated with Dutch participants, some of whom tended to associated green issues to certain political parties or ideological stances. The findings on the social framing of green issues mostly emerged amongst the South African participants. These types of framings appeared to influence the participants' willingness to get involved in sustainability projects or events, and the data reflect that these participants were not seeing the relevance of sustainability to their everyday lives and decisions apart from specific socio-political frames.

### **SOCIAL FRAMING**

*"If they go to green seminar, oh what happened to you, you're hippie now, tree hugger...Boys if they pick up paper, it's a big deal; it's like they're a different person if they start recycling...like an image thing." (FG SA9)*

*"I want to prove wrong the notion that environmental care and action is only for the affluent. I am ordinary poor guy, from the shacks, and I care... I am here (in this youth forum) and I am open to doing something." (SA event 2)*

*"Lots of students don't usually come to these events. They think it's about greenies, hippies. Someone just said to me 'it's more fun than I expected'. Their usual notion is that it's not cool, not me." (NL event 3)*

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It is important to note that regarding the political frames, such perspectives emerged in a few particular focus group sessions rather than across all the sessions held in the Netherlands, as evident in the statements illustrated above. For example, when asked about the motivation to participate in this focus group session, the participant quoted above in FG NL8 stated that; *"it's an interesting subject. I can be the bad guy. Then we could have a discussion...We have a different political perspective, I wanted to see if they can convince me this time... but same arguments as usual..."* Therefore, it is important to recognize that such existing framings could also reflect a certain level of bias and representational issues regarding the profile of participants and ultimately can be argued to pose a possible limitation to this study, which is acknowledged and further addressed in Section 10.4.

A few participants also discussed the role of their religion in shaping their perspectives on climate change and their sense of efficacy to influence changes. This was captured with a Dutch participant in FG NL7, and a South African participant in INT SA16.

### **FOCUS GROUPS**

***"To me, if climate change happens it happens. It's destiny. I can't do anything. From perspective of my religion, if it's destiny it's destiny, I deal with it for myself but I don't feel I can influence others. I can try to live more responsibly even people around me, I cant. "* (FG NL7)**

### **INTERVIEWS**

***"In our church the priest is trying to use a narrative approach to make it more equitable, basing it on stories and principles from the Bible...Also about how they're trying to connect it to the environment...But there's also a sense of religiosity: if we mess up the earth, at least we have heaven."* (INT SA16)**

One South African participant reflected on the influence of cultural perspectives and norms on his vision of a climate-threatened future;

***FOCUS GROUPS***

***"On climate change, to my understanding, as weather is changing, sky is also changing. I believe in what my***

**- Trust and Efficiency: Shape Perceptions on Role of Youth or Role of Government**

The participants often discussed their perceptions on the roles and responsibilities of individuals and governments. A relatively large number of participants expressed their inability to depend on or trust the government to lead in sustainability initiatives, and stressed the role they need to play as youth, citizens, and communities in driving the transition to sustainability. The few participants who considered that the main responsibility for action falls on the government considered that their involvement should be through simple and direct acts such as voting and paying taxes to influence decisions and policies and the government can take care of such problems. The trust in government to drive the sustainability transition mainly emerged amongst the Dutch participants but was not captured amongst the South African participants.



### **'ROLE OF YOUTH'**

***"What I see is that we think that I'm not responsible for it when I buy because they sell it to me so they are responsible for it; but it's a two way. It's technology and market and government, and it's psychology. " (FG NL1)***

***"I trust our government with a lot of issues like security, health, infrastructure...but for acting green and for environment we should not be counting on the government. I think we should drive it ourselves." (FG NL7)***

***"In South Africa it is only up to the people. Government is not highly participating in fighting this, down to responsibility of individuals." (FG SA8)***

***"It's very rare to find government making green initiative or conference, they only attend it internationally. Otherwise concentrate on agriculture, water conservation, animals...but green initiatives only through universities." (INT SA10)***

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Also, the following dialogue in FG NL7 reflects these two different perspectives on roles and responsibilities.

**DIALOGUE IN FG NL7**

***“I don’t see role for myself conscious of climate change or making the world more sustainable. I don’t want to have active role in that. I think it's role of the government. Already government is making us separate plastic, green, and normal garbage. That will only increase with time.***

***I think it will be more effective if it's government policy. Things are already changing, and because we don’t accept a certain industry, the government is trying to get rid of it. So I don’t see how my influence of not eating meat will***

Figure 19 summarizes key themes on participants' self-efficacy.

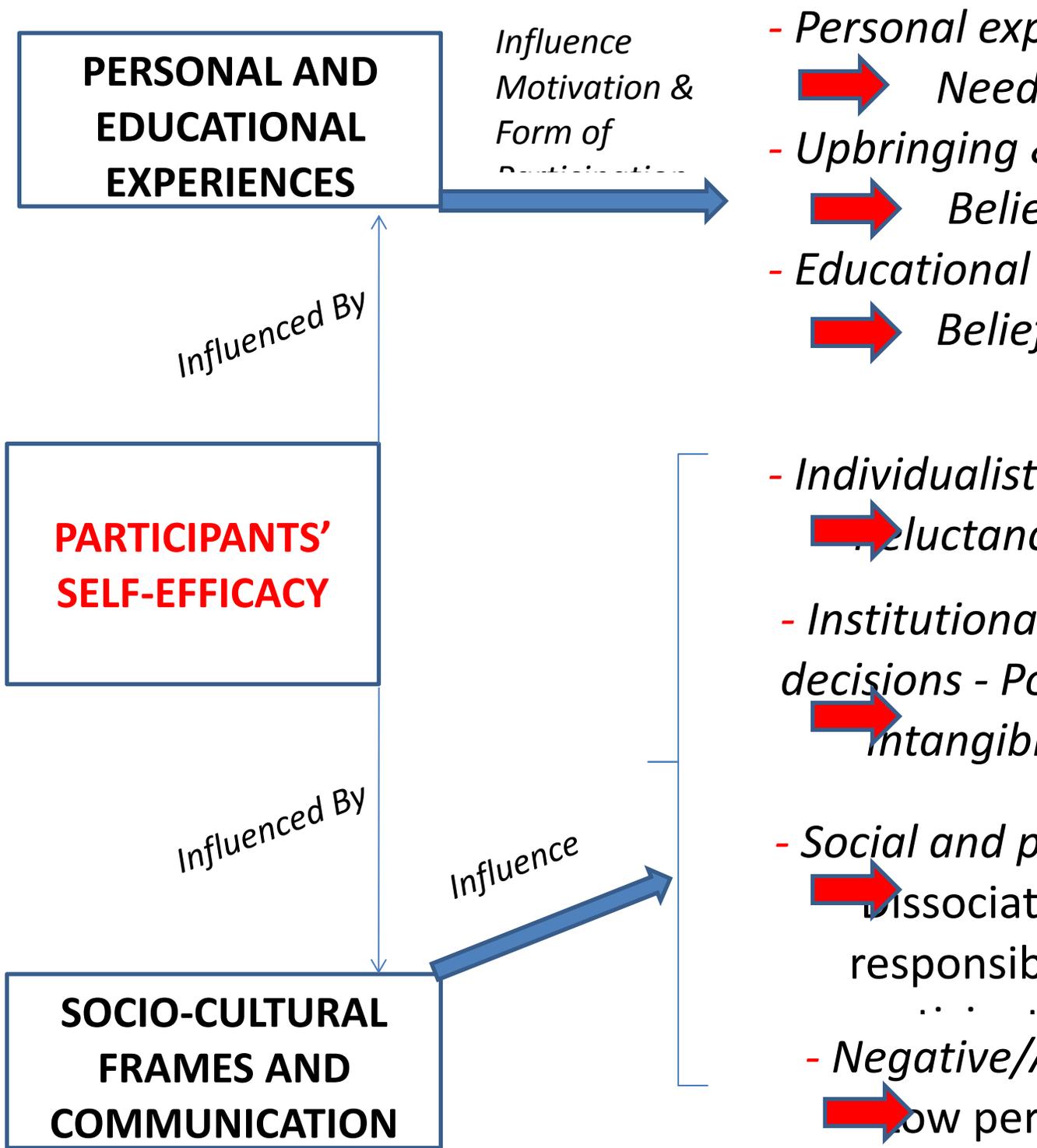


Figure 19: Key Themes on Participants' Self-Efficacy

## **8.4 PARTICIPANTS' AGENCY: EMPOWERMENT THROUGH JOB, INTERPERSONAL INFLUENCES, AND MULTI-STAKEHOLDER COLLABORATIONS; OPPORTUNITIES AND CHALLENGES IN CURRENT EDUCATIONAL SYSTEM, SOCIALIZATION SPACES, AND POLITICAL STRUCTURES**

The study captured valuable data which highlight the different personal and contextual factors shaping the participants' agency with regards to climate change and sustainability issues, and the ways in which such aspects of power, control, and autonomy to influence or drive change, are influencing their sense of well-being.

### **8.4.1 Empowerment Through the Job: Is Current Education Enhancing Skills and Competencies?**

The generated data point out to various ways in which the participants consider their future jobs and careers to empower them in making changes in their personal lifestyles and in their work performance, which would contribute to a healthier, more secure, and sustainable society. The study also gained insight into the extent to which their current education and learning is preparing them with adequate skills and competencies to empower them to manage changing job requirements.

#### ***8.4.1.1 Participants' Sense of Empowerment Enhanced Through Perceptions of Power Gained Through Their Jobs***

##### ***- Positions of Influence***

The majority of participants considered that their future jobs would empower them to make more sustainable lifestyle choices and work-related decisions as they gain positions of power in their places of employment.

### **ENVISIONINGS**

***"I want to do good for the world but I don't think I can make a change with my money to accomplish that. But maybe later on in my job, I will try to work with bags out of supermarkets or work for nonprofit organization which is sustainable before we can do anything significant about the environment we have to be secure...One has to be someone with influence or power in order to change things."***

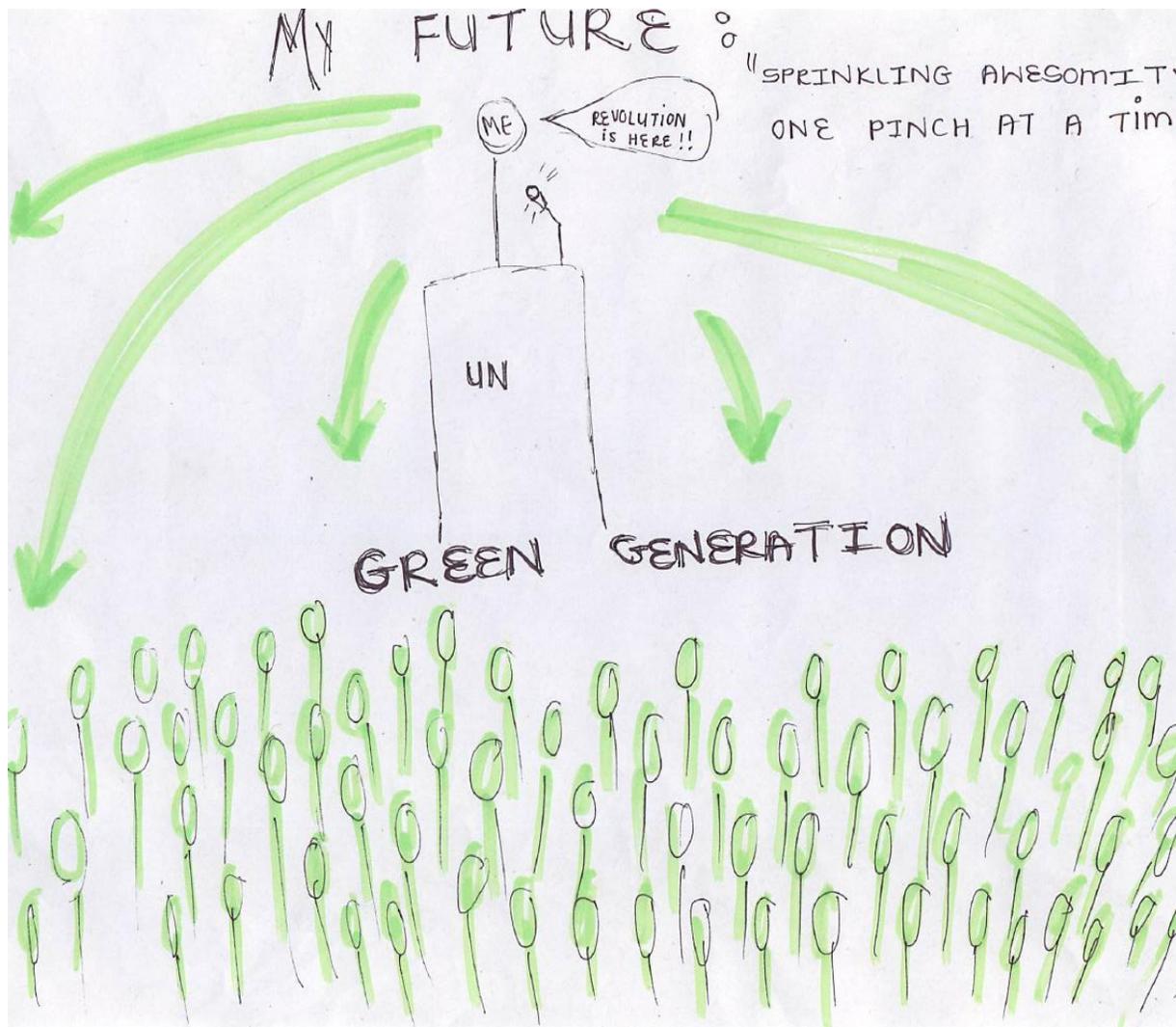
### **FOCUS GROUPS**

***"New generation have the power to do this. Now we don't feel empowered to become CEOs, people our age will take power. Now we can do few things but you can make these decisions. You can't say I want to buy biological products through a process. We are not in a position to do so much change now because of our workforce we can have more power and influence more decisions." (Focus Group 1)***  
***"As students at university we will go out to world and have jobs and influence things sustainably, and we'll be able to do more in our jobs, because we can influence things."***

### **PARTICIPANT-OBSERVATION**

***"I'm frustrated, I don't feel empowered. Later, with position of power I will be able to influence things." (SA event 3)***

The following document derived from the envisioning of a participant in FG SA1 highlights her association of her future job, where she hopes to be working at the United Nations, with her position of power to influence the younger generations towards sustainability.



*Envisioning Exercise- participant in FG SAI*

- *Contribution to Societal Advancement*

Another widely held perspective was the contributions that participants would like to make through their professional careers for enhancing society awareness and action on climate change and sustainability issues.

### **ENVISIONING**

***"Since I will be in a management position in a few years, climate change consider the environment in my decisions. I really feel responsible when I am in an entrepreneurial or organization is. I don't want to work for Shell for example and don't take responsibility to clean it up." (FG NL7)***

***"I hope to see more and stricter environmental laws. Perhaps as a lawyer I would like to see those communities who rely on unsustainable practices to successfully find alternative occupation." (FG SA3)***

### **FOCUS GROUPS**

***"I am studying agriculture and I now see the effect of weather changes on the environment. My ideal would be to produce enough food of good quality and every year in my own contribution, my own farm to increase soil health every year. It has to be a sustainable way." (FG NL1)***

***"I'm studying drama because I think theatre is a way to educate people and raise awareness among people...So we can use theatre to raise awareness on climate change". (FG NL2)***

***"Attitudes have to change in upcoming engineers and architectures. They need to be aware of these things and how to prevent. So we as engineers, who are building houses, need to learn to do it sustainability. We should focus on structuring buildings into it instead of destroying it." (FG SA5)***

Many other participants who were undertaking environment-related studies or courses considered climate change as an opportunity for them to find jobs and to innovate within their career prospects. This finding mainly emerged amongst the South African participants.

### ***FOCUS GROUPS***

***"Climate change can be threat to a future career or can be opportunity to study changes occurring and adaptations in different organisms. As an etiologist, climate change will have impact on my career because the ocean as an ecosystem is very sensitive to changes we are facing now."  
(FG SA4)***

#### ***8.4.1.2 Participants' Sense of Empowerment for Managing Future Career Transformations: Influence of Their Education and Learning***

The majority of participants discussed the ways in which their future jobs and careers would require competencies and skills to perform well in an increasingly sustainability-oriented economy and market system.

First, some participants pointed out to the importance of attaining the values and skills to adapt to the ensuing physical and structural changes to their everyday lives and for enhancing their performances in future careers;

### **ENVISIONING**

***"Company I would work for would place emphasis on going green. Going green is more important to a company than giving back to the community because governments have passed laws encouraging companies to be environmentally-friendly."***

### **FOCUS GROUPS**

***"There's a lot of opportunities in businesses and industries. You can go in different ways differently. So I'm here (in sustainability leadership class) because I want a job...and it's good on the CV." (FG NL2)***

***"There will be more jobs in science fields such as environmental science, engineering, production of more food for managing famine, and architects to design buildings that adapt to changing climate." (FG SA7)***

Second, most participants highlighted certain shortcomings in their current education in preparing them for such career transformations.

A widely shared theme amongst participants in both countries was the low level of priority of climate change and sustainability education in their academic curricula.

### **FOCUS GROUPS**

***"We have no university courses on the environment. In school we only get basics, what pollution is...My main sources of knowledge or info on sustainability are climate scandals and social networks." (FG NL7)***

***"It's growing but we're still leaving it at an optional level. Right now in law, we have environment law as an option,***

The study also captured similar insight in SA event 3, where participating student journalists reflected on their lack of competencies for adequately covering the climate change story and in influencing their communities;

***PARTICIPANT-OBSERVATION (SA event 3)***

***“Climate change topic needs to be broken down, it's like an elephant to swallow...There's so much to know about, and for us as journalists to know and to tell others. Info is lacking. I as a journalist need to understand the science behind climate change before I can research the story or talk to people about it.”***

A distinct theme expressed by a few Dutch participants was the lack of depth or skills development in sustainability courses;

***FOCUS GROUPS***

***“I study entrepreneurship, and now focusing a lot on people planet profit and how you have to consider all these; and we have business presentations from companies who want to sell that they are green. But we***

A distinct theme expressed by few South African participants was the lack of teacher training and awareness on environmental issues such as climate change;

### **FOCUS GROUPS**

***"They introduced new subjects on sustainability and on corporate social responsibility but used the very same teachers that had been teaching other courses. They don't have the background and understanding or skills to teach this new material...Course didn't touch on anything new***

Another distinct SA theme was the low student priority for environmental courses, which a few participants indicated to be influenced by the socio-economic context;

### **FOCUS GROUPS**

***"Modern age is service age, so less people are doing sciences. Focus Focus is on how we can improve budgets and what we have already getting as much paid as business. Accounting is where most people are***

### **PARTICIPANT-OBSERVATION**

***"Students doing biology are pushed by their parents to doing commerce are first to get education in their households & are main breadwinners money...We need to link biology to business to show them possibilities***

#### ***- Importance of Access to Technology: An Empowering Tool***

Many participants discussed the empowering potentials of technology, for gaining access to information, for communicating, networking, and lobbying with others over shared environmental causes, and for facilitating the transition to a more sustainable lifestyle.

### **FOCUS GROUPS**

*"I bike, and I plan my routes on website and I put it into my smartphone to my destination. It makes me take my bike instead of bus. These really change my lifestyle... It's low threshold, it's easy to accomplish." (FG NL4)*

*"Media and internet will have a big part in change in the future. It's apps and software that tell you which products are really green and they are doing positive change or just pretending. It gives you power to know a... (FG NL4)*

### **INTERVIEWS**

*"Technology is the solution because it can be developed from so many... in Africa we see technology as a threat, as replacing man not as... educated on these things." (INT SA10)*

### **PARTICIPANT-OBSERVATION**

*"There's advance in ways of communicating and it's empowering. We can communicate their concerns without barriers to entry and can exchange... (SA event 3)*

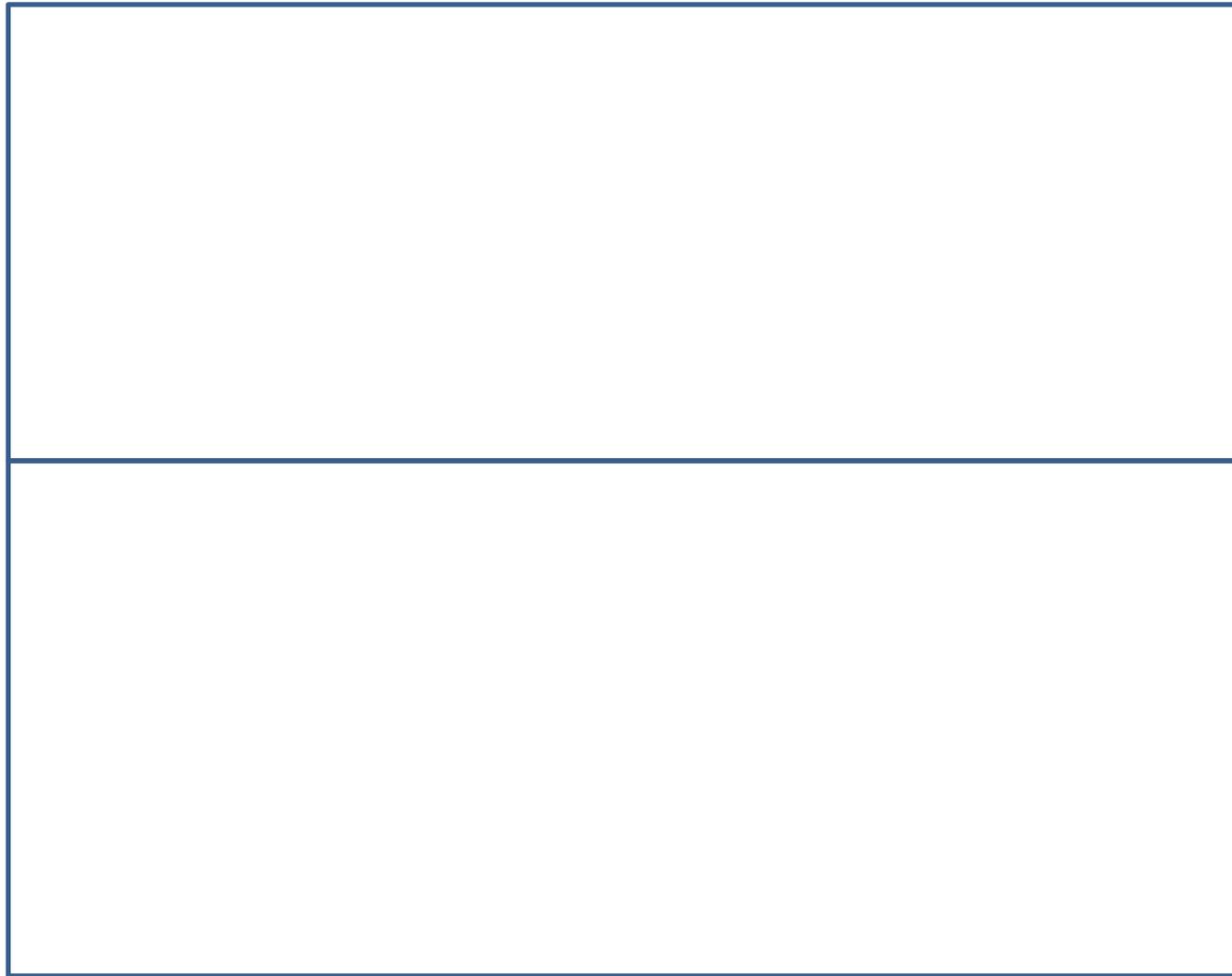
*"Communities can bridge gaps through internet. Access to mobile internet for youth to access information, lets them know what is happening nationally... identity divide...They have a space to express and there are people who..."*

#### **8.4.2 Empowerment Through Interpersonal Influences: Are There Adequate Academic and Socio-Cultural Spaces for Fostering Social Learning?**

The study found that the interpersonal relationships and social interactions played an important role in empowering participants through instilling feelings of shared causes, and through collaborative efforts that generate greater impact. The study also captured data which identified the opportunities and challenges in terms of creating or finding such spaces for youth interactions, empowerment, and collaboration.

***8.4.2.1 Importance of interpersonal relationships and interactions: Influencing change in society towards sustainable practices***

The majority of participants highlighted the important influence of social interactions and discussions on shaping people's worldviews and sense of empowerment in contributing to a more sustainable lifestyle.



A follow-up interview with the participant in FG NL5 gained deeper insight into her interpersonal experiences and her ability to influence her peers;

### ***INTERVIEWS***

***"I was telling my friend about tomato with the spots when you don't buy it, it will get thrown away because no one will buy it and it will get bad. but if you buy it***

A distinct SA theme expressed by a large number of South African participants was the importance of teamwork for instilling confidence and encouragement;

***PARTICIPANT-OBSERVATION (SA event 2)***

***"Before, I used to think only black people are more affected by food insecurity. But when I came here, also saw how white people are affected. But cannot be compared to what blacks are facing...I wasn't expecting so many black people. I thought all would be whites. I feel empowered."***

***"Being part of this forum changed my mindset... Listening to each other's visions, we realized we are all same people, want same things. We all have passion to***

A distinct NL theme expressed by some Dutch participants, who were members of environmental groups, was the importance of collaborations with youth for greater representational power and influence.

### **FOCUS GROUPS**

***"Now politics is very high and far away from people, probably one v feeling that you can influence on policy. In decision-making we individual has to reach other persons to make a difference. Especially achieve that difference, a small group won't be heard, you need a la and pressure, but we have to get organized." (FG NL1)***

***"Our role is influencing setting the agenda in politics and media and s a group to do big things. But we can set agenda, and we can also consumption, eat organic. But that won't change the whole ind individuals." (FG NL2)***

### **INTERVIEWS**

***"If we really want to change something we need to be a bigger organ more representational power. It creates more legitimacy in what w bunch of hippies in a platform but we are representing a large part o raising awareness this is not possible. So we need to do both, talk influence policy top-down."(INT NL9)***

#### ***8.4.2.2 Youth initiatives and innovations to create spaces for interpersonal and community influence***

The study captured considerable data which reflect the ways in which the participants are initiating their own endeavours, activities, or events aiming to enhance the provision of spaces for influencing and collaborating with each other.

First, the majority of initiatives were undertaken at universities, seeking to enhance student engagement through creative, entertaining, and interdisciplinary processes;

### **FOCUS GROUP**

*Last year we did door-to-door campaigns in each student residence to this year a green fashion show, with designers from all over South A environment...and designers create garments from recycled material different fields." (FGSA5)*

### **INTERVIEWS**

*"Class on climate change solutions, there were 200 students coming 2 are in the green club. It shows that when they put their mind to it t and can be passionate about it." (INT SA13)*

### **PARTICIPANT-OBSERVATION**

*"It has to be fun. This is why for today's event we tried to do this cyclin awareness on energy efficiency and we got a music band to get more "We started something like a green student police on campus. It's abo Students know we are there; to not lose power and momentum of wh*

Second, in many initiatives youth were seeking to make use of academic spaces to influence small changes towards sustainability and to reach out and engage a diversity of students on-campus.

### **FOCUS GROUPS**

***"We have the desire to influence towards a better environment. To start with, there are lots of things that could be improved; things that are not good for the environment, like waste management, heating, food. We saw this could be changed." (FG NL3)***

### **PARTICIPANT-OBSERVATION**

***"At our university we realized there was no platform for student concerns and ideas on climate change and on more sustainable practices. We're more events-oriented, do talks on environmental issues, etc. At other universities, like many others in the country, lots of students live on campus. In what other place can you have access to thousands of students in one place like that." (SA event 1)***

Third, a few initiatives were aimed at raising awareness on the power of individuals and institutions in influencing changes towards more sustainable living;

### **PARTICIPANT-OBSERVATION**

***"I think most people don't know the power of the consumer. If you make the choice to buy biological, that will impact the big companies. Same with government if you make the choice to buy local products." (SA event 2)***

Fourth, a few initiatives were focused on addressing local community challenges such as low level of public awareness and water scarcity;

### **INTERVIEWS**

***"We formed an environmental band under climate change theme bridging that gap because now there's no environmental education d climate change to raise public awareness" (INT SA14)***

### **PARTICIPANT-OBSERVATION**

***"In our community we will have problems with water scarcity. W community secure funding for rainwater harvesting. This promo empowers because it helps them be self-sustainable and can grow the***

Fifth, the study captured data which highlight the need for such initiatives to be reflective and engaging in order to enhance dialogue and social learning, as described by a few participants;

### **INTERVIEWS**

***"When dinner and music entertainment were added to the program left right after the event. They did not stay for discussion, so I don't t learned for next time to try to integrate discussion into the events to g sustainability." (INT NL5)***

### **PARTICIPANT-OBSERVATION**

***"We are all coming from our hectic lives and here in this forum we ca Give the delegates this space to reflect, to make better decisions. To g We need space to be heard. Awareness is not enough; needs to be va find what it is that they value." (SA event 2)***

*- Creating Formal Spaces for Youth Engagement and Empowerment*

The study captured a few particular examples which highlight the importance of societal and corporate initiatives seeking to enhance youth leadership skills and promote youth agency, through providing spaces for participation and innovation. First, participants in FG NL4 discussed the ways in which such platforms enhance their opportunities for generating impact with others;

***FOCUS GROUPS***

***"Small-scale projects such as what our environmental organization is doing like the sustainable dance club. These small interventions are good innovations and create awareness. For example I made a framework how you can***

Similarly, a participant in FG NL5, who is also a member of an international environmental organization, discussed the organization's aims for creating spaces for more meaningful and influential youth engagement;

***FOCUS GROUPS***

***"We want to focus on mobilization projects to get young people involved in all campaigns but mostly now on clean energy because it's the most difficult or urgent. Most***

Also, a participant in SA event 2 shared her initiative as part of an environmental organization aiming to enhance youth participation in sustainability projects;

## **PARTICIPANT-OBSERVATION**

***"In my community organization for the environment, we approached unemployed youth, told them we can make***

### ***8.4.2.3 Socio-Cultural Challenges: Youth Initiatives Need Guidance and Support***

The study captured data which highlight the challenges that the participants are facing in their engagement with climate change and sustainability issues and their capabilities to participate, to engage others, and to sustain engagement.

- ***Challenges for Sustainability of Youth Initiatives: Difficulty of Sustaining Student Interest and Engagement***

Most participants who were actively involved in environmental organizations pointed out the challenges of sustaining student interest and meaningful engagement in environmental events, activities, and clubs.

## **FOCUS GROUPS**

***"It's difficult to attract youth and get them interested. We are even working, our group is not growing. People are not coming to us; should we target a group of young people who will be interested and want to get involved? It's about the bigger circle, those who focus more on their clothes, music, etc. We need to reach out to them once they have joined an event or are in a program and get them involved. They have a lot on their minds now and lots of priorities, and it's hard to get them to stay." (FG NL6)***

***"Problem is with sustaining student interest. Hardest thing is to get a group of students to stay involved in the activities....We need to ensure sustainability of projects and programs and retain members. We are only students at university for 4-5 years and then they graduate, which means lack of continuity." (FG SA9)***

## **INTERVIEWS**

***"We have volunteers but they don't always react or participate. We need to improve the quality. Lots of people who just want to be associated with our organization but aren't really doing anything." (INT NL1)***

Some participants who were actively engaged also discussed ways to enhance student engagement, such as through involving them in the planning and implementation process, targeting students from different disciplines, and addressing topics that are relevant to their studies and interests.

### **FOCUS GROUPS**

***"Make green cool. People want to do it if it's enjoyable and if they will make them feel good if they see they've helped and made a difference."***

***"There is more awareness now, there are posters on recycling on campus but then stopped, no consistency. If there is system to remind them. Eventually it will have effect on them...It has to relate to what you study. It will be so much less, as compared to when it's in your field of study." (FG NL1)***

***"It never works to point out that things are wrong and not work. It's something we learned here. We have to work together and show them that we care. We have to give a little and they give a little... It's important that when you talk to a person needs to be able to identify themselves with you; so that they do it slowly, as long as you communicate it with others. But if they see people of them as hippies and don't identify themselves with you anymore they form a separate group." (FG NL3)***

### **PARTICIPANT OBSERVATION**

***"Get students involved in preparation of events, so they wouldn't feel like they're just being used." (SA event 2)***

- *Limitations of Youth Initiatives: Disempowering Communication Approach Through Isolated Groups and Poor Networking*

A small number of participants also discussed the lack of spaces and platforms, or the poor communication of such spaces, for participating in climate change or sustainability themed events.

### **FOCUS GROUPS**

*"In our Department, they do annual environmental competitions department, not on all campus...If you're studying commerce or so field, you don't get to know about these events until you bump into SA5)*

*"After their inaugural lecture I did not sign up for the environment club up for membership. If someone wants they have to contact them operates, what we can do to participate, projects they will be working*

### **INTERVIEWS**

*"Events usually within the environment group but they don't extend to societies. But these societies don't often agree because they are interested...Problem is that it should not be 'a group' thing; they are a group and you focus on yours; that's the problem in South Africa." (IN*

#### **- Difficulty of Influencing Changes in Socio-Cultural System**

A few participants described the cultural challenges of influencing change in their own communities, citing cultural norms, habitual lifestyles, and communication challenges.

### **FOCUS GROUPS**

***"Small things that you can do, that's a culture we don't have in their own home." (FG SA4)***

### **PARTICIPANT-OBSERVATION**

***"It's about our culture. We have a saying like don't stick your head above you get cut Just be normal. Just like the English proverb early bird catches the worm early bird gets eaten by the cat. So don't be anti-conformist, don't be a culture. It takes courage to be different." (NL event 1)***

Distinct challenges expressed by a large number of South African participants entailed the complexity of social challenges and the cultural barriers to communication. For instance, some South African participants discussed the social challenges to enabling change in their communities towards more sustainable lifestyle, due to widespread poverty and lack of education and unemployment.

### **FOCUS GROUPS**

***"In South Africa we're still struggling with our historical challenges products are still very expensive and technological. How do people afford living is very expensive. If you ask the poor not to cut trees, how do there's the knowledge, there so many other issues to deal with problem we have is crime; solar panels getting stolen." (FG SA2)***

### **PARTICIPANT-OBSERVATION**

***"How can we preach environmental friendliness to a young person in townships are not educated so they don't see the relevance. They think What will it do for me...We tell them the environment is our job, money...Going green' in Africa doesn't apply. They don't have basics."***

Another important theme which emerged distinctly amongst the South African participants was the barrier to communication at the community level, as young people from diverse racial groups feel less empowered and influential to address or advise their seniors or communities. This was mainly captured in SA event 2.

***PARTICIPANT-OBSERVATION (SA event 2)***

***"I'm trying to adapt my strategies to the culture. I'm a colored girl in a black community. So I'm facing challenge in communicating and connecting to them. They say I'm colored. I do not represent them."***

A few South African participants also discussed the language barriers in trying to communicate and raise awareness on climate change and sustainability in their communities.

***INTERVIEW***

***"Info at the environment club lecture was too much, needs dictionary own language. English is too big sometimes for us, they bombard us understand these complex terms? I will become excluded from the talk"***

***FOCUS GROUPS***

***"What's the point of having posters and adverts and people don't understand. In rural areas are not educational. It should be in the right language, not all clear and simple, pictures can communicate. In rural areas, if it's in the local language, it's easier to understand. But it's difficult to translate to different languages. It's a challenge because lots of technical terms. I had to translate question to Zulu. We need to target different languages and cultures" (FG SA7)***

- *Importance of Guided Leadership*

Within such findings on social and cultural barriers to youth empowerment, the study also captured data which indicate youth's need for guidance and competencies that can enable them to become true and influential leaders in their communities. This was mostly captured through participant-observation during events in which young South Africans discussed the support they need for enhancing their initiatives.

***PARTICIPANT-OBSERVATION***

***“We have great ideas, we feel there is something wrong and we see the need to do something. My question is: How do we go about to solve this? How do we get our communities to listen to what we have to say and act on that? I expect set of skills from this forum and a broad viewpoint on which is best way to lecture traditional people about the environment and how to balance the***

**8.4.3 Empowerment Through Multi-Stakeholder Collaborations: Are there Formal Structures Supporting Meaningful Youth Participation with Impact?**

The study found that multi-stakeholder collaborations considerably enhanced the participants' sense of empowerment and agency for applying their innovative ideas and for influencing change.

#### ***8.4.3.1 Impeding Academic Structure Enhanced Through Student-Administration Collaborations***

The majority of participants who were active members of student environmental groups indicated that the low level of financial and educational support and responsiveness from the university administration impeded the success of their environmental initiatives on campus.

#### ***FOCUS GROUPS***

***"No financial support system in our university to help with our environmental admin for sustainability, it's sometimes hard to find out what they are doing together. Now it's not transparent, we don't work together." (FGNL3)***

***"Environmental course has so much work, students less likely to take it and we don't have much room for diversity of courses or choice of subjects."***

***"In my course I have a project to choose 3 students not involved in environmental start something environmental in their attitudes and daily actions. But I try to connect to academics and experts and they're not responsive."(FGSA8)***

#### ***PARTICIPANT-OBSERVATION***

***"I wanted to do a climate change concert, but no support from school. I tried to do it on a Saturday morning...All my actions and activities are based on the school. She is not involved anymore because of political issues, so our project failed." (SA event 2)***

One participant also discussed the bureaucratic and logistical challenges to implementing sustainability projects at her university.

### **FOCUS GROUPS**

***"It's hard because it takes a lot of effort when you want***

Nevertheless, a few other participants shared their positive experiences on the ways in which the administrative support from their universities enhanced the effectiveness of their projects. This data was mostly captured in the events attended by the researcher, in which different youth shared their experiences on environmental projects.

### **PARTICIPANT-OBSERVATION**

***"Our initiative for encouraging students and staff to use bicycles rather than cars to university and to share car rides, improved when got institutional support from university administration...The students quickly adapted and accepted." (SA event 1)***

Two participants also highlighted the importance of working on environmental projects both top-down and bottom-up within the university.

### **FOCUS GROUPS**

***"We always try to work in that way, raise awareness which also environmentally conscious students, while at same time trying to work with uni managers and leaders." (FG NL3)***

### **PARTICIPANT-OBSERVATION**

***"Our university established an environmental award for individuals and groups were responsive...We also worked with our university management (SA event 1)***

#### ***8.4.3.2 Absence of Enabling Political Systems and Physical Infrastructures***

The wide majority of participants discussed the inconvenience of making personal lifestyle change and lack of empowerment to influence political change, due to hindering political systems and lack of physical infrastructure. However, the key barriers highlighted by participants reflected certain contextual dynamics of each country setting.

For instance, the only shared theme within such contextual barriers to engagement was the need for information communication and greater citizen engagement on sustainability issues, which was expressed by a few participants from both countries.

### **FOCUS GROUPS**

***"I don't know what the government is doing on environmental issue. on what they are doing; maybe on their website we can get an idea you have to be involved, and as long as there is no involvement that's  
"I know about climate change because I'm here and in my job and ec know. If government gives us funds to research it, it's also part of the information to the public." (FG SA6)***

### **INTERVIEWS**

***"What happens in COP17 needs to be disseminated & people not feel to be communicated to public so people can get involved. Science people are the ones that need to abide by these decisions." (INT SA12)***

A distinct theme emerging amongst a large majority of the Dutch participants was the high costs of sustainable products and the need for government incentives through subsidies for more environmentally-friendly products and practices.

## **FOCUS GROUPS**

*"It has to be convenient in terms of price. That's also a reason why because its free, so even if it's 5 minute trip they won't go by bike or w car...I don't have driving license because I can travel for free on public*

*"Green products are expensive, especially when you're a student. available. If you take it the other way round, make the more pollu might change." (FG NL4)*

*"There's a fixed price for gas and electricity in our student housings, they are paying as much. You feel less obliged to use less. No incentive*

## **PARTICIPANT-OBSERVATION**

*"Eating organic food is a start to live a better way but for me as a stu the cheapest version, so I make my decision in a practical way tha can...And if you can afford it you don't directly see the benefit of you k*

A few Dutch participants also indicated their lack of trust in sustainable products and services and the low transparency on the quality of such products.

### **FOCUS GROUPS**

***"Recycled products are not always trusted, for example one type of re they still want it to be white so they only use white paper to recycle it.***

***"Challenge is that the choices in the store don't look attractive. The halFSIZE and double price...If you're young you're not going to make th***

### **PARTICIPANT-OBSERVATION**

***"It's difficult to distinguish local produce from foreign. I was in local because I asked where did these apples come from I knew they were on the label. It's about information." (NL event 1)***

Three distinct themes also emerged amongst the South African participants. The most widely shared entailed the lack of youth political platforms and their low sense of empowerment to influence political decisions.

### **FOCUS GROUPS**

*"In South Africa with the government climate crisis is at top and not parliament but not breaking down to premier to mayor and not community...Our government is failing us in terms of climate change."  
"Although we are here and studying and we'll get jobs and work in e then our skills will be limited. Even if environmentalists say this project ahead and do it anyway because they're focused on profit...The government should take our concerns and think more about what we point." (FG SA6)*

### **PARTICIPANT-OBSERVATION**

*"COP17 this is happening in our own country and we are not given voice to watch as international people come and discuss and decide. This is about our future. Where's our platform? They should be collaborating."  
"In COP, negotiators and leaders' decisions are based on info from outside COP 17, not asked to voice their concerns on how climate change is affecting"*

Some participants described the inconvenience of making personal lifestyle changes and the need for enabling infrastructure.

### **FOCUS GROUPS**

***“Now it's an inconvenience to live more sustainably. It doesn't help when collected all goes into one bin. What's the point of doing this if what's done is going into one bin. We have good regulations but no incentives...So it's not about finding solutions but about letting people***

### **INTERVIEWS**

***“I live in a township. To start a recycling programme in my home I have to transport wastes from home to town which is around 15 km. It's an active choice, really hard to sustain, requires a lot of energy.... Trying to change where you live with that change is hard. I addressed it to municipality and they don't have the resources as well. We can't depend on municipalities, they are forcing***

A few South African participants also complained about the regional differences in governance and their inability to influence provision of more enabling infrastructures when approaching local government for solutions;

### **FOCUS GROUPS**

***"Orange recycle bags distributed for free by the government, we haven't even seen an orange bag; because I live in Pietermaritzburg and there's no media campaign, no government distribution. Media should***

Another participant (who is a post-graduate student in sustainability) also highlighted the need for government funding on climate change and sustainability research to enhance the effectiveness and dissemination of their work.

## ***PARTICIPANT-OBSERVATION***

***"One thing is to have an idea, another is to have***

### ***8.4.3.3 Enhancing Youth Empowerment Through Spaces for Collaboration***

The wide majority of participants emphasized the importance of collaborations with other stakeholders for enhancing their agency and the effectiveness of their sustainability endeavours.

#### ***Government Stakeholders***

In terms of stakeholders, the majority of the participants focused on the need for collaboration with national and local government for transitioning towards sustainability.

A few South African participants also discussed the importance of government setting a good example to communities by greening public institutions and practices;

***PARTICIPANT-OBSERVATION***

***"Need president to be educated, live in eco-house,***

Also, a distinct perspective expressed by a Dutch participant was his lack of trust in global political solutions to sustainability, and the importance of local and regional rather than international collaborations.

**FOCUS GROUPS**

***"I personally don't believe in political solutions anymore, especially at that international level; after Copenhagen***

***Youth and Sustainability Organizations as Stakeholders***

A smaller number of participants, especially amongst those who were actively involved in sustainability groups, emphasized the need for greater collaborations amongst different youth and sustainability organizations.

**FOCUS GROUPS**

***"Need more cooperation between different organizations. Big env training and support to smaller organizations and group of local different ways than the big ones...But it should not come as mental barrier now to be crossed: Environmental activists as super greenie and***

**PARTICIPANT-OBSERVATION**

***"The aim of this network is to strengthen our collaborations as diff working on sustainability initiatives...We could also develop a ma solving weaknesses, improving projects." (SA event 1)***

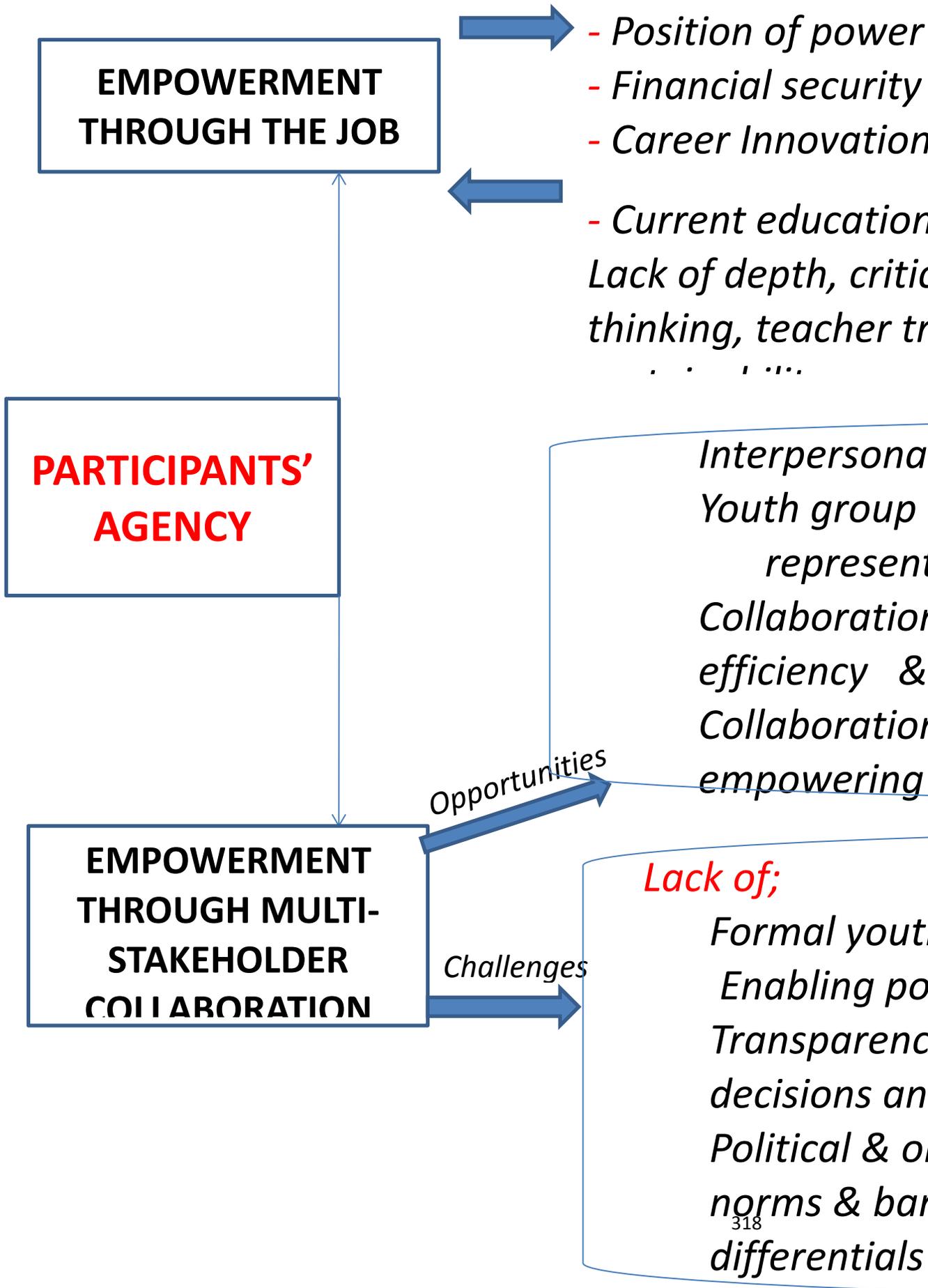
***Media Stakeholders***

Finally, a few participants were focused on networking and partnerships with media stakeholders, and the importance of conveying positive, reflective, and empowering messages to the public.

***FOCUS GROUPS***

***“We need to make it visible in the media, concrete actions of putting tap down, turning off water, starting to eat one day vegetable and then slowly expand. Show simple actions that people can apply in their living. It should be promoted as 'it's easy, so why shouldn't you do it.' Because***

Figure 20 summarizes key themes on participants' agency.



*Figure 20: Key Themes on Participants' Agency*

Finally, this Chapter has presented the main study findings categorized across three key themes, namely: the participants sense of vulnerability and control; self-efficacy; and agency. The importance of the socio-cultural, socio-political, and educational contexts in influencing the participants' engagement has been also manifested across these findings. The next Chapter (9) delves into in-depth discussions of these findings in relation to current literature as well as inter-relationships across key themes.

## **CHAPTER 9. DISCUSSION OF FINDINGS**

### **9.1 INTRODUCTION**

In the previous chapter, Section 8.2 presented findings that indicate that the participants' vulnerability is shaped by their perceived control over future concerns and changes. Section 8.3 presented findings revealing that the participants' perceived efficacy is influenced by the meaning and significance they associate to their contributions in impacting such changes. The findings in Section 8.4 demonstrate that the participants' agency can be impeded by their low sense of contribution and their inability to enact changes, and enhanced by inter-personal and multi-stakeholder collaborations. In addition, these three sections captured important insight on the contextual influences on such forms and processes of the participants' engagement, including environmental, socio-cultural, academic, and political

settings. This Chapter seeks to locate the findings within relevant fields of literature, before delving into the complex inter-relationships between diverse themes and identifying implications for policy and practice<sup>174</sup>. The next sections provide in-depth discussions of key themes or series of findings, drawing on insights from similar studies and relevant literature, and on the enhanced contextual insight gained through meetings with key informants in the Netherlands and South Africa. The findings on the theme of participants' vulnerability are discussed in Section 9.2; the theme of participants' efficacy in Section 9.3, and the theme of participants' agency in Section 9.4.

## **9.2 DISCUSSION OF FINDINGS ON PARTICIPANTS' VULNERABILITY**

The findings in Section 8.2 highlight the participants' tendency to perceive the impacts of climate change mainly in terms of the transformations that would take place in their future lifestyles, communities, and economies, and to associate climate vulnerability to their capabilities for controlling, managing, and adjusting to such future changes. Participants emphasized the importance of financial and technological autonomy, government performance on sustainability, and ethical considerations of climate change and of societal development. These inter-related themes are further elaborated below.

### **9.2.1 Vulnerability, Perceived Control, and Lifestyle Changes**

The study finds a strong connection between the participants' perceptions of vulnerability to climate change risks and long-term impacts, and their perceived control through financial and technological means. First, this connection was evident

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<sup>174</sup> Section 10.3

in their discussions of the adverse implications of climate change to poor communities that do not have the necessary capital to sustain access to basic needs or to move to safer locations. Grothmann and Patt (2005) generated similar findings on perceptions of risk and adaptive capacity shaped by resources such as money, access to physical and technological resources, and social and institutional support. The images and visions of future impacts and changes that the participants in this study have expressed; including agricultural impacts, climate-induced migration, adverse impacts to poor communities, and rise in prices due to increased taxation, are shared with young participants in other studies, such as by Chadwick (2010) and Rosev and Arjannikova (2008). Only a few participants were concerned about impacts to their personal lives or health, which is congruent with findings by Chadwick (2010) and Leiserowitz (2007). Second, the connection also emerged in the participants' visions of lifestyle changes in the future such as the incorporation of technology into daily life, rising costs of living, and social and governance changes in systems of living, production, taxation, and legislation. Similar findings have been generated by Bostrom et al. (2012) and DECC (2010) regarding young people's focus on energy efficiency, sustainable transport, and progressive taxation for their future with climate change.

Understanding these findings requires reviewing the literature on perceptions of risk, vulnerability, and control regarding climate change. For instance, the United Nations (UN, 2004) discussed vulnerability that is related to physical exposure to a risk, the environmental setting, the available economic resources, and the social factors that influence well-being such as education, provision of basic rights, and good governance. In the context of this study, it can be argued that the generated findings on the participants' perceptions of risk and vulnerability are associated with both internal and external factors. The former imply the participants' agency-related factors<sup>175</sup>, such as access to financial and technological assets and their perceived

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<sup>175</sup> Findings on participants' agency are more extensively discussed in Section 9.4

ability to take precautionary actions, whilst the latter entail external or structural factors such as their surrounding environmental context and political economy (Bohle, 2001; Fussel, 2007). Hence, the participants who considered themselves to be safe from climate change mainly associated their security to their perceptions of control and power through having money to move to safer places or to buy necessary technologies. Norgaard (2011) argued that "*some of the reasons for ignoring an issue are related to awareness of one's privileged position in the global economic order. Troubling emotions are troubling due to social context.*" (p. 91). Similarly, Maibach et al. (2009) also found lower perceptions of risk to climate change amongst people who are educated and of relatively high socio-economic status.

The external factors can help explain certain contextual differences which emerged within these findings, as climate change risk perceptions are generally known to be influenced by contextual factors such as demographic and socio-economic settings and social identities (Kellstedt et al., 2008). The different participants' risk perceptions highlight important contextual influences. Risk perceptions are not received at face value, but rather mediated through pre-existing cultural worldviews such as beliefs about what constitutes a fair society, what roles governments and individuals play, and society's relationship with nature. These worldviews influence people's uptake, understanding, interpretation of, and response to climate change information (Hulme, 2009).

Most Dutch participants tended to completely externalize the climate risks towards poorer communities and countries which they considered to be at greater risk geographically. This is consistent with findings by Bellamy and Hulme (2011), where participants perceived climate change as a risk to poor developing countries rather than to themselves; and Lorenzoni and Pidgeon (2006), who found that climate change is often perceived as an 'unsituated risk'. The Dutch participants considered themselves to be safe because they are financially able to adjust their lifestyles or invest in necessary technologies. Yet such perceptions of control were not only at a personal level in terms of personal access and provision, but also

through expressed trust in science and the government to generate technological solutions that can manage future risks. Similarly, Dutch participants emphasized the role of government in facilitating the projected transformations in their future lifestyles through investing in sustainable transport and in energy efficiency and subsidizing organic products. Several participants preferred government regulations and legislations that promote efficiency and facilitate individual, community, and corporate transitions towards more environmentally-friendly practices, rather than taxations, which most participants were concerned about the implications for rising costs of living in the future. Other studies have also indicated a relationship between trust in institutional actors and understanding of, and support for, environmental risk regulations, green policies, and investment in biotechnology (King et al., 2009; Poortinga & Pidgeon, 2004). Trust in the government to solve the problem also emerged in findings by Rätzzel and Uzzell (2009), who examined British and Swedish youth's environmental concerns and perspectives of causes and solutions. The authors found that participants in both countries shared overall trust in government action but differed in their degree of reliance on governmental action and the need for individual actions, which they attributed to different perceptions of government responsibilities and the role of society; hence emphasizing the importance of the socio-cultural and political context. In the particular Dutch context, KIG NL1 explains that; *"30 years ago, we had dirty water, trees were dying from acid rain, our soil was dirty, and we had extensive waste discharge from companies. The government has addressed these problems, the environment is very important to us...So now we have no really drastic environmental problems because of our policies...focusing more on sustainability problem worldwide, like climate change. We solved our own big environmental problems but now there's a global problem."* This could also explain the captured differences in perspectives between some Dutch participants regarding the key priority areas that their government should focus on over the short and long term and how sustainability fits into such visions and plans.

In addition to the country's financial capability to manage such risks, the widespread perceptions of trust amongst the Dutch participants can be also related to the Netherlands' long history of water management and technical innovation to address its geographic vulnerability to environmental risks such as sea level rise and flooding (Terwel, 2009). According to Kellstedt et al. (2008; p.123); "*the more confidence an individual has in scientists, the less responsible he or she tends to feel for global warming, and the less concerned he or she is about the problem. Perhaps this simply reflects an abundance of confidence that scientists can engineer a set of solutions to mitigate any harmful effects of global warming*". Nevertheless, the Dutch participants who expressed personal concern in FGNL3 mainly discussed the geographic vulnerability of Rotterdam to flooding and storm surges (Klostermann & Cramer, 2006), and their concerns over the inability to manage sudden impacts even if adequate technology is in place. Such concerns were also found in a recent study by de Boer et al. (2012) on the perceptions of Rotterdam citizens, concluding that "*many of the participants seemed to have expected that government agencies would be able to ensure flood safety in the region; however, after they received the description of water nuisance and flood risks they were somewhat less confident about the effectiveness of the agencies to manage the risks.*" (vi).

Amongst the South African participants, perceptions of vulnerability in relation to financial and technical security varied with the participants' socio-demographic profile. Overall, unlike the Dutch participants whose perceived control was partly shaped by their trust in their government to manage climate risks, the South African participants mainly discussed control at an individual or community level. Shared concerns mainly emerged over access to clean water, over biodiversity loss, agricultural challenges, and over long-term health consequences of pollution and poor waste management. Yet these concerns were expressed in terms of impacts at the national or community level, and not all participants expressed worry over personal harm. The South African participants who considered themselves to be safe from climate risks stressed on the need to maintain a certain standard of living or a

certain level of income to be able to afford necessary financial or physical investments. Those who expressed worry discussed the potential risk to their communities and to sustaining livelihoods dependent on natural resources, in the absence of financial means to protect themselves. Similar findings have been generated in studies by BBC (2010) and Bruinders et al. (2009). The literature discusses the role of contextual factors such as livelihood concerns or more immediate life burdens (Weber, 2006), and physical proximity and environmental circumstances (Brody et al., 2008), in influencing people's perceptions of negative impacts and urgency of climate change. This finding can also be related to Weber's (2006) 'finite pool of worry' hypothesis, suggesting that people are worried about more salient and current issues which makes it more difficult to worry about another, especially if it is not a direct threat or challenge.

Overall, the contextual influence on some of the captured concerns amongst the South African participants is evident. For example, concerns regarding future water challenges were often expressed by the South African participants living in KZN area, which is a water-stressed region and constantly suffering from droughts (Reid & Vogel, 2006; Schulze, 2005). These authors also highlight the role of institutional organization, access to resources and information, and local governance as important contextual factors undermining adaptive capacity and local development in KZN. The observed differences in the long-term health concerns from climate change between the Dutch and South African participants can also be understood through the following insights from Vergragt (2006; p.15); *"health care...takes quite different forms in so-called "developing" and "developed" countries. In the South, health care will concentrate on the eradication of poverty-related diseases such as malaria, TBC, diarrhea, typhus, and HIV...and Western and traditional medicines. In the North, health care will concentrate on lifestyle issues, such as achieving balance between work and relaxation, stress reduction by meditation and exercise, healthy nutrition, as well as new drug and medical treatment development"*.

In addition, the concern over the extinction of future nature experiences, which distinctly emerged amongst the South African participants, can be associated to the South African community's aesthetic as well economic connection to their physical environment. At the economic level, Kumar and Sharma (2012) argued that since access to nature is particularly important to the vulnerable communities whose livelihoods depend on natural resources, *"a side effect of environmental degradation is likely to be increased inequality not only in exposure to environmental hazards but also in access to environmental benefits...people whose identity is tied to a particular conception of place are also likely to be strongly affected, directly or indirectly, by changes to existing ecosystems."* (p. 73). At the aesthetic level, this finding can be related to solastalgia (Albrecht, 2005) as discussed in Section 2.3.2, or to *'environmental generativity'* (Milfont et al., 2012; p.331), which is the desire to leave a meaningful socio-cultural legacy on environmental valuing and preservation across generations (Milfont & Sibley, 2012).

The captured concerns amongst some South African participants who discussed the livelihood implications at personal and community levels (such as participants in FG SA6), highlight the importance of focusing on the indirect social and economic implications of climate change vulnerability. Brooks (2003) pointed out that considering reduction in vulnerability to merely necessitate focus on adaptive capacity and technological solutions might disregard the importance of addressing the main causes of vulnerability, including the geopolitical and economic contexts. Similarly, O' Brien et al. (2004) indicated that *"technological adaptations to climate change represent only one of many options – albeit a problematized one due to existing social, economic and political structures that may increase inequality in a community and exacerbate vulnerability for some. Addressing climate change means enhancing the ability to cope with present-day climate variability and long-term climate uncertainty"* (p.12). This could also be related to some South African participants' concerns over the challenges of transitioning to sustainability whilst facing complex challenges on poverty, overpopulation, and equity, and the role of

government in implementing legislations and investing in technologies that maintain their livelihoods and health in the face of changing natural resource base and increasing pollution.

*-Discussing Potential Implications on Well-Being*

The participants' perceptions of vulnerability and control over climate risks and future changes can have important implications on their well-being. Several studies have suggested a connection between financial security and well-being, such as Bennett and Lu (2007) ; Llewellyn and Leonard (2010); and UNICEF (2007b). These studies indicate potential negative impacts for mental and emotional health such as stress, insomnia, and fatigue if people struggle to secure adequate sources of income whilst facing uncontrollable or unpredictable risks such as climate impacts. This can be related to the captured concerns amongst some participants over maintaining financial security to ensure their safety against climate risks and their ability to sustain future lifestyle changes

Also, participants' held concerns over the future consequences of climate change on their health and the long-term dangers of technology impacting their physical, emotional, and mental health. With regards to concerns over the health implications of genetically modified food and other technologically-driven production processes which emerged amongst some Dutch participants, similar insights were highlighted by Krimsky and Shorret (2005) and Vergragt (2006). They pointed to such concerns emerging particularly across Europe, such as contamination of seeds and access to genetically modified food. Also, regarding concerns of unpredictability and uncontrollability of risks even through technology, this can be related to Ulrich Beck's 'risk society' (Giddens, 1998) and the increasing inability to calculate risks. Beck indicates that: "*we live increasingly projected towards the frontiers of high technology, that no one can fully understand and for which no institution can be considered totally responsible*" (Surian, 2011; p.164). Moreover, Vergragt (2006) reflected on the modern social implications of technology which has developed from

tools to an encompassing culture; *"social critics continued to voice concerns about the pace of change and increasing fragmentation of modern life. For these critics, new products and services came at a price. Not only did environmental and health effects become problematic, but the increasing rationalization of all aspects of life through technology led to a deeper feeling of alienation and dislocation. Jobs were lost to automation and to outsourcing of production to low-wage countries"*(p.4). Research has shown that people become more stressed and more vulnerable to stress-related illnesses if they feel they have little control over the causes of stress, its duration and intensity, or if they consider the stress will debilitate their personal circumstances (Sapolsky, 2005; Strazdins & Skeat, 2011). Furthermore, the uncertainty of climate impacts and scope and of future implications can generate feelings of loss of security or control over the future (Kidner, 2007), yet the implications of such negative emotions is less understood *"because of a lack of recognition of subjective feelings of environmental loss in traditional scientific and economic frameworks"* (Kumar & Sharma, 2012; p.69). The ability to cope and adjust to important transformations is also related to the findings on participants' perceived efficacy and agency and the role of institutions in enhancing their sense of empowerment, as further discussed in Section 9.4.

### **9.2.2 Ethical Concerns, Guilt, and Responsibility**

The generated data highlighted a shared concern amongst the participants regarding the social and ethical dimensions of climate change. This theme surfaced in almost every data collection session held in both countries, as participants perceived climate change as an issue of global inequality. The widely shared social and ethical concerns by the study participants is consistent with findings in other studies, such as the survey conducted by Filho (2010), in which 67% of young participants cited the increase in poverty, and 47% cited social issues, as the main problems connected with climate change, and 61% cited social aspects to be their main area of interest of climate change. Also, several in-depth and cross-national or cross-cultural studies

have generated similar findings, such as Bulkeley (2000) and Maibach et al. (2010). Wolf and Moser (2011) concluded that; *"individuals' perceptions about climate change are linked to equity, development, and perceived economic power, where socio-political context and the connection between management and science play an important role in risk perception"* (p.552).

The findings on ethical implications of climate change varied between the Dutch and South African participants, reflecting deeper contextual factors shaping such perceptions. The Dutch participants often expressed feelings of guilt and responsibility over their contribution as an industrialized country and through unsustainable lifestyles to the climate crisis, and their awareness of the climate burdens taking their toll on developing countries. It can be argued that this contrasting reality draws a distinction with deeply ingrained Dutch values of equality and justice (Halman et al., 2011; van Houten, 2007), thus generating feelings of guilt. The South African participants mainly discussed climate ethics in terms of the unfairness of having to face the climate challenges which they have less contributed towards, while at the same time seeking to manage their past social inequalities and advance their social and economic development. KIG SA3 has articulated such challenges on South African community, particularly its youth, indicating that today's youth in South Africa are facing too many overwhelming problems and that whilst past young generations have had to deal with problems of apartheid and social struggles, today's generations need to deal with severe remnants of this system whilst facing their own local and global challenges.

Nevertheless, feelings of guilt do not necessarily lead to changes in behaviour (Moser, 2007) and perceptions of responsibility do not directly enhance self-efficacy. For example, Lowe et al. (2006) found that participants generally agreed on human responsibility for climate change but indicated the need for political support to action. Furthermore, the findings highlight different perspectives amongst participants with regards the graveness of climate risks, with some evoking more emotional reactions than others. For example, some participants envisioned a

climate-threatened future as a global ecological crisis and expressed greater concern or emotional distress over socio-cultural inequalities and ethical implications. Such feelings of worry, guilt, or despair over climate change can adversely impact subjective well-being, and the pessimism often conveyed in climate science and media can create further distress. Fritze et al. (2008) indicated that: "*at the deepest level, the debate about the consequences of climate change gives rise to profound questions about the long-term sustainability of human life and the Earth's environment*" (p.9).

### **9.3 DISCUSSION OF FINDINGS ON PARTICIPANTS' EFFICACY**

The findings on the participants' perceived efficacy highlight the role of socio-cultural and academic institutions in influencing such perceptions of influence and the ensuing forms of participation. The participants also emphasized the importance of reshaping society to a healthier and more secure and sustainable living.

#### **9.3.1 Personal and Educational Experiences, and Forms of Engagement**

The participants' personal and educational experiences appeared to influence their beliefs and understandings of climate change and their perceptions of their role in influencing positive societal change. For example, participants who associated their lack of experience of climate impacts to their inability to relate to climate change at a personal and concrete level (Section 8.3.1.1), can be understood through the perspective of Brace & Geoghegan, 2010; p.291); "*it is precisely because of a social construction of time as 'concrete, immanent and process linked' that imagining a*

*phenomenon like climate change that cannot be defined in these terms remains a problem."*

Also, the findings on the need for a shock for participants to recognize the risks of climate change can be understood in relation to the following description by Dyson (2006; p.120); "*(i) scientific understanding advances rapidly, but (ii) avoidance, denial, and recrimination characterize the overall societal response, therefore (iii) there is relatively little behavioural change, until (iv) evidence of damage becomes plain.*" Such personal dissociation from climate change also appears to have demotivated these participants from engaging in more sustainable actions in their personal lives, as explained by Hulme et al. (2009; p.201); "*the currently 'un-situated' nature of climate change risks for most individuals in the context of their daily personal and social lives constrains engagement with climate change.*" Similar insights have been found by King et al. (2009) and Berry (2010). Also, several studies have associated personal responses to climate change to earlier research on cultural theory, which suggest the presence of some common types of attitudes and cultural worldviews<sup>176</sup> held by individuals around the world, that can influence their perceptions of and attitudes towards climate change (Pendergraft, 1998; Thompson, 2003). For example, studies by Niemeyer et al. (2005) and Ryghaug et al. (2010) have both generated findings which indicate the presence of attitudes ranging from complete scepticism to various degrees of acceptance, which they considered to be partly shaped by the respondents' subjective perceptions and worldviews of climate change and the roles of institutional settings.

Other participants who described changes they've observed in their local community, impacts on personal livelihoods or lifestyles, and extreme events that occurred in their country, discussed their influence on their perceptions of climate change, the positive or negative impact they can make as individuals, as well as their motivation to engage more actively in addressing the climate problems. This can be partly related to the exemplification theory (Zillmann, 2002) in that the participants have

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<sup>176</sup> Solidarist, hierarchist, individualist, egalitarian, fatalist.

based their beliefs and understandings of climate change on certain accessible examples of climate change impacts. However, Whitmarsh (2008) indicated that direct exposure to climate change impacts is not always directly related to greater concern about climate change or motivation for behaviour change. Rather, some studies emphasize the role of pro-environmental values in influencing environmentally-friendly behaviours and motivation to uptake adaptive actions in their everyday life (McNeeley & Huntington, 2007). For instance, several participants discussed the role of upbringing and nature experiences in influencing their environmental connection and concern and their sense of responsibility and efficacy for environmental protection and sustainable practices. Chawla and Flanders (2007) and Kaufman and Rizzini (2002) discussed the role of formative experiences in nature in motivating environmentally-friendly behaviours and in helping shape people's identity as an environmentalist who can influence change. Similarly, Arnold (2009) and Sivek (2002) found young environmental leaders and activists to be strongly influenced by nature experiences, youth groups and gatherings, and role models such as parents and teachers.

Furthermore, the role of personal worldviews, values, and experiences in shaping people's responses to climate change (Weber, 2006) could explain the inter-connections generated in the findings between some participants' visions of future socio-political struggles and inequalities, their upbringing and ethical considerations, and their motivation to engage in actions and activities on climate change and sustainability issues (Section 8.3.1.2). *"The sense of connection to the natural environment that ensues from experiences in nature may be a catalyst not only for responsible use of global resources but also for interest in the viability of diverse and vulnerable populations"* (Johnson et al., 2009; p.54). For example, the participant in FGNL5 who related her vision of complete future devastation and global inequalities, related her concern over nature and people to her upbringing, and indicated that such strong visions have motivated her to engage in climate activism. Hicks (2002) highlighted the importance of envisioning desirable and undesirable

scenarios, which can help people clarify the causes and the visions they are fighting towards or against. At an emotional and psychosocial level, such perceptions of efficacy are also related to the innate need which people have to feel good about themselves and that they can make an impact to the world (Norgaard, 2011). Recent studies show the interconnection between emotional responses to climate change and notions of responsibility and efficacy, as psychological responses to climate change, which in turn influence the forms of participation in individual or collective environmentally friendly actions and behaviours (Reser & Swim, 2011; Weber & Stern, 2011) .

The participants who related their participation in action against climate change and in attempting small lifestyle changes to their personal and educational experiences often discussed the importance of the latter in enhancing their understanding of the connections between the natural and social environment and of climate science (Section 8.3.1.3). The role of education and research on environment-related topics in enhancing knowledge and understanding of such issues as climate change has been emphasized by several researchers and experts (Brinkhurst et al., 2011; Lyndoh, 2005). Nevertheless, the generated data highlight both positive and negative influences from education, as different participants attributed their educational experiences to either their scepticism or their belief in climate change; hence influencing their beliefs in the importance of action and their self-efficacy. In their review of several in-depth studies on climate change engagement, Wolf and Moser (2011) concluded "*an inconclusive relationship between the level of education and the level of understanding of climate change; the relative role of understanding in raising concern and in motivating action*" (p.561).

### **9.3.2 Social and Educational Systems and Reshaping Society**

The findings in Section 8.3.2 highlight the role of the participants' social and educational systems in shaping their personal priorities, the values and meanings they associate to their contributions, and their subsequent forms of participation on climate change and sustainability issues. First, the materialistic or individualistic priorities and concerns that were expressed by some participants, and their unwillingness to engage in more environmentally-friendly behaviours, appear to be influenced by a wider cycle of contextual factors shaping individual and social norms and value systems. For example, participants who stated their reluctance to change their lifestyles in the absence of direct incentives or personal benefits discussed the influence of personal priorities and value systems. According to Barr (2011), climate change is often associated to changes in consumption that challenge habitual practices; hence people become reluctant to adopting new modes of behaviour. This could indicate a relationship between the participants' consumption patterns and lifestyle priorities, and their identity construction and contextual influences. These findings regarding participants' unwillingness to change lifestyle and materialistic socio-cultural value system are congruent with findings in other studies (Jackson, 2005; Lorenzoni et al., 2007; Shove, 2010; UNEP & UNESCO, 2001). For example, the 2001 UNEP/UNESCO survey found that sustainability considerations and environmental impact were less influential on young people's purchasing decisions than factors such as price, trendiness, quality, and peer pressure. Also, Lorenzoni et al. (2007) argued that *"the interdependency between physical infrastructures and social institutions contributes to creating a lock-in which restricts radical innovation and reinforces environmentally-detrimental behaviours. For example, desires for consumption and links to status and cultural values are perpetuated in current western society by marketing mechanisms. To different degrees, participants acknowledged this situation and called for changes in society towards more environmental and community-based values"* (p. 453). In addition, numerous studies have explored the relationship between personal and cultural values and motivation to undertake environmentally-friendly practices (Schultz & Zelezny 1998; Stern, 2000). For instance, Mayer and Frantz (2004)

found that people who are more empathic and less self-focused are more likely to develop a personal connection with nature, to undertake pro-environmental attitudes, and have value systems that are focused beyond one's immediate social circle.

In addition, the findings indicate a relationship between the participants' willingness to participate in environmentally-friendly behaviours, the value and significance they associate to such behaviours, and their perceived efficacy (Sections 8.3.2.1.2 & 8.3.2.1.3). Studies have shown that persons with higher perceived efficacy are more likely to define climate change as risky (Bord et al., 1998; Brody et al., 2008). Gifford et al. (2009) found that people who consider environmental threats to be spatially and temporally distant are less willing to engage in present environmentally-friendly actions. Wardekker et al. (2008) also pointed to the importance of frames in allocating responsibility and efficacy of action. For example, most study participants who perceived climate change as a scientific or technological issue tended to perceive market and technology innovators as primary actors. With regards to social contextual influences, scholars find that individuals who regard themselves as capable of positively affecting climate change, as well as influencing others in their social network to behave in ways that mitigate the problem, are significantly more likely to regard the risk seriously and take corrective actions (Brody et al., 2008; Milfont & Sibley, 2012).

Furthermore, several participants blamed the disconnected thinking in personal lifestyles and consumption patterns on wider marketing and governance systems driving such unsustainable views and practices. This can be related to Uzzell's (2008) argument; *"trying to persuade people to consumer and waste less through behaviour change programmes will not address larger and more significant problems concerning the ways under which people need or think they need to live and consume"* (p.4). Other participants criticized western or capitalistic systems and the market society for fostering unsustainable systems of value and practice; similar findings were captured by Jackson (2005). Jackson argued that; *"consumption can*

*be viewed as a functional attempt to improve individual and collective well-being by providing the goods and services necessary to meet people's wants and desires. This linear view of consumption is, by and large, the one encoded in conventional economics...Stressing the 'insatiability' of consumer desire and the Motivating Sustainable Consumption 'sovereignty' of consumer choice, economics takes a broadly utilitarian approach to evaluating consumer goods and services" (p10).*

- ***Reshaping Society***

Numerous participants discussed the need to reshape society and influence more sustainable values and worldviews. The participants' emphasis on the role of different stakeholders on driving such new modes of thinking, valuing, and living through structural as well as social and technical changes, highlights their understanding of the importance of addressing a multiplicity of contextual factors and of engaging multiple stakeholders (Elzen et al., 2004). Participants blamed the prevalent social worldviews of disconnected thinking, goals of material profit, and unsustainable and resource-consuming lifestyles to the lack of critical and holistic thinking in current education, to cultural systems emphasizing personal profit and advancement, and to economic governance systems focused on accumulating capital and abusing resources. They emphasized the role of education and socio-cultural systems in driving such changes, giving examples of current academic and institutional systems which are fostering individualistic thinking and profit-aimed unsustainable practices. Various researchers and experts have indicated that people's practices and behaviours are embedded in social and institutional contexts and cultural norms, and have stressed on the need for fundamental societal transformations (DEFRA, 2005; Jackson, 2005; Shove, 2010). "*Relevant societal innovation is that in which contemporary rules of the game are eroded; in which the status-quo is called into question; and in which more sustainable regimes of technologies, routines, forms of know-how, conventions, markets, and expectations take hold across all domains of daily life*" (Shove, 2009; p.1278).

Various KIGs in both countries (NL4, NL6, SA8, SA12) have also highlighted the role of media in changing their social and cultural systems to more sustainable worldviews and practices. Similarly, various studies have examined the role of civil society movements and bottom-up approaches in influencing changes towards more sustainable practices and policies (Hall et al., 2010b; Kelly & Pollitt, 2011), concluding that bottom-up approaches are often considerably influential in reaching out to community members, communicating relevant approaches and techniques, and generating a sense of connection and empowerment which encourages collective actions to address collective problems.

In particular, the role of education institutions in vitalizing this shift in paradigms and practices is being increasingly emphasized. Sterling (2003) suggested that current education often influences people to *'compete and consume' rather than to 'care and conserve'* (p.2) and that the majority of educational theory and practice still unsustainable practices. Marinova and McGrath (2004) emphasized the importance of developing educational approaches that address global contradictions regarding the natural environment and human well-being. Also, Warburton (2003) pointed out that *"the challenge for educational institutions is not simply to teach concrete facts about the environment but to create an active, transformative process of learning that allows values to be lived out and debated, and permits a unification of theory and practice."* (p. 55). Thus, embedding education for sustainability across the functions of higher education institutions provides an opportunity for uncovering current value systems, ways of thinking, practices, and the pedagogies influencing their formation, and to confront current ways of relating and valuing the ecosystem, utilizing resources, and to reflect on the interconnections with the wider community (Benessia et al., 2012; Tilbury et al., 2002; Wals & Jickling, 2002). Nevertheless, the extent to which current higher education institutions are advancing such system transformations and empowering youth to lead the sustainability transition, remains arguable, according to several scholars. Blum (2012), Fien and Tilbury (2002), Lee (2007), and UNESCO (2005) have all emphasized the importance of implementing

education for sustainability formally and non-formally through collaborations amongst academic, governmental, corporate, and civic stakeholders. Consideration of the local context in which such educational change is being implemented is also essential. Lotz-Sisitka and Kronlid (2009) indicated that "*climate change education processes, like other socio-ecological issues and risks, engage normative and moral concerns, and hence involve ethical deliberations and processes of engaging critically with moral concerns and ethical questions in education*" (p.12). The findings in this study capture insights into such dynamics of youth engagement and their wider education and learning processes, as further discussed in Section 9.4.

Furthermore, from a well-being perspective, Jensen et al. (2005) indicated that youth often feel overwhelmed and powerless in relation to health and environmental problems. They emphasize action-oriented learning processes that can empower youth to effect changes. "*Action-oriented teaching and learning contributes to student's ownership and the development of their action competence: the ability to initiate and bring about positive change in health and environmental problems*" (p.122).

Finally, numerous participants criticized modern lifestyles and production and consumption processes that disconnect people from the natural sources of their food, products, and services, and from experiencing changes in their surrounding environment. Wolf and Moser (2011) argued that such disconnection from nature, in addition to reducing environmental care and motivation, results in people relying on mediated sources of information through the media, social interactions, or educational institutions. For instance, the study participants stressed on the importance of reconnecting with nature and re-establishing society's intrinsic valuation of the natural environment to enhance well-being and promote sustainable living. As Duke (2010), Nisbet et al. (2009), Schultz et al. (2004), and others have argued, when people feel concern and value for nature, they will see themselves as part of the natural world and will want to protect and preserve it. Naess (1973) coined the term 'ecological identity' to describe such profound understandings and

interconnectedness with the natural environment. *"An ecological identity includes the self, the human and nonhuman community, and the planet's ecosystems, so that damage to the planet is seen as damage to the self"* (Nisbet et al., 2009; p. 717). Furthermore, the literature highlights the importance of contact and affiliation with nature for promoting positive physical and mental well-being and enhancing emotional, intellectual, and social development (Johnson et al., 2009; Kahn, 2001; Kellert, 2002). Also, Nurse et al. (2010) found that contact with nature and increased green spaces, in addition to increasing capacity for adaptation and mitigation by reducing CO<sub>2</sub> emissions and provision of cooling in heat-waves, has positive psychosocial and mental health effects. Studies have shown reduced stress and aggression, enhanced work performance in the office, positive mood, as well as increased social interaction and cohesion (Kaplan & Kaplan, 1995; Wells & Evans, 2003). Also, increased availability of areas of green spaces and increased nature experiences promotes a more active lifestyle, which has been shown to enhance physical and mental health and well-being (Crone, 2007; Crone et al., 2009; Graham et al., 2009).

### **9.3.3 Influence of Communication Approach on Participants' Engagement**

In Section 8.3.2.3, the findings highlight the different perspectives held by participants regarding the influence of the prevalent communication approach on their perceptions, feelings, and perceived efficacy. Whilst some participants blamed the negative and ambiguous communication approach for generating personal disregard and dissociation from the climate crisis, others discussed feelings of personal worry and potential risk in the future influenced by media stories and documentaries depicting current and future impacts. Hulme (2009) argued that; *"one of the reasons we disagree about climate change is that we receive multiple and conflicting messages about climate change and we interpret them in different ways"* (p. 215). Overall, the literature cites the abstract and technical communication

approach on climate change as an important reason behind young people's disconnection from this global crisis (Carvalho & Burgess, 2005; Lorenzoni et al., 2007). Kincheloe (2005) highlighted the role of emotional engagement with such abstract and pessimistic messages in mediating people's understandings of climate change; *"the production of meaning contrary to traditional rationalistic and dominant cultural notions is more tied to affective and emotional investments than previously realized"* (p.149). Other studies have found that visualizations, imagery, and other communication tools which promote fear are rather ineffective in motivating personal engagement (O'Neill & Nicholson-Cole, 2009; Sheppard, 2005), as opposed to non-threatening and non-manipulative tools that relate to people's personal lives and daily concerns. The negativity of communicating climate change is also demonstrated in the emotional burdens expressed by the participant in SA event 2 when communicating the human suffering caused by extreme events and climate-induced disasters. Such emotional and mental reactions to climate change communication can generate feelings of hopelessness, despair, and disempowerment which can impede active and interactive engagement (Ojala, 2012).

In addition, the participants who expressed feelings of confusion or doubt over the reality and severity of climate change through unreliable communication, can also be understood within the wider literature. Lorenzoni et al. (2007) indicated that ambivalence over climate change is generated through unreliable and conflicting scientific evidence and political debate and inaction, which *"are exacerbated by media portrayal of climate change, which tends to highlight scientific and political disagreement"* (p. 452). Lorenzoni et al. also argued that the quality of climate change science and consensus have not been enough to compel people to change their behaviour. Hulme et al. (2009) addressed the incongruence between scientific knowledge about climate change and the timeframes for individual action, arguing that scientific narratives about future climate change are based on intervals of decades to centuries while most people make decisions and structure their behaviour on more immediate timescales. Findings by Leiserowitz (2007) and Nicholson-Cole

(2005) suggested that climate change communication can generate greater salience among the public if local or regional climate impacts presently taking place are discussed, rather than projecting future changes, and if possible implications to people's health or quality of life are highlighted. Furthermore, some researchers argue that people sometimes use emotional-response strategies, such as denial or externalization of responsibility, to handle climate change psychologically (Lorenzoni et al., 2007; Stoll-Kleeman et al., 2001). Such strategies are perceived to cause people to distance themselves from the climate crisis and consider themselves unable to help or control the situation. Such emotion-related coping (Folkman, 2008) can sometimes be related to increased stress and lower psychological well-being.

The findings also highlight the connection between participants who felt overwhelmed or fatigued by the negativity of climate change, and the emotional and mental modes of distraction they undertake to avoid such topics and avoid having to change lifestyle. This can be understood, according to Moser (2007) and Randall (2009), in terms of psychosocial defense mechanisms or emotional responses which prevent people from seeking more information about the problem and lower perceived ability to influence changes given the magnitude of climate threats. Also, Bellamy and Hulme (2011), and O'Neill and Nicholson-Cole (2009) concluded that inducing fear is more likely to cause alienation rather than engagement. Strazdins and Skeat (2011) argued that conveying positive images of the future provide a wider sense of meaning in life and enable people to identify with, and work towards, social goals and priorities beyond their individual interests. Conversely, pessimism about the future can reinforce the appeal of materialistic and individualistic values, which are also hostile to wellbeing (Eckersley et al., 2005).

#### **9.3.4 Social and Political Frames and Trust in Government Influence**

##### **Participants' Engagement**

The findings in Section 8.3.2.4 highlight the influence of the participants' social and political framing of climate change and sustainability issues on their perceptions of responsibility and efficacy as individuals and communities. Stereotyping environmental concern and action as a hippie, greenie, or radical activist is found to elicit negative reactions and dissociate youth from seeing a role or responsibility for themselves in such practices, which is congruent with findings by Bashir (2010) and Wright (2012). Lorenzoni et al (2007) pointed to the relationship between perceived risk and responsibility to climate change, and social and political referents. Other studies have shown that people are more likely to interact and engage with those of whom they have a positive impression or feel a connection towards in terms of worldview, interests, and values (Montoya & Horton, 2004), which could explain the alienation that some participants described with regards to their peers' engagement with environmental issues.

Important contextual dynamics emerged within these findings, as for instance the social framing of climate change as a 'white man's thing' amongst some South African participants. A study by the BBC (2010) on the perceptions of South Africans regarding climate change elicited similar results; *"while people are concerned about the changes they have witnessed in their immediate environment, there is a tendency to view climate change as a 'green' topic that is the domain of environmentalists and the urban elite"* (p. 30). Several researchers have examined the ways in which environmental issues are interrelated with social identities and group belonging (Opotow & Brook, 2003; Rabinovich et al., 2008). For example, social identity theory proposes consideration of the comparative context, as people's values and norms are partly attributed to the social and cultural groups to which they belong. This influences their interactions and forms of engagement with groups or people that they perceive to be different (Duke, 2010). KIG SA 5 further explained such cultural dynamics, indicating that; *"these stereotypes of green issues, especially in South Africa, can severely disrupt real contributions and involvement of different social groups...It's partly related to our history of social struggles and the lack of*

*trust in each other...things we are trying to work on now as different communities. I think the best way is to work as communities together to restore that bond".*

Some participants attributed their form of engagement with climate change to their religious beliefs. Several studies have examined the role of faith-based beliefs on people's understandings of and engagement with climate change (Donner, 2007; Wilson, 2012). For example, Bostrom and Lashof (2007) indicated a similar insight to that captured in this study with participant in FG SA8 (Section 8.3.2.4), in which the climate change impacts are viewed as punishment for people's actions, which they have to accept. *"This 'God Frame' leaves little if any room for human activity as a cause, and therefore for a role for humans in mitigating emissions....raise questions about whether and how to help prepare strongly belief-based societies for adaptation or convince them of 'green' development pathways"* (Wolf & Moser, 2011; p.560). Nevertheless, the data captured in INT SA16 reflect a more positive influence through faith, as the participant discussed trying to enhance people's beliefs in their roles to undertake actions against climate change by associating themes of social justice and helping one another (Wilkinson, 2010).

The findings on political framing mainly emerged amongst the Dutch participants, which could be related to the fact that environmental issues are often politically-steered in the Netherlands through national and regional European dynamics (Milie, 2007), and that the Dutch government has had an important role historically in managing the climate challenges to the country (Döpp, 2009; Veerman, 2008). This is contrary to the South African context, in which the government has had multiple priorities and burdens that might have steered away focus from less urgent and more long-term environmental concerns. KIG SA6 argues that the complexity of challenges in South Africa has resulted in more community-led initiatives to manage local environmental concerns.

Amongst the Dutch participants, perspectives varied on the roles of youth and citizens versus role of the government, with arguments focused on political

affiliation and efficiency. While some criticized their current right-wing government for not prioritizing sustainability issues (Section 8.2.2.2), the findings in Section 8.3.2.4 capture the support and trust amongst some Dutch participants that the current government can take care of such concerns. The participant in FG NL8 associated the sustainability worldview to 'leftist elites', which he considered to be imposing changes that generate negative responses and rejection from the general public. Maibach et al. (2009) associated between attitudes supporting environmental growth or economic growth to their participants' political orientation and altruistic or individualistic values. Feygina et al. (2010) identified a relationship between conservative political orientation and scepticism about climate change, which is congruent with the perspectives expressed by the participant in FG NL8. This could also explain the differences in the participants' level of trust in government to act on climate change and sustainability issues. The arguments made by participants who relied on government-led solutions and strategies mainly revolved around greater efficiency and impact. Others described their ethical responsibility for acting on climate change, as related to social and environmental equity, development, and economic power. Similar insights have been captured by other studies on moral (Bulkeley, 2000) and civic (Wolf, 2010) responsibilities.

Meetings with key informants enhanced the understanding of such political frames. For example, KIG NL2 discussed the ways in which *"the current government was cutting down the funding in various environmental and social/literature fields so it can focus on economic growth and stabilizing the market system"*. He explained that such cuts in funding were creating difficulties for environmental groups, especially those headed or initiated by young people, to maintain their expenses and to undertake their community projects. He also highlighted problems of inconsistency in terms of government support for climate change and sustainability programmes, which he described as *"continuous shifting based on priority and interest of the ruling political side"*. He gave the example of the previous Minister of Environment who in the past was head of Friends of the Earth Netherlands, and who was

supportive to the work of environmental groups as he knew the field and was engaged with local stakeholders and networks.

## **9.4 DISCUSSION OF FINDINGS ON PARTICIPANTS' AGENCY**

The findings on the participants' agency reveal that they associate power with positions of autonomy, decision-making, and financial stability through their jobs, and with the mobilization that technological innovations provide. The participants' sense of empowerment and meaningful participation are also found to be enhanced through interpersonal interactions and multi-stakeholder collaborations, and impeded through distinct socio-cultural, academic, and political barriers.

### **9.4.1 Empowerment Through the Job and Role of Education**

The findings in Section 8.4.1.1 demonstrate the participants' perceptions of enhanced agency through positions of power and influence in their future jobs. Participants associated their jobs to higher incomes which would enable them to make sustainable choices in their daily lives, particularly in their consumption patterns. Participants also discussed empowerment through the contributions and innovations that they could undertake in their future work decisions and actions. Fritze et al. (2008) discussed the career opportunities that climate challenges may induce and their ability to enhance people's resilience; “...galvanize creative ideas and actions in ways that transform and strengthen the resilience of and creativity of community and individuals” (p. 9). Also, a study on green jobs (UNEP, 2008) indicated that climate change will impact labour markets through the creation of new jobs and substitution and transformation of existing jobs, and even job elimination in cases when adequate replacements do not apply. For example, new jobs will be created in the construction

sector for infrastructure investments or building coastal defenses and green buildings. Also, certain job requirements will be redefined as society shifts from fossil fuels to renewable, and with the increased focus of the industrial sector on clean technologies and of the service sector on energy savings (ILO, 2012). Fankhauser et al. (2008) indicated that the biggest employment effect of climate change will be felt over the long-term through structural adjustments and technical innovations triggered by new climate policies, in which the authors emphasize the importance of innovation and new job creation and growth.

Within such transitions to a green economy and important transformations in job requirements and tasks, researchers and experts are increasingly emphasizing the importance of adequately preparing today's young generations to efficiently manage such changes in their future lives and careers (Garrison & Archer, 2000; Orr, 2004; Wals & Jickling, 2002). According to Barnett (2000), climate change is characterized by 'supercomplexity', necessitating new forms of education and learning that enable young people to influence positive changes. Similarly, Hughes (2011) discussed the need for "*...a critical, collaborative and constructivist pedagogy as a means to enact this...and to equip the learners to enact what they had learned and so aid the transition to the sort of culture, society and economy necessary to mitigate and adapt to climate change.*" (p. 59-60). In this study, the participants' discussions revealed important insights regarding the extent to which their current education and learning is equipping them with the necessary skills and competencies for a sustainability-oriented job market. Several participants criticized the low priority for climate change and sustainability education in their current institutional programmes and courses, which impeded their ability to develop skills which they consider to be needed in their future jobs. The study had captured in Section 8.3.2.2 the participants' insights regarding the need for educational programmes that enhance their critical and reflective thinking, holistic worldview, and teamwork with people from different disciplines. Thus, their perceptions of power through their jobs, and their agency to influence the changes they envision,

might be diminished in the absence of adequate education and training to enhance their employability and performance. This is further manifested in the concerns raised by the South African journalism students in SA event 3 in which they described their low sense of empowerment to influence change in the absence of educational programmes that enhance their skills and competencies to adequately and clearly communicate the climate change problem and viable alternatives to their communities.

Similar insights into the need for such skills were discussed by young participants in the study by Burandt and Barth (2010); "*problem-orientation and the need to act and decide within complex real-life problems where multiple perspectives had to be integrated, was mentioned as the main precondition to acquiring new knowledge and skills*" (p. 12). Numerous scholars and institutions have emphasized the importance of developing such important skills for youth to function and succeed in the future society and job market, such as El Ansari and Stibbe (2009); ILO (2008); Lotz-Sisitka (2009a); and Tilbury et al. (2002). Furthermore, with regards to the future visions in which participants described the transformations taking place in their lifestyles, communities, and careers, it is important that youth are empowered to work towards efficiently achieving these visions. Kagawa (2007) indicated that; "*pedagogies also need to help students envision their preferred futures. Not only encouraging visioning of, but also supporting actions towards desired futures, as well as pre-empting undesired futures, will be key in this regard*" (p.334).

Another important theme emerging from the data is the value of technology as an empowering tool towards sustainability. Many participants discussed the importance of technological innovations in facilitating the transition to more sustainable lifestyles and empowering people to make informed decisions. The South African participants also discussed the potential for developing new renewable and green technologies that can be developed from their rich natural resource base. The South African participants in SA event 3 also indicated that technologies and new media enhance their access to information and provides a platform for youth to voice their

concerns and to connect with local and global networks. The literature is increasingly highlighting the importance of technology and new media in youth empowerment through facilitating and advancing communication, interaction, and knowledge, and encouraging collective action and networking between youth and stakeholder in diverse contexts and locations (Bennett, 2008; Yocco et al., 2011). Speth (2009) noted that "*advances in technology, notably the Internet, have empowered them (youth) in an unprecedented way, enabling them to access information and mobilize across political and cultural boundaries*" (p.19).

- *Distinct Contextual Themes*

The distinct themes emerging within these findings highlight important contextual differences regarding the ways in which current educational programmes in the Netherlands and South Africa are preparing their youth for leading towards a sustainable society and improved work performance and quality of life. For example, the Dutch participants discussed the lack of depth or proper skills development in their sustainability courses, which can hamper a more profound and holistic understanding of the sustainability worldview and of the theoretical and practical skills they will need for managing future lifestyle and workplace changes. KIG NL5 explains that "*new government has announced 9 branches of industry for Netherlands to be leading, such as chemistry; life sciences; bio-based economy; and creative industry...the development agendas on economic reform have sustainability as an underlying principle. But at the same time they are cutting a lot of funds and investments from arts, culture, environmental studies...sure this will have an impact on how higher education manages. But anyway in Netherlands HE can decide their own programmes. So it also needs to come from there.*"

The South African participants discussed the lack of proper teacher training on environmental topics, and the impact of the socio-economic context on youth's academic choices. The insights which have emerged in other studies exploring ESD

in South Africa can enhance the understanding of these findings. For example, Moodley (2010) found that the environmental education programmes in the Gauteng province "*had very little or no focus on the social and economic aspects of the environment...the practitioners samples in the study were trained in environmental education and there appears to have been no formal training regarding education for sustainable development*" (p.64). Also, Panday (2002) found similar findings with regards to the low prioritization of environmental education and the lack of teacher training within the South African academic context. The author recommended that environmental education be integrated into the curriculum of all pre-service teacher training courses, and that schools and universities engage all role players in environmental education initiatives and activities, particularly in issues that are of local relevance to students. Panday (2002) also emphasized the role of the government in funding sustainability initiatives in educational institutions, and of media in raising awareness and instigating reflection regarding various environmental concerns. Similar arguments were made by Bopape (2009) regarding the incorporation of environmental education into teacher professional development programmes in South Africa. McKeowen and Hopkins (2010) and Wals and Jickling (2002) also emphasized that educating for change requires engaging teachers in this change process, and the climate change and ESD education need to be locally and culturally appropriate.

Regarding the findings on the economically-shaped influences on some South African participants' choice of educational specialization, integrating ESD into educational programmes can help manifest the interconnections between the natural and social world, and "*how participatory social learning research may be a conversion factor in the expansion of capabilities that people require and value in their relations with changing socio-ecological conditions*" (Lotz-Sisitka & Kronlid, 2009; p.65). Furthermore, Lotz-Sisitka (2002) indicated that environmental education in southern Africa is key to investing in both human development as well as the protection of the environment to ensure sustainable livelihoods and safe

environments. *"In contexts where livelihoods are often dependent on access to, and use of the natural resource base, wide spread environmental degradation takes on life threatening, political dimensions, and environmental education processes become significant as critical processes of re-orientation and change with political, economic, social, cultural, and biophysical dimensions"* (p.104).

#### **9.4.2 Interpersonal Influences, Youth Initiatives and Collaborations**

The findings in Sections 8.4.2 and 8.4.3 demonstrate the importance of interpersonal influences, social interaction and learning, and multi-stakeholder collaborations for enhancing young people's understandings of climate change and sustainability, their perceived efficacy and agency to impact change. First, numerous participants indicated that they influenced small changes in others through their personal lifestyles and social conversations. This indicates the importance of such informal processes of engagement and learning. Johnson et al. (2009) reported a case-study of a youth program designed to build intercultural connections and to provide platforms for social interactions that enhance youth's capacity to address environmental and social problems in their local communities as well as globally. Johnson et al. found that such interactions enhanced youth's self-efficacy, social competence, and sense of civic responsibility. Also, Kumar and Sharma (2012) observed that pro-environmental behaviour can generate intrinsic benefits such as a sense of sharing, participation, and competence. These insights can also be related to the distinct theme emerging amongst the South African participants regarding their increased motivation and sense of empowerment through their collaborations with other youth. Langford (2002) and Maiteny (2002) indicated that people may respond to climate threats with social engagement, which can enhance their sense of empowerment and well-being. In addition, Hamilton and Redmond (2010) discussed the importance of interpersonal relationships, sense of belonging to the community,

and connection to social and academic institutions in enhancing young people's social and emotional well-being. Similar insights into the particular South African setting have been found by El Ansari and Phillips (2001a) who emphasized that; "*the lessons learnt from these South African cases are that wide representation, commitment and a sense of ownership, sound leadership skills, regular and effective communication, reliable member expertise and capabilities and attention to power issues are crucial elements in the partnership equation*" (p. 119). Thus, as particularly observed in SA event 2, the opportunities and spaces created for meaningful youth engagement and enhanced leadership through dialogue and shared experiences and partnerships, enhances these youth's sense of empowerment and well-being. As Arnold et al. (2009) concluded; "*evident from the interviews are patterns that deepen understandings of environmental youth leadership. In every case, the participant's relations with other passionate and influential people combined uniquely with powerful experiences as the key to becoming a young environmental leader*" (p. 361).

The value of such interactions and collaborations is also demonstrated through the Dutch participants' discussions of the importance of collaborations amongst youth and between different organizations for promoting their representational power and influence. Similar findings have been generated by Brooks (2003) and Duke (2010), and Mosch and Prast (2008) in the particular Dutch context. The latter found that the relatively high level of interpersonal trust amongst Dutch people positively influenced their trust in public and private institutions and their sense of empowerment and influence through joint civic collaborations.

#### **- *Youth Initiatives and Importance of Collaborations***

The findings in Sections 8.4.3 highlight the different youth-initiated and youth-led projects and practices in which the participants are engaging, and the opportunities and challenges they are facing in their endeavours.

### *At the Academic Level*

Several participants described the projects they are working on in order to raise awareness amongst their peers and communities on the importance of environmentally-friendly behaviours and the significance of small lifestyle changes. They often discussed the importance of devising strategies that are fun, creative, engaging, and locally relevant in order to attract youth, and of making use of academic spaces to influence changes in the structure, curriculum, and campus processes and practices. The importance of developing such academic platforms for youth engagement and for collaborations with other key players in their universities and colleges was evident as they discussed outputs of greater efficiency and influence. For example, the study findings highlight the structural, bureaucratic, and logistical barriers that some youth were facing in their attempts to engage their universities and colleges in more sustainable practices. The combination of top-down and bottom-up approaches that other participants were strategizing in their projects demonstrated the benefits of working with the student body whilst partnering with the university administration for expanding the scope of participation and impact. Bangay and Blum (2010) and Hughes (2011) emphasized the importance of student-university collaborations for bringing sustainability into the curriculum and campus. Hughes argued for extending the students' engagement and learning beyond the classroom towards the domain of action so that their learning processes become applied and they feel empowered to enact changes in their academic and social settings.

Also, participants often discussed the challenges of sustaining student engagement and of attaining actual commitment from their peers towards their environmental groups and projects. Barber (2009) and Rosev and Arjannikova (2008) found similar findings on the difficulty of sustaining student interest as numerous participants lost motivation or faced structural barriers which impeded or complicated their active engagement in environmentally-friendly behaviours. Ojala

(2008) argued that today's youth are living in times of extensive changes and that "*many different issues compete for young people's attention*" (p. 43). Ojala highlighted the importance of designing campaigns to promote pro-environmental behaviour from the perspective of the life-worlds of youth themselves, and that they be informed of the ways in which such initiatives are beneficial and applicable. Moreover, some participants discussed the importance of engaging youth in the different phases of a project or endeavour rather than just asking them to attend events as passive recipients. Similar themes emerged with young participants in studies by Golombek (2002) and Jensen et al. (2005), who recommended that youth initiatives not only be targeted at youth as audience but also aim to meaningfully engage their peers in decision-making, planning, and implementing the projects.

The difficulty of sustaining student interest and engagement was also found in study by Emanuel (2011), who described it as 'commitment gap', which he associated to the youth's wider socio-cultural setting and the presence of sustainability initiatives in the community; "*student responses are reflecting the state of sustainable practices in the community where their campus is located. Thus, regardless of whether the student lives on- or off-campus, their personal commitment to campus sustainability is an extension of practices they are already engaged in which are being supported by their community*" (p. 89). Emanuel recommended that university administrations don't wait for off-campus initiatives but lead the way in establishing more sustainable practices on campus and providing opportunities for students and staff to engage in sustainability initiatives. This further highlights the value of collaborations between youth, administrative stakeholders, and the community for enhancing sustainability initiatives and increasing youth agency.

### ***At the Social and Political Level***

The participants discussed the barriers to engaging their communities in more sustainable practices. A shared theme amongst participants from both countries was

the difficulty of facing the cultural norms and ingrained habits in society to influence small behaviour changes such as less meat consumption or balanced water use. The study captured insight into some culture-specific aspects within these themes through the observations and interactions that the researcher undertook in particular events. For instance, the Dutch participants in NL event 1 indicated that the challenge lies in the conformist Dutch culture and the difficulty of posing or imposing radical changes to an already established system. The conversation with KIG NL 6 captures that; *"In the Netherlands we have liberal regulations. Consumers have to ask for sustainable products, for changes that they want. But also, citizens think that it's the responsibility of the government. So who pushes who?"*

The South African participants discussed the challenges of undertaking or even communicating sustainability visions and initiatives within their local communities whilst the country and the people are facing more pressing social and economic challenges. Nkono and Schoole (2007) and the BBC study (2010) generated similar insights regarding the disempowerment that South African youth experience as they attempt to raise awareness and encourage more sustainable practices while lacking answers to their communities demands for viable alternatives that secure their livelihoods. Another important disempowering factor constituted the cultural barriers that some participants discussed with regards to their inability to gain the trust of elders or other racial groups in their communities, and the language barriers to communicating climate challenges. These findings reflect the important influence of the socio-cultural context on the participants' sense of empowerment and agency. Ziervogel et al. (2008) and Renton et al. (2011) captured similar themes in their study; the latter concluded that; *"black and minority ethnic young people and those from deprived backgrounds more likely to feel a sense of disempowerment"* (p. 4). Also, KIG SA 9 indicated that the social and political mistrust in South Africa has contributed to doubting self-efficacy and externalizing responsibility of action from the individual to the national, even international, level.

At the political level, participants discussed the opportunities and challenges to influencing political decisions to greater prioritization and incorporation of sustainability initiatives. At a personal level, the barriers to making lifestyle changes towards sustainability differed between the two countries' participants. The Dutch participants' discussions mainly focused on consumption. Most were concerned about the high cost of, their lack of trust in, and difficulty of evaluating or identifying, organic food and other sustainable products. The South African participants cited inconvenience as a major barrier to living more sustainably, as many discussed the lack of enabling infrastructures and proper enforcement of environmental regulations as impeding factors. Several other studies have cited structural barriers to youth participation and empowerment in their personal lives (Dolby, 2001; Kagawa, 2007; Lorenzoni et al., 2007; UNYP, 2011). For example, Lorenzoni et al. indicated that "*participants, even when willing to take action, often maintained that their behaviour was constrained by the lack of enabling infrastructures and mechanisms. For instance, they pointed to a lack of affordable and reliable public transport in their locality, higher prices of environmentally-friendly goods, design of the built environment encouraging car use, lack of disincentives to pollute (e.g., higher car tax for bigger cars)*" (p.458). Similarly, Rosev and Arjannikova (2008) stated that "*while students reported some measure of agency to effect small environmental changes, obstacles in the form of government and political resistance, societal and individual apathy, ignorance, lack of opportunity, and lack of access to resources continued to function as significant deterrents to action.*" (p.1). These findings suggest that rather than focus on the provision of information, policy attention should be directed to the social and institutional barriers that act to constrain youth involvement in addressing global environmental issues.

Furthermore, the study gained insight into the different pathways in which the participants were actively involved in environmental activism (participating in environmental organizations, demonstration), non-activist behaviour in the public

sphere (support or acceptance of policies on environmental protection or higher taxation), private-sphere environmentalism (individual or household consumption patterns, waste disposal), and other environmentally significant behaviours (influencing actions of organizations towards greater sustainability considerations or innovations). Similar pathways of youth participation were found by Hajat et al. (2010), Rosev and Arjannikova (2008), and Stern (2000). Nevertheless, participants often discussed the limited impact that their initiatives can make in the absence of complementary actions and support by governments and industries. They viewed collaborations with the government and businesses as essential for driving the transition to sustainability. Various participants discussed the need for governments to initiate actions in some areas such as ensuring supportive institutions and infrastructures (such as reduction in costs of sustainable products, subsidies for sustainable agriculture) to enable action at an individual level. The South African participants also discussed the need for raising public awareness and education on the causes and impacts of climate change, especially amongst the impoverished and illiterate communities. They stressed on the importance of public investment and funding in research, dissemination of knowledge, and awareness raising on viable alternatives to unsustainable practices. KIG SA8 explained that; *"We need to devise programs to raise awareness in rural areas and city peripheries. Majority of our society lives in poverty, what lens do we use to see sustainability?...There has been increase in poverty, in health risks, in food insecurity mainly in marginalized areas, in environmental degradation; decrease in well-being; in some cases increase in institutional efficacy, but now exacerbated by economic meltdown...We need a different framework of sustainable development here...We need to think about the society we want to build, to have for the future, and without the collaboration of all community members, this won't be possible in an efficient way. That's why educating these people is so important, but it has to be delivered in the right way, relevant, easy, with alternatives to maintain livelihoods."*

Within such themes, several participants also emphasized the critical role played by the media in raising public awareness on climate change, on sustainable lifestyles, and on the health benefits of sustainable living through positive and locally relevant messages and reports. They also highlighted the role of the media in influencing social and political change through triggering debate on the role of the government and of citizens with regards to global and local environmental issues. The importance of media communication that targets different population groups and that generates creative and constructive discussions which encourage small actions have been highlighted by several scholars such as Anderson (2009), Hulme (2009), and O'Neill and Boykoff (2011).

South African participants also argued for the enhanced provision of spaces for youth to meaningfully participate in the decisions and strategies that influence their future. They also discussed the importance of providing adequate guiding structures that enhance young people's competencies as leaders who can make change in their communities and who can meaningfully participate in decision-making processes nationally and globally. This finding also relates to the insights provided by Jensen and Schnack (1997), who distinguished between environmental activities and actions. They argued that activities such as clean-up campaigns would not constitute action because they do not directly address root causes and therefore lack deliberate choice or intent of the young people involved. They also described the characteristics of settings that promote positive youth development, including appropriate structure, supportive relationships, opportunities to belong, support for efficacy, opportunities for skill-building, and integration of multi-stakeholder efforts.

# **CHAPTER 10. FINAL DISCUSSION, RECOMMENDATIONS, AND REFLECTIONS**

## **10.1 INTRODUCTION**

The aim of this study has been to critically explore youth engagement with climate change and well-being from multiple perspectives that are studied contextually and holistically. It has sought to generate rich and in-depth understandings of the Dutch and South African participants' engagement based on their diverse experiential and contextual backgrounds. It has emphasized the importance of context in shaping the participants' engagement with the research issues, and has sought to critically explore the dynamic interrelationships of such engagement within existing social and institutional systems and local cultures. Methodologically, the study has emphasized the importance of social interactions for constructing the participants' understandings of the research issues, and of analytical and holistic understanding of the participants' engagement through the critical exploration of the institutional structures and power relations within which such engagement is taking place. Furthermore, the dynamic and flexible nature of this critically interpretivist study has meant that the study design was constantly evolving as the research process developed and as new opportunities and findings emerged. Multiple methods have been used to achieve holistic understanding. The data collection methods have been interactive and flexible, have emphasized the participants' experiential and interactive theme construction, and have employed critical interpretation through documentation, analysis, and critique of societal systems. The researcher's positioning in this study has been participatory, reflective, and reflexive. Overall, this thesis has sought to provide a clear, coherent, and valid depiction of the entire research process and to demonstrate theoretical and methodological alignment.

This final chapter seeks to review key findings in the study, generate in-depth discussions on inter-relationships between key themes (10.2), present recommendations for key audience groups across policy and practice and propose future research areas (Section 10.3), and reflect on the contributions and limitations of this study (Section 10.4).

## **10.2 YOUTH ENGAGEMENT WITH CLIMATE CHANGE AND WELL-BEING: KEY FINDINGS**

The study has gained deeper insight into the critical, experiential, and contextual factors shaping young people's engagement with climate change and well-being. The generated findings capture important inter-relationships between diverse themes, which enhances the understanding about the complexities forming and influencing these relationships in particular settings. The study finds that the participants' vulnerability, efficacy and agency, with regards to climate change and well-being, are strongly intertwined and contextually developed. Overall, the key findings indicate that youth engagement with climate change and well-being is strongly shaped by youth perceptions of autonomy and control, by interpersonal, educational, and socialization influences within the youth's cultural, academic, and political institutions, and by the power dynamics forming these relationships. The identified inter-relationships between various dimensions of the participants' vulnerability, efficacy, and agency, with consideration of the contextual setting, are discussed in the next sections.

### **10.2.1 To reduce their vulnerability, Youth need skills to function in a transforming society and an increasingly green economy: The role of educational and socio-political institutions**

The findings indicate that the participants associate their vulnerability to climate change to their level of control over its risks and to their competencies to manage the ensuing changes in their future personal, social, and professional lives. Their association of control to financial, technical, and professional autonomy implies that they will need to ensure their employability, to provide financial means for protection against future climate effects. In order to enhance their employability and job performance, youth will need to acquire and develop important skills in an

increasingly green economy (ILO, 2010; Jerneck & Olsson, 2011). Duke (2010) and Ojala (2008) argued that most technological innovations and tools will require that young people are able to properly manage such innovations in their jobs and in their everyday lives. Yet the findings indicate that the participants consider their current educational experiences as less efficiently preparing them for an increasingly challenging workplace and lifestyle.

Various scholars have emphasized that the future workplace will require skills in critical and fore-sighted thinking, collaboration amongst different disciplines, and innovative solutions for efficient management of scarce resources (De La Harpe & Thomas, 2010; Fahey, 2012; Schreiner et al., 2005; Schusler & Krasny, 2008). For example, Speth (2009) argued that young people's efforts to address complex sustainability challenges can be limited by lack of information, knowledge, and proper skills. Within the current economic crisis and rising unemployment concerns, the European Commission (2009) considered that skills are "*the best insurance against unemployment and an important factor for personal development and active citizenship*" (p. 2). Lyndoh (2005) focused on youth in technical and vocational education (TVET), indicating that as they are learning working habits that will be carried on throughout their working lives, it is important that sustainability issues are adequately addressed in curricula to instil environmental-friendly work habits. Lyndoh identified several barriers to incorporating sustainability values and education to youth in TVET for employment creation,; "*lack of targeted education, employment and training services to serve young people's employment needs...lack of access and appropriate use of new technologies to impart TVET to support youth employment...lack of enabling policies and partnerships for youth employment...lack of credit and other services to serve youth in generating self-employment after education and training...discrimination against young people - and specifically young women.*" (p. 23)

In the Netherlands, the PBL (2011) warned that the Dutch working population is aging and expected to decline further, arguing towards more innovation, better

education and a greener economy to maintain prosperity and deal with the long-term climate challenges. *"The quality of education is crucial in delivering a highly skilled working population that meets the needs of employers. This is even more important because the working population is ageing and expected to decline. Between 2010 and 2040, in the Netherlands, the number of people over the age of 65 in relation to the potential working population will increase from a ratio of 1:4 to that of 1:2"* (p. 22-23). van den Berge (2010) also pointed to the rising unemployment rates in the Netherlands, especially for low-skilled workers, yet highlights the future potential for greater job opportunities in fields related to climate mitigation such as renewable energy and public transport and infrastructure. Similarly in South Africa, Lotz-Sisitka (2009b) emphasized that *"the realities of high levels of dysfunctionality, poor resources, high drop-out rates, and poor quality teaching in the school system in South Africa and in the majority world temper the idealism of education for sustainable development"* (p.44).

Therefore, higher education institutions play a key role in empowering young people to face the rising challenges to their livelihoods, health, and future welfare. HEIs need to focus on experiential and interdisciplinary learning which can enhance young people's holistic and critical understanding of different academic and social disciplines, and prepare them for professional work (Hayden et al., 2011; Pascarella & Terenzini, 2005). Matthews and Waterman (2010) indicated that skills, values, and aptitudes are advanced through 'learning by doing' pedagogies for sustainability literacy. They emphasized that *"learning by doing goes beyond the idea that core, disciplinary or technical knowledge is straightforwardly transmitted through uncomplicated processes of teaching and learning. Rather it involves hands-on activities which facilitate knowledge, skills application, and adaptation"* (p.83). Also, Speth (2009) and Hayden et al. (2011) indicated that empowering youth towards action requires the provision of non-formal and informal learning experiences outside the direct academic arena, through fostering youth groups,

community and media collaborations, and artistic dimensions, whilst tailoring such informal learning spaces to meet particular cultural dynamics. Governments have a main responsibility in supporting and facilitating the incorporation of the visions and techniques of sustainability literacy into academic curricula (Breiting et al., 2009; Mula & Tilbury, 2009). These dynamics are best summarized by the UNDESA report (2010);

*"With climate change expected to bring about major shifts in the labour market and with unprecedented numbers of youth entering the labour market in the years to come, Governments must strive to ensure that young people are ready to take advantage of new environment-oriented employment opportunities. Green energy operators have noted that one of the primary impediments to continued growth in the coming years will be insufficient access to new talent and employees. Although some progress has been made in providing young people with the knowledge and technical skills they need to take advantage of new employment opportunities afforded by the shift to a greener economy, much remains to be done." (p.42)*

As stated by UNESCO (2005), whilst education and learning on their own cannot attain a more sustainable future, yet without education and learning for sustainable development, that goal would not be reached.

Finally, from a well-being perspective, concern over future risk has been found to generate emotional and social distress (Barber, 2009; Hajat et al., 2010) , and the lack of adequate and stable employment can adversely impact young people's physical, mental, and emotional health, social cohesion, and sense of autonomy (Marks et al., 2006; Weissbecker, 2011). Hicks (2002) indicated that a key role for educators for empowering young learners is acknowledging that *"learning about global issues can never be solely a cognitive matter"* (p. 99). Hicks emphasized the importance of applying pedagogies that generate hope and empowerment amongst students, of focusing on the emotional aspects of learning in a globalized world, and

of supporting students to envision desirable futures. He nevertheless noted the current challenges to implementing such processes in higher education institutions, as learning is “*still largely treated as a cognitive affair, with some attention possibly being paid to attitudes and values where this seems appropriate*” and, in turn, the learners “*resist the affective*” (p. 108). In addition to the key role played by educational institutions, the study findings have highlighted the importance of interpersonal influences, social learning, and a sense of belonging and community ownership in encouraging youth to remain hopeful and to impact social change. Similarly, White (2008) emphasized the *relational* character of wellbeing, which concerns ‘personal and social relations’; she emphasizes “*relations of love and care; networks of support; relations with the state: law, politics, welfare; social, political and cultural identities and inequalities...and scope for personal and collective action and influence*” (p.7).

#### **10.2.2 To increase their self-efficacy, Youth need clarification of their worldviews, and motivation and support for their contributions: The role of education and media in re-shaping social values and worldviews**

The findings highlight the participants’ association of meaningful contribution to tangible, visible, and wide-scale impacts. The participants’ discussions also highlight a cycle of influencing factors in which current individualistic and materialistic educational approaches, profit-based economies, and disconnected societies, are altogether intertwined and reciprocally driving each other. This ultimately influences the participants’ perceived efficacy for individual and collective change. Adaptive capacity is influenced not only by economic and technological development, but also by social norms, values, and rules (Klein & Smith, 2003; Nielsen & Reenberg, 2010). The study considers that fostering the participants’ self-efficacy requires that the values and meanings they associate to their actions be reconstructed. This requires that such connections are made clear in these youth’s minds, visible in their

actions, and alive in the media. This would help transform their current perspectives regarding individual contributions as small and insignificant. It guides them to associate their actions to the resources they are preserving, wastes they are reducing, and lives they are helping. Encouraging such sustainability-centered values and practices requires educational and social systems that help youth reconnect with nature, with each other, and with future generations (Bangay & Blum, 2010; Sterling, 2003). An educational approach focused on sustainable development can develop such dynamic and interdisciplinary worldviews and help reframe social and economic values so that people connect with the power and influence of their actions (Seyfang, 2005; Tilbury & Wortman, 2004).

In addition, researchers are increasingly focusing on the affective or emotional dimension of climate change engagement, which is considered to form a link between knowledge or attitudes, and actions (Wolf & Moser, 2010). For example, studies by Leiserowitz (2007) and Weber (2006, 2010) have shown that environmentally-conscious people are more engaged at the cognitive, behavioural, and emotional level. Other studies have found that people find it difficult to make their actions or contributions meaningful even when they are willing to make changes (Birnbacher, 2000). Milfont et al. (2012) argued that climate change presents intra and intergenerational dilemmas of social conflicts (individual vs. collective interests) and temporal conflicts (short- vs. long-term interests), which pose a trade-off between personal interest and the interest of future generations. In the context of this study, participants who were more actively engaged in changing personal behaviours and attempting to influence similar changes in their peers and communities tended to have more long-term perspectives. These findings also highlight the influence of time perspective on pro-environmental attitudes and behaviours, as "*future-oriented individuals tend to both care about the environment and act to address environmental issues more than present-oriented individuals*" (Milfont et al., 2012; p.3).

Insight was also gained into some participants' beliefs in greater efficiency and impact through government initiatives and legislations as compared to individual efficacy. Rathzell and Uzell (2009) argued that pressure from the government is the main driver of socially responsible practices when individuals fail to see the connection between their local actions and its global effects. They conclude that *"if individuals cannot experience themselves as part of society, because society is organised in such a manner that forces them into competitive and individualistic behaviours, they are also unlikely to experience their local and personal actions or the activities of their local government as part of wider events, as impacting on other areas of the world. The same dualistic thinking that constructs a dichotomy between individuals and society also influences constructing a dichotomy between the local and the global, resulting in a psycho-social dislocation"* (Räthzel & Uzzell, 2009, p.335).

Furthermore, a clearer, more positive and coherent communication approach can contribute to youth empowerment on climate change through enhancing their understandings on the issue, emphasizing interconnections in the ecosystem, highlighting the implications of individual actions and lifestyles, and demonstrating exciting endeavors taking place across the globe (Moser & Dilling, 2007; Nisbet, 2009). An engaging and reflective communication approach can also encourage youth to envision more positive changes they would like to see for their future and reflect on ways to work towards it (Hulme et al., 2009). Moreover, Hayden et al. (2011) and Spoel et al. (2009) argued that communication on climate change is more effective when emotional, ethical, and logical components are interwoven together, rather than relying solely on negative and fear-inducing messages, which might further reduce perceived efficacy and de-motivate action. Also, from an emotion theory perspective, Folkman (2008), Folkman and Moskowitz (2000), and Ojala (2008) argued that worry can lead people to focus their attention on problems rather than solutions; whereas positive emotions generate enthusiasm and encourage creative and critical thinking and action. Thus, positive emotions with regards to the

communication and confrontation of global climate challenges can reduce feelings of powerlessness and help young people face their concerns in more optimistic perspectives and constructive actions.

**10.2.3 To enhance their agency, Youth need guidance on how to organize themselves and how to be influential and efficient; and need enabling structures and collaborative platforms to contribute to change.**

The findings highlight the importance of supporting and strengthening youth-initiated and youth-led projects and practices in order to foster meaningful engagement with real impact and enhance youth empowerment. Numerous participants described the ways in which their collaborations with academic, social, and political institutions increased the effectiveness and efficiency of their initiatives. Participants also discussed the importance of providing adequate guiding structures that enhance their competencies as leaders to make change in their communities. The literature emphasizes that genuine forms of participation, such as consultation and shared decision-making, are distinguished by honesty and clarity about the extent of young people's power and opportunity to choose to participate to their ability and interest (Hart, 1997; Jennings et al., 2006). The study found numerous contextual factors impeding participants' agency to impact changes towards sustainability. This manifests the need for enabling infrastructure and supportive socio-cultural and political systems for enhancing youth empowerment. DEFRA's Framework for Pro-Environmental Behaviours (2008) discussed the positive motivators - "*the feel good factor; social norms; individual benefits (e.g. health, financial outlay); ease; being part of something;* and the negative barriers- "*external constraints (infrastructure, cost, working patterns, demands on time); habit; scepticism; disempowerment*" (p.7) - that influence people's undertaking of environmentally-friendly behaviours.

The insights gained into the different forms and pathways of participation that the participants were undertaking also demonstrate different levels of institutional influence and power within such initiatives. Emmons (1997) defined positive environmental action as “*a deliberate strategy that involves decisions, planning, implementation, and reflection . . . to achieve a specific positive environmental outcome*” (p. 35). It is thus important to understand the personal and contextual factors motivating young people to go beyond behaviours to initiating action. Jensen and Schnack (2006) indicated that the focus should be on the ways in which young people develop an action competence, as they decide on and initiate their own actions rather than merely respond to changes or endeavours in their surroundings. “*Action creates change, whereas behaviour may only perpetuate accepted norms.*” (Arnold et al., 2009; p.28). In the context of this study, some participants discussed the leadership initiatives they are undertaking within their communities in driving bottom-up changes by attempting to influence their social milieu and political decision-making. Others described the leadership position they are aiming to attain through their future jobs as they gain positions of power socially and professionally. These participants articulated the importance of provision of adequate social and political spaces for enhancing their competencies and skills, and their recognition as a representational group with the power to make an impact. Ultimately, the challenge remains in aligning youth voices, visions, priorities, and actions with wider institutional agendas and decisions (Joselowsky, 2007).

Several scholars also point out that authentic participation and leadership skills are indicators of healthy development (DFID, 2010; Haslam, 2004; Johnson et al., 2009; Scales et al., 2000). The enhanced knowledge, understanding, and skills that meaningful participation generates can boost young people's morale, improve their mental and emotional health, and expand their belief in their efficacy. Strategies for addressing problem-solving in a positive and efficient manner have also been found to reduce stress levels and generate sense of belonging and strengthened social relationships between members of a community. It has also been found to enhance

people's sense of empowerment to respond and cope to global environmental challenges (Patchen, 2006). Nyoni (2009) indicated that "*participation is a key element of any change or development process. Inclusion gives people an important sense of self and a connection to the world they live in*" (p. 87). Thus, meaningful youth engagement and empowerment to impact positive changes for their future can enhance young people's sense of well-being.

### **10.3 KEY RECOMMENDATIONS FOR KEY AUDIENCE GROUPS**

The critical interpretivist research approach undertaken in this study has enabled the uncovering of socially constructed and contested understandings of youth vulnerability, efficacy, agency, and other dimensions of engagement with climate change and well-being. It has also enabled critical analysis of the role of societal institutions and power inequalities and differentials in enhancing or impeding meaningful youth engagement and participation. The two countries and diverse contexts within which such investigations were focused have provided important settings for exploring youth engagement in-depth and holistically. Nevertheless, the key conclusions from this study serve to inform and improve the wider youth engagement spectrum. In this section, the researcher takes a step back from the pieces and details of the study findings, seeking to draw out a broader and more coherent picture on youth engagement, which would be relevant to a broad community of researchers, practitioners, and policy-makers involved in youth engagement with climate change, sustainability, and well-being. It provides detail on types of capacity building or participation that should be developed to strengthen engagement opportunities for those who develop and design opportunities for youth. As highlighted by Taplin (2003); "*one of the more important aspects of environmental research is that it is undertaken with the aspiration that it will induce*

*change and even if environmental policy is not altered overtly, a social learning process (Milbrath 1989:338-340) for those who come into contact with the research can be invoked"* (p.10). The core messages drawn out from this study, and key recommendations for key audience groups, are discussed below. In each of the subsequent segments a, b, c, and d, key conclusions from the study are highlighted, followed by recommendations for policy, practice, and future research areas.

a) A key conclusion from this study is the need for more critical and empowering platforms and pathways that promote meaningful youth engagement with climate change and sustainability and enhance youth well-being. Educational, socio-cultural, and political institutions are instrumental in increasing conscious power-sharing amongst youth and other stakeholders regarding the visions, decisions, and actions towards a more secure and sustainable society.

*Major implications for policy;*

- Governments should devise policies and strategies that empower youth to meaningfully address and collaborate on solving community challenges towards sustainability. Such policies and strategies should entail; a) academic restructuring towards education and learning for sustainability to develop critical and reflective thinking, holistic worldviews, and sustainability skills in the workplace; b) government partnerships with private stakeholders to enhance youth access to information, resources, and technical, entrepreneurial, and leadership skills; and c) formal and legislative recognition of youth groups and institutions to enhance their positioning as key stakeholders in society. As critical social change requires change in policies, social values, and organizational structures (Jennings et al., 2006), such opportunities empower youth to develop critical awareness and reflective action of socio-political processes and practices, cultural norms, and institutional and demographic power differentials. Purdey et al. (1994)

argue that “*capacity-building results from an ongoing and repetitive process of analysis, action, and reflection. The term empowerment is a reflexive verb, signifying that individuals can only empower themselves*” (p.330).

- Governments and international youth organizations should institutionalize mechanisms and platforms for youth participation in expert and wider stakeholder consultations and decisions on policies and programmes that shape their future. In particular, it is recommended that formal platforms be established for fostering youth leadership in upcoming debates regarding the agendas, visions, and strategies for post-2014 DESD and post-2015 MDGs.
- Governments must drive partnerships with educational institutions, civic organizations, and health disciplines in order to develop, provide, monitor and evaluate policies and programmes that manage the rising public health concerns from current and future climate risks. Such programmes should emphasize multi-disciplinary research and practice into themes including climate-induced diseases and illnesses, public health implications of technological innovations, training of healthcare providers on climate-related epidemiological monitoring and documentation, and delivery of health services and insurance in times of natural disasters and extreme weather events. Crone and Baker (2012) highlight "*the changing health concerns in society, the relevance of partnership and multi disciplinary working, and the need to explore alternative approaches to service delivery and evaluation*" (p. 477).

*Major implications for practice;*

- Sustainable innovation forums should expand to include youth who need platforms to showcase their ideas and initiatives, and financial and technical support and expertise. For example, the upcoming 'Sustainable Innovation

Expo 2013' by UNEP "*presents an opportunity for just 20 multinationals and niche providers to exhibit and showcase their sustainable solutions, innovations and technologies directly to an assembled audience of Environment Ministers and senior officials*"<sup>177</sup>. It is recommended that formal platforms be integrated within such events for youth organizations to contribute to the debates and ideas taking place and present their innovations.

- In order to improve media coverage and public impact on climate change and sustainability issues, first it is recommended that creative, innovative, and humorous approaches be devised in collaboration with young people. Second, it is also recommended that fundamental aspects of climate change and sustainability education and training be integrated into the curricula or courses of journalism students in order to enhance their understandings of these issues; hence enhancing their perceived efficacy and agency in influencing their audience. Third, upcoming international environmental conferences (such as COP18 and the UNESCO World Conference on Education for Sustainable Development 2014) should provide fellowships for young journalism students to build their competencies and networks in covering and reporting such events.
  
- Stronger collaborations amongst international, national, and local youth organizations is recommended, with a focus on developing joint innovative technologies, capacity building programmes, and transfer of knowledge and best practice across diverse communities, both developed and developing. However, El Ansari and Phillips (2001b) indicate that; "*while the stakeholders value their partnerships, some of the costs associated with their participation may affect their satisfaction and commitment*" (p.351). Thus, such partnerships require continuous access to financial and technical

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<sup>177</sup> [www.climateactionprogramme.org/GMEF\\_2013](http://www.climateactionprogramme.org/GMEF_2013)

resources and professional expertise (through support from public and private entities) in order to be sustainable and effective over the long-term. It is therefore suggested that national and local youth councils be formally and legislatively established in order to mediate and coordinate such efforts across different stakeholders.

- It is recommended that organizations and initiatives engaging young people invest in follow-up, monitoring, and evaluation mechanisms that seek to support and improve established youth projects and provide continuous guidance for effective youth leadership.
- It is recommended that youth nature groups which seek to engage a wider youth and community spectrum, highlight the added value of nature experiences in promoting mental and emotional health, a sense of enjoyment and connection, and increased social cohesion and sense of belonging.

There will be opportunities for addressing these issues in several upcoming international youth forums, such as the 8<sup>th</sup> UNESCO Youth Forum 2013 (key priorities in thematic agenda encompass Employability, Democracy and Sustainable Communities), and in the World Youth Conference 2014 (seeks to facilitate effective youth participation and partnerships in the implementation of the post - 2015 development agenda).

*Recommendations for future research areas;*

- Research is needed to examine and improve processes of supporting higher education youth leaders in balancing educational and leadership tasks and the positive and/or negative influences on their health, performance, and overall sense of well-being.

- Critical action research is needed for developing contextually-relevant indicators and monitoring and evaluation mechanisms, for identifying, assessing, and advancing existing youth-adult partnerships and youth leadership programs around themes of climate change and sustainability.
- Public health researchers need to undertake inter-disciplinary studies that assess, from a medical perspective, the physiological, mental, emotional, and functional implications of climate challenges and ensuing threats to youth security, employment, and development prospects.
- Research is needed to critically explore the influence of, and ways to enhance, youth leaders' skills and competencies in empowering youth peers and wider community and in fostering leadership skills for effective public-health focused partnerships.
- The findings on participants' level of trust in technology over the long-term highlight the need for more in-depth research that critically investigates the advantages and disadvantages of the long-term pathways that a technologically-driven world would create, and the extent to which today's youth, especially HE youth, are enabled and empowered to contribute to such decisions.
- Research is needed for developing contextually-relevant models for incorporating affect, cultural worldviews, and ethical values in the assessment criteria made by policymakers on young people's climate risk perceptions, policy preferences, and behaviours. Such models can compliment policy decisions which are often based on technical assessments of scientific probabilities and consequences, or economic costs and benefits (Lorenzoni, 2007).

b) Another key theme emerging from this study is the contextual power differentials that shape youth efficacy and agency. The study findings highlight a relationship between young people's efficacy and agency, and their particular demographic, socio-cultural, and academic differentials. Personal (gender, socio-economic status, academic background) and social (race, culture, language, political affiliation) attributes seem to strongly influence not only young people's beliefs in their role and capabilities as agents of change, but also the type of opportunities and challenges that they face in participation and leadership. For example, the social and political lenses through which numerous study participants framed climate change and sustainability issues have been influenced by existing socio-cultural stereotypes, and have influenced their beliefs in their roles and influence and in their chosen methods of participation.

*Major implications for policy;*

- Governments should allocate sufficient funds, and work in partnership with local public entities and the private sector, towards achieving enabling environments for youth and community transition towards sustainability. This includes removing legal and regulatory barriers that impede the meaningful participation and empowerment of young people on climate change response mechanisms. It also necessitates investment in social infrastructure that facilitates sustainable living. Particular areas of priority entail investing in physical infrastructure and personnel training on sustainability, and enhancing equal and efficient distribution and management of environmental programmes such as recycling across different regions (especially in developing countries); providing financial and technical support to young farmers and subsidizing sustainable produce; investing in the development of public transport; and ensuring transparency and quality of sustainable products and services.

- Governments and international agencies should increase investment in sustainability research and financial and technical support for young researchers in developing countries, particularly in Africa, the most vulnerable continent to climate change. This would serve to manage the fragmented nature of research in the region and to further empower young researchers in the field.

*Major implications for practice;*

- Academic institutions and local youth organizations should develop strategies for promoting a more reflexive process of youth empowerment. Young people need to recognize empowerment not only as an external factor or process controlled by other stakeholder institutions (schools and universities, community, government, NGOs) or as merely controlled by access to opportunities, contextual influences, and institutional power dynamics. Rather, such institutions should develop visionary leaders who recognize empowerment as entailing a critical personal and reflexive process<sup>178</sup> (Jennings et al., 2006). Participants should be encouraged to critically reflect on their rights and capabilities, and associate their efficacy and agency to their shared judgment of their roles, responsibilities, and capabilities within their particular contextual setting.
- Collaborations should be fostered between small youth-initiated and led sustainability organizations and their larger national and international counterparts. Partnerships and guided leadership would enhance young people's leadership skills so that they are able to better organize themselves, identify their target audience and attract more participants, and apply

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<sup>178</sup> A process of actively and reflectively analyzing one's roles and actions.

meaningful and influential projects with real impact. With regards to the socio-cultural challenges that numerous participants were facing in their initiatives, the guided leadership and management can empower young people to communicate effectively with their communities on sustainability choices and possibilities, identify alternative solutions for sustaining livelihoods or for maintaining quality of life while reducing consumption, and devise locally-relevant approaches within existing social and cultural identities. Such partnering strategies have been found to be more successful than targeting drastic changes in lifestyle, value systems, or structures towards sustainability without recognition of and collaboration with other local stakeholders across different disciplines (Kahler, 2003; Mansilla & Jackson, 2011).

*Recommendations for future research areas;*

- Research is needed for enhancing in-depth understanding of the ways in which contextual settings in particular countries influence youth engagement across power inequalities or differentials, such as social class, gender, culture, language, and educational status.
  
- Critical action research is needed to explore the role of inter-personal influences and social interactions in enhancing awareness and understanding of climate change and sustainability issues, and instigating more environmentally-friendly practices. Key questions to ask entail whether specific social groupings or particular cultural norms may be more conducive of such influences; the possibilities for influencing fundamental changes in value systems through organized and youth-led social learning processes; and the best approaches and main players to capitalize on and invest in such processes.

- Critical interpretivist researchers should explore the multiple dimensions of engagement and empowerment of youth from lower socio-economic backgrounds, who have less 'privileged' opportunities and spaces for education, learning, and employment, with climate change and sustainability issues and the implications on their well-being.
- Practice-based research is needed to critically explore the intersection between particular youth demographics (gender, race, language, culture, academic background) and youth experiences of empowerment and agency.

c) A key theme to highlight entails the future prospects for youth employment and welfare within an increasingly interconnected, technologically-driven, and sustainability-oriented workplace. The study finds that the worldviews, competences, skills, and networks of today's young generations, particularly higher education youth, need to be comprehensively enhanced to enable them to lead their communities and overall society into a more secure and sustainable future.

*Major implications for policy;*

- Governments need to make sure that long-term visions for sustainability literacy and learning are aligned with the visions and strategies of higher education institutions. Governments, in partnership with higher education institutions, should address the economic, social, and employment consequences of climate change in ways that render climate policies '*job-literate*' (ILO, 2010; p.129) through appropriate curriculum development and regular assessment. This also includes promoting vocational and technical educational programmes centered around sustainability worldviews and skills and green innovation. Such systems can also encourage industries and

businesses across the private sector to review their strategies and reflect on the ways in which they can meaningfully engage youth in working towards adequate transitions in their ways of learning, living, and working.

- Forums, workshops, and policy meetings held by national governments, private sector, and international organizations on sustainability innovations should integrate youth voices. In particular, higher education youth should be involved in the dialogues, decisions, and mechanisms regarding the incorporation of technology into daily life, agricultural and industrial practices, and formal work spaces<sup>179</sup>.

*Major implications for practice;*

- Local governments should devise public training schemes that can fill the current skills gaps across diverse youth and adult stakeholders. (ILO, 2010; Moser, 2007). They should also ensure social and gender equity in formal and informal skills development schemes, through training and recruitment of women for green jobs, in order to manage the current under-representation of women in technical jobs such as manufacturing, construction, and energy sectors (Stevens, 2009) and ensure their inclusion throughout the transition to a green economy.
- Industries and businesses should develop programmes, internships, and special vacancies for building the capacity of higher education youth in

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<sup>179</sup> Relating to the study findings on varying perspectives amongst participants in their trust in technological solutions and innovations over the long-term.

learning practical and action-oriented sustainability skills and practices in the workplace.

*Recommendations for future research areas;*

- Exploring the dynamics and possibilities of youth employment within current complexities of global economic recession, rising challenges from climate change, and pressing need for transition to energy efficiency and sustainable economy. Key questions to ask entail the ways in which changing environmental circumstances affect the working conditions of young workers; whether job creation in emerging sectors can address the rising problem of youth unemployment; whether youth in diverse sectors have adequate skills to manage and operate a changing working environment; and whether gender balance is being considered and addressed within the transition to green jobs (ILO, 2010; Stevens, 2009). Answering these questions requires multiple systematic studies with quantitative and qualitative tools and across different countries and youth populations.
  
- Quantitative and qualitative research is needed to investigate the ways in which policy decisions and legislations regarding technological sustainability innovations are made and the extent to which youth are being meaningfully engaged in developing such decisions. For instance, Vergragt (2006) indicates that; "*the questions about who makes decisions about the development and direction of new technologies have seldom been asked and even less often answered*" (p.4-5).

d) A final key theme emerging in this study is the importance of reflective and active collaborations amongst youth and with other community stakeholders for enhancing youth well-being. The emotional and mental burdens of confronting future climate

challenges can be diminished through providing spaces for interpersonal reflection and interaction and collective action. Sharing experiences, future visions, and action programmes can promote a sense of bonding and promote partnerships to jointly secure a more sustainable future. Youth who undertake environmental actions in a group setting were also found to experience a more optimistic vision for the future and a belief in their individual and collective agency to influence change.

*Major implications for policy;*

- Governments should create platforms for youth to collaborate and to review processes for national and local climate adaptation and mitigation strategies and overall development agendas. This also requires strengthening multi-stakeholder partnerships with young people to enhance their competences and skills in contributing to such platforms.
- Governments and medical institutions and practitioners should provide and regularly monitor access to youth-tailored health and well-being services including emotional and mental healthcare, and insurance and risks governance tools that adequately address future climate challenges that youth will be facing. Investment is also required in the medical/hospital infrastructure to strengthen capacities for managing potential future climate-induced disasters, particularly in developing countries.

*Major implications for practice;*

- Youth, civic, and environmental organizations should develop environmental programmes that promote social interactions and activities not only between youth but also across different stakeholders in society, and especially in natural settings. This also requires that local governments work on increasing green spaces and enhancing the environmental condition of local areas.

*Recommendations for future research areas;*

- Critical interpretivist research is needed to investigate and improve processes of critical reflection, futures thinking, and collective action in current youth-targeted programmes, events, and forums.
- Future quantitative and qualitative studies need to investigate the relational character of well-being and the ways in which personal and social relations can enhance young people's willingness to participate in civic and environmental projects and develop a more positive future outlook.
- Participatory action research should examine the intersections between environmental experiences and proximity to nature, and enhanced youth development, engagement, and well-being. For instance, Johnson et al. (2009) point out that "*despite knowledge about the extent of environmental threats and the psychological benefits of direct contact with nature, explicit attention to the natural environment has been notably lacking in the youth development, education, and programming literature*" (p. 76).

## **10.4 FINAL REFLECTIONS ON CONTRIBUTIONS AND LIMITATIONS OF THE STUDY**

This study has generated in-depth and contextual insight into the wide-ranging and multiple dynamics of youth engagement with climate change and well-being. It has identified the main opportunities and challenges that higher education youth, in two different country contexts, are facing in their everyday lives, academic and socio-political spheres, and examined potential implications on their well-being. The study has also considered the long-term possibilities and opportunities for enhancing youth engagement, meaningful participation, and empowerment on inter-connected global

and local issues that will influence their future. It has examined ways to promote social justice and strengthen power relations between young people and their community and government systems, especially that "*young people will implement what is decided today, and will live with the consequences*" (UNFPA, 2009; p. 43). As indicated by Lotz-Sisitka and Kronlid (2009); "*educational researchers that take seriously the diverse, local challenges and possibilities of climate change impacts, capabilities and responses, along with the impacts and possibilities for renewal of society associated with other related socioecological issues (such as those represented in this journal) are among those 'many people taking small steps' to connect politics, ethics and life, representation and capacity building.*" (p.17). It is the hope of the researcher that this study has contributed to advancing the understanding of such dynamic and complex inter-relationships on youth engagement with climate change and well-being.

Nevertheless, it is important to recognize certain limitations of this study which entail the following:

First, the researcher recognizes that certain aspects of this research journey might not have been as consistently precise as theoretically planned on paper in the initial stages of the study. This is a natural and dynamic feature of qualitative interpretivist research, and a valuable dynamic that allows the researcher to adequately improve the study design to tailor to local relevance (Radnor, 2007; Ritchie & Lewis, 2003). However, the study's main design, application, analytical strategies, and important research decisions did undergo critical examination and can be validated. Ultimately, it is important to keep in mind that this research has been a learning process, and the researcher has had a tremendous learning experience throughout this journey.

### **Reflections on the fieldwork and lessons learnt**

In the following segments, the researcher shares the main lessons learnt and personal reflections regarding various aspects of this study, including the evolution of the research design and fieldwork, and limitations of the study.

### ***Concerning the Research Design***

- A main challenge in this research was managing the contextual dynamics while maintaining focus on the study objectives and the coherence of the theoretical and methodological perspectives. The following entry in the researcher's journal manifests the systematic thinking that guided the fieldwork process;

*I wanted to be attentive to consistency between different data collection sessions and methods, and between the various regions I visited. I kept a list of all places, people, and groups that I visited and examined how they related to my main research questions and objectives. I tried to identify missing links or gaps in the fieldwork or data generated. I was also guided in this phase by the simultaneous data analysis which I was conducting throughout the data collection process. This helped me identify emerging themes, discrepancies in the data, and develop important fieldwork steps to follow."* (Research Journal, September 12; 2011)

- The process of data collection was a mix of formal planning, important networking, and a series of unanticipated/opportunistic events. The research process hence continued to develop throughout the fieldwork, and new events, focus group sessions, and interviews continued to be arranged until the last day in each country. It is essential to emphasize the importance of networking in helping design and develop the fieldwork process. The more meetings that took place, institutions visited, and people interviewed in each area, the more the schedule became filled with various data collection schemes and the richer the data set became.
- The decision to extend the fieldwork phase in South Africa also demonstrates the importance of the dynamic study design. The initial fieldwork plan was

to try completing the data collection in one visit to South Africa during the month of July 2011, and extend till August as necessary. This turned out to be an unversed plan, as the country context and on-the-ground interactions would naturally dictate themselves onto the research design and the fieldwork progression. The decision was also based on the need for more time to complete the fieldwork, to be able to explore the South African youth's engagement through a more diverse group of participants in different geographic areas and socio-cultural and academic backgrounds.

The following entry in the researcher's journal clarifies the decision to adjust the plan for South Africa fieldwork;

*"My plan was to design the fieldwork in South Africa in a similar way to what I did in Netherlands: I was based in one place (Wageningen) and then traveled to other locations as needed. But the enormous South African landscape hinders this plan and I will have to keep moving from one province to another for the fieldwork. I could only have learnt this through experiencing it, as a plan on paper is often adjusted on the ground...I was now more aware of the South African landscape and of the need to move through different provinces in the country to conduct this fieldwork. So, I decided to extend my stay until the final event in which I had been given a chance to take part as an observer (taking place end-September in Cape Town), and to try to conduct as much fieldwork as I could within these 2 remaining months. I tried to divide my time adequately between different provinces/areas. I decided to stay in Durban next, then Johannesburg/Pretoria, and finally Cape Town." (Research Journal, July 28, 2011)*

- The iterative nature of the study design meant that data collection and analysis were taking place simultaneously. Thus, the second visit to the Netherlands enabled the exploration of themes that were still un-saturated in

the data and meetings with more interviewees and key informants. Also, the transitional phase between the two fieldwork visits to the Netherlands (June 2011 and February 2012) enabled the researcher to learn from the prolonged engagement in the South African fieldwork to make relevant improvements for the second phase.

### ***Concerning the Focus Groups and Interviews***

In the first few focus group sessions, the researcher observed that the majority of participants were youth who are involved with environmental issues such as sustainability and climate change either through their studies or through personal interests and activities. As the aim of this study was to explore a wide diversity of youth perspectives and experiences, the researcher continuously tried to adjust the organization of the sessions to attract more participants. This was mainly achieved by networking with a wide range of youth organizations and with student clubs at universities, not only those involved with climate change activities. Other strategies included changing the wording of the adverts to fit a diverse audience, setting times and dates that are most suitable for potentially diverse participants, and face-to-face interaction with potential participants to encourage them to attend.

*"The fieldwork also gave me experience how to tailor each advert to the group I am addressing. At the beginning of the fieldwork, I had prepared an advert to use whenever I need to circulate the details of the organized focus group session. I was using the same one every time, because I thought that this would maintain ethics. But soon I realized that I would need to sometimes spice it up a little or tone it down or make it simple... depending on my target audience. For example, when I was sending to youth groups who are not directly involved in environmental issues, I would exchange words such as your 'concerns with climate change' to 'your priorities as*

*(Dutch or South African) youth'....just to get them interested, make it relevant...." (Research Journal, 12 August, 2011).*

Also, the researcher found it interesting that even the participants themselves reflected on the importance of understanding the perspectives of those who are less engaged;

*"In many sessions, even the participants would ask me at the end why I am conducting this research with them, why I am asking about their engagement rather than those who are not engaged or interested, to see their perspectives, opinions...It's interesting because they are expressing interest in knowing more about how the other youth think, why they don't want to be actively engaged, participate in the events that these youth organize...I think this insight is important, it shows the importance and need for this study and its value for investigating a wide diversity of perspectives from those who are active and those who are less interested, and how they think of each other...." (Research Journal, 20 July, 2011).*

### ***Concerning the Events Attended as Participant-Observant;***

Participant-observation was very useful for helping the researcher understand the contextual, active, and interactive facets of the youth's engagement. Below, the excerpt from the researcher's journal illustrates;

*"I observed the ways in which their personal backgrounds, academic discipline, and experiences shaped the way they were personally engaging with climate change issues, and I listened to their personal stories and the problems they were facing in their communities. I observed the different chances they get to be actively involved, to make decisions, and who is leading, managing.... I also observed the ways in which their collective interaction with each other through the week-long events or the 2-month process shaped their engagement with the event themes and with their*

*priority areas on climate change, as well as with each other....This last point is very interesting. Their interactions together made a big difference to their aims and achievements and to their confidence; it also helped me understand better their participation..."* (Research Journal, 10 September, 2011).

The contextual dynamics also accounted for certain differences in participant-observation as a method across each of the Netherlands and South Africa. One example is the language barrier. Whilst the events attended in South Africa were conducted in English, this was not the case in Netherlands. Not being able to speak or understand the Dutch language was obviously an important limitation during the events that were attended as participant-observer. It limited the researcher's ability to spontaneously understand the context in which the Dutch youth in such naturally-occurring settings were engaging with climate change and sustainability issues, and the understanding of any personal or emotional statements resulting from such active involvement by the participants. However, this prompted a more attentive and focused observation process and encouraged numerous individuals to hold side conversations or prolonged discussions to support the research and to further enhance the understanding of the researcher on the ongoing dynamics. These side discussions provided insight into the interactions and occurrences taking place, as well as into these individuals' personal perspectives and responses regarding the events and the research themes.

This limitation was also offset but the fact that the type of events that were organized tended to be more active and engaging than verbal. They were often not focused on discussions or debates but rather on activities that aimed to attract a wide diversity of audience. As demonstrated in Chapter 8, this also emerged as an important finding which was often highlighted by young organizers of events in the Netherlands and in South Africa; namely the absence of in-depth and meaningful discussions in events that are more focused on attracting large numbers of people and making it 'fun' but not highly informative and reflective.

### *Concerning Potential Limitations of the Study Findings*

- The study recognizes that the generated findings are particular to the study participants and their contextual settings. The findings mainly represent the forms and dimensions of engagement of the participants who took part in the study. The findings provide in-depth insight into a diversity of participants' engagement processes and the influencing factors, but the study cannot claim such insights provide a complete and consistent picture of such engagement processes beyond the participating youth's experiences and interactions.
- As previously mentioned, the study recognizes the limitations to the fieldwork posed by certain uncontrollable inconsistencies in the data collection processes within each of the Netherlands and South Africa. It is worth mentioning that as the research participants are a group of young adults with a relatively high education level, and due to the nature of voluntary involvement, it must be considered that most participants are potentially interested in the issue of global climate change to a higher degree than their general peers. This might generate a certain degree of bias with regards to the captured findings, which nonetheless are significantly important and meet the main aims of this research for enhancing the understanding of engagement of this vital population group who will be leading future society.
- The study acknowledges the social construction of knowledge; hence recognizes that the findings are generated by the interactions amongst the participants and also with the researcher. Similar studies conducted by other researchers in the same or different countries could potentially generate some different findings, additional findings, or use different analysis processes. This is recognized as a natural outcome of qualitative and critical interpretivist research. The reader is encouraged to engage with these

findings in a trusting but critical way in order to enhance their understanding of youth engagement whilst considering contextual and critical constructivist influences when extrapolating or extending application to different contextual settings or participants.

Finally, this study has generated in-depth, critical, and contextual insight into the multi-dimensional forms and pathways of youth engagement with climate change and well-being. The profound and analytical exploration in distinct country contexts and particularly with higher education youth - today's change-makers and tomorrow's leaders- contributes an enhanced understanding of such engagement within diverse socio-political, academic, and public health settings; hence informing policy, practice, and research in these crucial, inter-disciplinary and contemporary themes.

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# APPENDICES

## *Appendix 1: Key International Policy/Frameworks Milestones on Climate Change*

YEAR	MILESTONE
1979	World Climate Research Programme is launched to coordinate international research on climate.
1988	Toronto Conference on the Changing Atmosphere  Intergovernmental Panel on Climate Change (IPCC) is established by UNEP and WMO. The aim of IPCC is to generate regular scientific and technical assessments on climate change.
1992	Agreement on the U.N. Framework Convention on Climate Change at the Earth Summit in Rio de Janeiro, Brazil. The Convention enters into force in 1994.
1995	Second IPCC Assessment Report concludes that scientific evidence suggests human influence on the global climate and projects serious warming in the coming century
1997	Adoption of the Kyoto Protocol to the UN Climate Convention, the first international treaty to set legally binding emission reduction targets for signatory nations.
2001	Third IPCC Assessment Report establishes stronger connection between human activities and the global climate system.  Signatory nations adopt the "Marrakesh Accords," which consists of detailed rules for the implementation of the Kyoto Protocol.
2003	Deadly summer heat wave in Europe; enhances European public belief towards climate change.
2005	Kyoto treaty goes into effect, signed by most industrialized countries such as in Japan and Western Europe, with exception of United States.  Hurricane Katrina and several other tropical storms; trigger debate on the impact of climate change on weather disasters and extreme events.
2007	Fourth IPCC Assessment Report indicates "irrefutable....."; indicates that the cost of emission reduction is considerably lower than the projected damage.  Bali Climate Change Conference. The Bali Road Map was adopted, consisting of several

	<p>decisions representing the various tracks that are essential to reaching a secure climate future. The Bali Road Map includes the Bali Action Plan, which charts the course for a new negotiating process designed to tackle climate change, with the aim of completing this by 2009, along with a number of other decisions and resolutions.</p>
<b>2009</b>	<p>UNFCCC COP15 held in Copenhagen. Succeeded in attracting international media attention and concern of international community. However, no legally binding agreement was achieved.</p> <p>Release of email content regarding mistakes in scientific calculations relating to greenhouse gases measurement.</p> <p>IPCC admits errors in its latest report AR4</p>
<b>2010</b>	<p>COP16 held in Cancun, Mexico. Among the Cancun Agreements are the decision to set up a Green Climate Fund to provide financial support to climate projects and programmes in developing countries; and the Cancun Adaptation Framework to enhance action on adaptation through fostering international support and national capabilities and build resilience in developing countries.</p>
<b>2011</b>	<p>COP17 held in Durban, South Africa.</p> <p>Fifth IPCC Assessment Report expected to be published.</p>
<b>2012</b>	<p>COP18 held in Doha, Qatar. Main outcomes include the agreement to extend the life of Kyoto Protocol till 2020; introduction of concept on loss and damage to address limitations to adaptation by developing countries; progress in funding the Green Climate Fund.</p> <p>UN Conference on Sustainable Development (UNCSD); also known as Rio+20. Key themes entailed the transition to green economy, and institutional framework for sustainable development.</p>

## *Appendix 2: Ladder of Youth Participation as identified by Hart (1993)*

### Ladder of Youth Participation



Level 8: Youth lead and initiate action

Level 7: Youth and adults share decision-making

Level 6: Adult-initiated, shared decisions with youth

Level 5: Youth consulted and informed

Level 4: Youth assigned and informed

Level 3: Youth tokenized \*

Level 2: Youth are decoration \*

Level 1: Youth are manipulated \*

*\* Hart identifies Level 1-3 as non-participation*

*Taken from Alberta Emerald Foundation 2008*

### *Appendix 3: Contextual Profile of Netherlands and South Africa*

Table 3a: Profile of Netherlands

Table 3b: Profile of South Africa

**Table 3a: Profile of Netherlands**

<b>Location</b>	Western Europe, bordering Germany and Belgium
<b>Elevation</b>	Flat terrain Lowest point is at 6.7 meters below sea level, located near Rotterdam. Highest point is at 321 meters located in the southeast.
<b>Population</b>	16.7 million (2011) <b>Age Structure</b> 0-20 years 23.7% 20-65 years: 61% >65 years: 15.3%
<b>Government</b>	Constitutional Monarchy
<b>Capital</b>	Constitutional capital is Amsterdam Seat of government, court, and parliament is The Hague.
<b>Administrative Divisions</b>	12 provinces Major cities: Amsterdam (capital); Rotterdam, The Hague
<b>Language</b>	Dutch
<b>Life Expectancy</b>	79 years (men) ; 83 years (women)
<b>Population Growth Rate</b>	0.452% (2011 est.)
<b>Literacy Rate<sup>180</sup></b>	99% of total population
<b>Health Expenditure</b>	10.8% of GDP (2009)
<b>Economy</b>	Capitalist Market-Based
<b>Main Characteristics</b>	Main sectors: Shipping, Fishing, Trade, Banking, Agro-industry,

<sup>180</sup> Aged >15, can read and write

<b>of Dutch Economy</b> <sup>181</sup>	<p>Electrical Machinery, Machinery, Chemicals, Petroleum Refining</p> <p>Main agricultural products: grains, potatoes, sugar beets, fruits, vegetables; livestock</p> <p>Major industries: agroindustries, metal and engineering products, electrical machinery and equipment, chemicals, petroleum, construction, microelectronics, fishing</p> <p>Highly mechanized agricultural sector; Important export of foodstuffs (3<sup>rd</sup> worldwide for value of agricultural exports)</p> <p>Dutch economy heavily dependent on foreign trade. Two important European transportation hubs: Rotterdam Port<sup>182</sup> and Amsterdam Schipol Airport</p> <p>Services sector represents 70% of economy</p>
<b>Unemployment Rate</b>	4.4% (2011 est.)
<b>Population below Poverty Line</b>	10.5% (2005)
<b>Internet Users</b>	14.872 million (2009)

*Sources: CIA World FactBook (2011) ; EEA (2010)*

<sup>181</sup> Netherlands has 17<sup>th</sup> largest economy in the world; ranks 10<sup>th</sup> in nominal GDP per capita

<sup>182</sup> Largest port in Europe

**Table 3b: Profile of South Africa**

<b>Location</b>	Southern Africa, at the southern top of the African continent. Bordering Botswana, Lesotho, Mozambique, Namibia, Swaziland, and Zimbabwe. Also borders the Atlantic Ocean to the west and the Southern Indian Ocean to the south and east
<b>Elevation</b>	<b>lowest point:</b> Atlantic Ocean 0 m <b>highest point:</b> Njesuthi 3,408 m
<b>Population</b>	48,810,427 (July 2012 est.) <b>0-14 years:</b> 28.5% <b>15-64 years:</b> 65.8% <b>65 years and over:</b> 5.7% <b>urban population:</b> 62% of total population (2010)
<b>Government</b>	Republic
<b>Capital</b>	Legislative capital is Cape Town (seat of Parliament) Administrative capital is Pretoria (seat of the President and Cabinet) Judicial capital is Bloemfontein (seat of the Supreme Court of Appeal)
<b>Administrative Divisions</b>	9 provinces; Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape, North-West, Western Cape
<b>Major Cities</b>	Johannesburg 3.607 million; Cape Town 3.353 million; Ekurhuleni (East Rand) 3.144 million; Durban 2.837 million; PRETORIA (capital) 1.404 million (2009)
<b>Languages</b>	11 Official languages
<b>Life Expectancy</b>	50.34 years 48.45 years (2011 est.)
<b>Population Growth Rate</b>	-0.412% (2011 est.)

<b>Literacy Rate</b> <sup>183</sup>	86.4% of total population
<b>Health Expenditure</b>	8.5% of GDP (2009)
<b>Economy</b>	Mixed economy
<b>Main Characteristics of South African Economy</b>	<p>Main strengths ... its fertile agricultural lands, abundant mineral resources, tourist attractions, and highly evolved intellectual capital.</p> <p>Main agricultural products: corn, wheat sugarcane, fruits, beef and poultry, wool, dairy products</p> <p>Major industries: mining (world's largest producer of platinum, gold, chromium), automobile assembly, metalworking, machinery, textiles, iron and steel, chemicals, fertilizer, foodstuffs, commercial ship repair</p> <p>The agricultural industry contributes only 10% of formal employment and contributes around 2.6% of GDP.</p>
<b>Unemployment Rate</b>	<p><b>Total:</b> 24.9% (2011 est.)</p> <p>Youth aged 15-24: 48.2%</p>
<b>Population below Poverty Line</b>	50%

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<sup>183</sup> Aged >15, can read and write

**Appendix 4: Research Design & Methods**

Figure 4a: Format and Aims of the Focus Group Sessions

Table 4b: Participants Profile – Pilot Focus Group

Table 4c: Participants Profile – Focus Groups in the Netherlands

Table 4d: Participants Profile – Focus Groups in South Africa

Table 4e: Profile of Dutch Interviewees

Table 4f: Profile of South African Interviewees

Table 4g: Events Attended as Participant-Observant in the Netherlands

Table 4h: Events Attended as Participant Observant in South Africa

Figure 4i: Sample of Key Informant Groups and Aims

Table 4j: Profile of KIG in the Netherlands

Table 4k: Profile of KIG in South Africa

Figure 4l: Example of Data Analysis Process

**Figure 4a: Format and Aims of the Focus Group Sessions**

<b>ENVISIONING EXERCISE</b>  <b>10 min.</b>	<p>Aim is to personalize climate change and encourage participants to reflect on the ways in which it might influence their personal futures and their communities.</p>
<b>SMALL-GROUP DISCUSSIONS</b>  <b>15-20 min.</b>	<p>Participants share their visions, discuss the factors and values that might have influenced their visions, the changes they would like to see, and their role in the process.</p> <p>The last few minutes, participants discuss the possibility or ways of arriving at a common vision over needed changes and main responsibilities.</p>
<b>WHOLE-GROUP DISCUSSION</b>  <b>45 min.</b>	<p>Each group feeds back on main issues discussed and on commonalities or differences in their visions. Interactive discussion emerges as different participants react to each other's views, concerns, and experiences and start to build up their understandings and interpretations of the research issues.</p> <p>A list of main themes and leading questions helps facilitate the discussion to make sure the research questions are answered.</p>
<b>CLOSING-UP</b>  <b>5 min.</b>	<p>Participants share final thoughts and write down comments and recommendations. Participants complete consent form and participant profile document.</p>

**Table 4b: Participants Profile – Pilot Focus Group**

<b>SEX</b>	<b>AGE</b>	<b>ACADEMIC YEAR</b>	<b>COUNTRY</b>
M	29	Masters	South Africa
F	28	Masters	South Africa
F	25	Masters	South Africa
M	37	PhD	Mozambique
M	22	2nd yr Student	Zambia
F	30	PhD	Zambia
M	25	5th yr Student	Zambia
F	25	Student Outreach Coordinator	Namibia

**Table 4c: Participants Profile – Focus Groups in the Netherlands**

<b>FOCUS GROUP</b>	<b>Number of Participants</b>	<b>Age Range</b>	<b>Gender</b>	<b>Academic Disciplines</b>	<b>Academic Year</b>
<p><b>FGNL 1</b></p> <p>2 June, 2011 Arnhem</p>	10	19-25	5 F 5 M	<p>Education</p> <p>Bio-Dynamic Agriculture</p> <p>Forest &amp; Nature Management (2)</p> <p>Social &amp; Cultural Education</p> <p>Sociology</p> <p>Anthropology</p> <p>Urban Forestry</p> <p>Theatre Education</p>	<p>1st yr: 4</p> <p>2nd yr: 2</p> <p>3rd yr: 2</p> <p>Masters:1</p>
<p><b>FGNL 2</b></p> <p>10 June,2011 Amsterdam</p>	14	20-27	8 F 6 M	<p>Management, Economics, &amp; Law</p> <p>Business Economics</p> <p>Communication Management (4)</p> <p>Nutrition &amp; Dietics</p> <p>Business &amp; Modeling</p> <p>Financial &amp; Service Management</p>	<p>1st yr: 3</p> <p>2nd yr: 9</p> <p>3rd yr: 2</p>
<p><b>FGNL 3</b></p> <p>21 June,2011 Wageningen</p>	9	22-28	2 F 7 M	<p>Nutrition (2)</p> <p>Bioinformatics</p> <p>Environmental Sciences</p> <p>Anthropology</p> <p>Organic Agriculture</p> <p>Urban Planning</p> <p>Economics &amp; Policy</p>	<p>3rd yr:3</p> <p>4th yr: 2</p> <p>5<sup>th</sup> yr:2</p> <p>Masters: 2</p>

<b>FGNL 4</b>  23 June, 2011 Rotterdam	9	21-28	3 F 6 M	Industrial Design Engineering (2) Political Communication Public Administration Trade International Communication Management International Land & Water Management Public Policy International Business	2nd yr: 2 4th yr: 2 Masters: 2 Recent Graduate: 3
<b>FGNL 5</b>  24 June, 2011 Amsterdam	6	18 - 27	5 F 1 M	Cultural & Medical Anthropology Social & Cultural Development Medicine Environmental Studies	1 <sup>st</sup> yr: 1 2nd yr: 2 3 <sup>rd</sup> yr: 2 Recent Graduate: 1
<b>FGNL 6</b>  8 Feb, 2012 Amsterdam	4	20 - 28	3 F 1 M	Communication & Media Public Management Archaeology Biology	2 <sup>nd</sup> yr: 2 4 <sup>th</sup> yr: 1 PhD: 1
<b>FGNL 7</b>  22 Feb, 2012 Amsterdam	4	21 -25	3 F 1 M	Ancient History Ecology Marketing/Business Administration Entrepreneurship	3 <sup>rd</sup> yr: 2 5 <sup>th</sup> yr: 1 Masters: 1

<p><b>FGNL 8</b></p> <p>27 Feb, 2012 Hague</p>	<p>10</p>	<p>19-20</p>	<p>7 F 3 M</p>	<p>Liberal Arts &amp; Sciences Sustainability &amp; International Development Human Interaction (3) Global Justice (4) International Politics &amp; Economy</p>	<p>1st yr: 8 2nd yr: 2</p>
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**Table 4d: Participants Profile – Focus Groups in South Africa**

<b>FOCUS GROUP</b>	<b>Number of Participants</b>	<b>Age Range</b>	<b>Gender</b>	<b>Academic Disciplines</b>	<b>Academic Year</b>
<b>FG SA 1</b> 9 July, 2011 Grahamstown	18	19-25	13 F 5 M	Journalism	1 <sup>st</sup> yr: 3 2 <sup>nd</sup> yr: 15
<b>FG SA2</b> 14 July, 2011 Grahamstown	5	20-23	2 F 3 M	Law Accounting Taxing Economics & Politics Advanced Finance	3 <sup>rd</sup> yr: 2 4 <sup>th</sup> yr: 1 5 <sup>th</sup> yr: 1 Honors: 1
<b>FG SA 3</b> 17 July, 2011 Grahamstown	13	18-21	9 F 4 M	Environmental Sciences (3) Landscape Management (2) Sociology Journalism Architecture Graphic Design Medicine	1yr: 3 2yr: 5 3 <sup>rd</sup> yr: 4 Masters: 1
<b>FG SA 4</b> 28 July, 2011 Grahamstown	4	18-20	4 M	Economics & Management Math & Economics Ichthyology Philosophy	1 <sup>st</sup> yr: 2 2 <sup>nd</sup> yr: 2

<p><b>FG SA 5</b></p> <p>29 July, 2011 Port Elizabeth</p>	20	18-24	13 F 7 M	<p>Architecture</p> <p>Accounting</p> <p>Analytical Chemistry</p> <p>Linguistics</p> <p>Construction Economics</p> <p>Civil Engineering</p> <p>Law</p> <p>Economics</p> <p>Environmental Health</p> <p>Technology IT</p> <p>Social Work</p>	<p>1<sup>st</sup> yr: 5</p> <p>2<sup>nd</sup> yr: 3</p> <p>3<sup>rd</sup> yr: 9</p> <p>4<sup>th</sup> yr: 2</p> <p>Masters: 1</p>
<p><b>FG SA 6</b></p> <p>3 Aug, 2011 Durban</p>	12	18-22	5 F 7 M	<p>Forest Fires Training Group, Part of Poverty Alleviation Program</p>	
<p><b>FG SA 7</b></p> <p>11 Aug, 2011 Durban</p>	11	22-26	6 F 5 M	<p>Environmental Management</p> <p>Landscape Design</p>	<p>Honours: 8</p> <p>Masters: 3</p>
<p><b>FG SA 8</b></p> <p>12 Aug, 2011 Durban</p>	25	20-24	19 F 6 M	<p>Geology</p> <p>Environmental Sciences</p>	<p>2<sup>nd</sup> yr: 5</p> <p>3<sup>rd</sup> yr: 20</p>

<b>FG SA 9</b> 1 Sep, 2011 Durban	3	2 F 1 M	20- 21	Eco-Tourism Management Sports Management Social Sciences	All 2 <sup>nd</sup> yr
<b>FG SA 10</b> 23 Sep, 2011 Stellenbosch	6	5 F 1 M	19 - 20	Accounting (2) Earth Sciences Environmental Studies (2) Media Studies	2 <sup>nd</sup> yr: 5 3 <sup>rd</sup> yr: 1

**Table 4e: Profile of Dutch Interviewees**

INTERVIEW	INTERVIEWEE PROFILE
<p><b>INT NL 1</b> 13 Nov, 2010</p>	<p>Interview with PhD student on climate change and adaptation strategies; active member of local youth group</p>
<p><b>INT NL 2</b> 1 June, 2011</p>	<p>Group Interview with 2 leading members (Chair and coordinator) of a local youth organization associated with a Dutch university, working on issues of social justice and sustainable development. Interviewees are also university students in development-related studies.</p>
<p><b>INT NL 3</b> 8 June, 2011</p>	<p>Interview with a university student who is member of sustainability committee at a Dutch university. Interview was following the committee's weekly meeting which the researcher attended.</p>
<p><b>INT NL 4</b> 10 June, 2011</p>	<p>Follow-up interview with participant from FGNL-1 who is an active member of a national environmental organization.</p>
<p><b>INT NL 5</b> 14 June, 2011</p>	<p>Interview with a university student who is coordinator of environment club at a Dutch university</p>
<p><b>INT NL 6</b> 24 June, 2011</p>	<p>Follow-up with participant in FG NL 5 to learn more about personal experiences as an active member of a nature group.</p>
<p><b>INT NL 7</b> 2 Feb, 2012</p>	<p>Interview with chair of a student green club at a Dutch university.</p>
<p><b>INT NL 8</b> 8 Feb, 2012</p>	<p>Interview with a PhD student at a Dutch university, conducting research on climate change governance in the Netherlands and national and regional barriers.</p>
<p><b>INT NL 9</b> 22 Feb, 2012</p>	<p>Group Interview with 3 university students who are members of the university's green club</p>

**Table 4f: Profile of South African Interviewees**

INTERVIEW	INTERVIEWEE PROFILE
<p><b>INT SA 1</b> 2 July, 2011</p>	<p>Group interview with 2 students (PhD; 3<sup>rd</sup> yr). Session was supposed to be a focus group session<sup>184</sup> but turned into group discussion since only 2 participants.</p>
<p><b>INT SA 2</b> 11 July, 2011</p>	<p>Interview with a university student (Commerce) who expressed interest in the study but was unable to attend the focus group.</p>
<p><b>INT SA 3</b> 21 July, 2011</p>	<p>Interview with a recent university graduate who is coordinator of a local environmental organization</p>
<p><b>INT SA 4</b> 29 July, 2011</p>	<p>Follow-up interview with participant from FG SA 5; a university student (Architecture).</p>
<p><b>INT SA 5</b> 8 Aug, 2011</p>	<p>Group interview with 2 postgraduate students doing research on climate change adaptation in South Africa.</p>
<p><b>INT SA 6</b> 18 Aug, 2011</p>	<p>Interview with staff and 2 fresh university graduates at a local NGO (SDCEA). Important for exploring the links between climate change and health in an industrial community with multiple health problems from increasing environmental problems exacerbated by rising risks from climate change.</p>
<p><b>INT SA 7</b> 19 Aug, 2011</p>	<p>Meeting with a sustainability student at UKZN. Her experiences as a Climate Ambassador 2011 were valuable to explore for further grasping a clearer picture of South African students' engagement with climate change and well-being. She discussed her own experiences and perspectives, and also, through her role as climate ambassador, discussed the challenges facing SA youth in these issues.</p>
<p><b>INT SA 8</b> 31 Aug, 2012</p>	<p>Interview with a university student (Medicine). Session was supposed to be a focus group but no one showed up. A discussion was held with the student who was helping arrange for the session.</p>

<sup>184</sup> First session after arrival. Researcher was not yet familiar with South African context. Also, session took place as part of NAF; youth were more likely to attend more entertaining events

<b>INT SA 9</b> 2 Sept, 2012	Interviews held separately with 3 PhD students doing research on climate change in South African context, particularly in relation to energy; transport; health and society.
<b>INT SA 10</b> 6 Sept, 2012	Interview with a university student (Engineering) who expressed interest in the study.
<b>INT SA 10</b> 6 Sept, 2012	Interview with a university student (Engineering) who expressed interest in the study.
<b>INT SA 11</b> 6 Sept, 2012	Interview with a student member of a local environmental NGO
<b>INT SA 12</b> 8 Sept, 2012	Interview with a university student in Geography who came to the interview after the researcher attempted to organize a focus group session at the university but did not work out.
<b>INT SA 13</b> 12 Sept, 2013	Group interview with three students, two are members of environment club on campus; third is a student in engineering.
<b>INT SA 14</b> 12 Sept, 2013	Group interview with four young staff members/interns in a national environmental organization
<b>INT SA 15</b> 16 Sept, 2013	Interview with a recent graduate who is heading a youth initiative into youth participation in civic and environmental affairs; employed and supported by British Council.
<b>INT SA 16</b> 18 Sept, 2013	Group interview with a university student in Architecture who expressed interest in the study and who was helping the researcher to organize focus group discussions. Second interviewee is a pastor at a local church who was organizing events themed around environmental issues.

**Table 4g: Events Attended as Participant-Observant in the Netherlands**

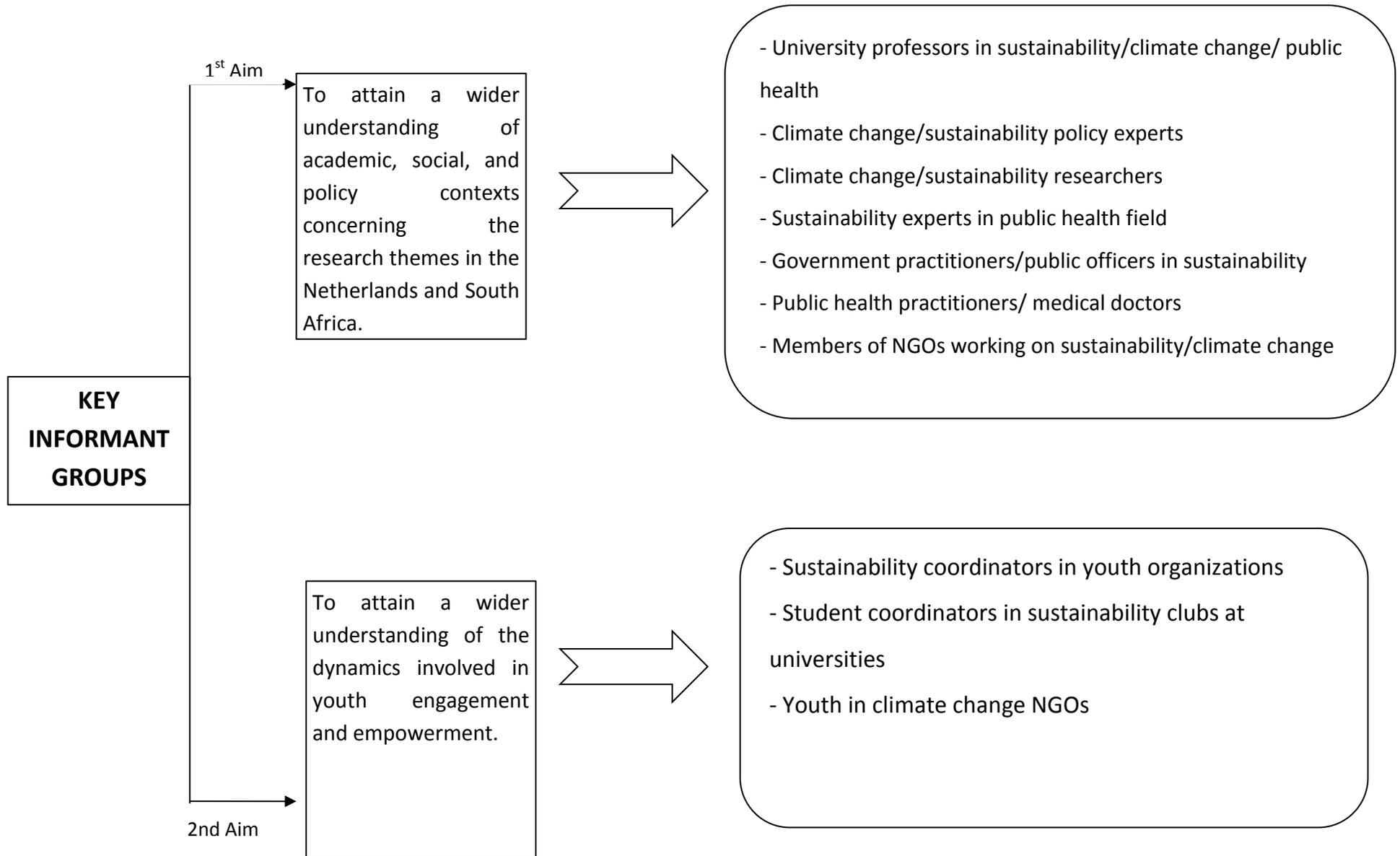
EVENT	EVENT PROFILE
<b>Event NL 1</b>	An annual event organized by a youth nature group. The group is part of a national institute for nature education and sustainability. Event aimed at engaging young people in a fun and educating way in living more eco-friendly lifestyle.
<b>Event NL 2</b>	An event organized by a student sustainability committee at a Dutch university. The aim was to raise awareness concerning various aspects of climate change such as health effects and renewable energy.
<b>Event NL 3</b>	An event organized by a youth environmental association. The aim was to raise awareness amongst policymakers on energy efficiency.  Event was important to observe the ways in which these youth were engaging with the media and policymakers in trying to raise awareness and lobby for increased policy focus on energy and sustainability issues.
<p>The events attended in the Netherlands for exploratory purposes but not as a formal participant-observer, included the following;</p> <ul style="list-style-type: none"> <li>- A student workshop themed around child and youth development in the Dutch context; provided insight into the general lifestyle of Dutch youth and the influence of academic, socio-cultural, and environmental factors on their ways of thinking and their common forms of participation.</li> <li>- A lecture by a university professor on the moral and ethical dimensions of sustainability from a business perspective; provided insight into the perspectives and opinions of various Dutch university students into the ethics of climate change, their willingness to change lifestyles, and the ways in which they see their careers changing towards greater focus on sustainability.</li> <li>- A meeting by an environmental committee for university students; provided insight into the key priority areas, consultation forums, and challenges for these youth regarding campus sustainability, raising climate awareness amongst their peers, and collaborating with the university administration on projects.</li> </ul>	

**Table 4h: Events Attended as Participant Observant in South Africa**

EVENT	EVENT PROFILE
<b>Event SA 1</b>	<p>The value of this event was that it was the first of its kind in South Africa concerning sustainability, climate change, and youth; initiated, planned, organized, and conducted completely by South African university students. It joined together 30 students from diverse universities across the country, whose aim was to establish an umbrella network to support and connect youth involved in environmental and youth work in Southern Africa. This presented a unique opportunity for me to explore the various levels of the students' engagement with climate change through the focus group session as well as through my prolonged engagement with the participants during the 3-day event.</p>
<b>Event SA 2</b>	<p>A 3-day event based on a programme on youth empowerment through leadership training.</p> <p>A selected group of 20 high-school and university students representing a diversity of SA provinces and backgrounds, present their messages to COP17 negotiators, climate government practitioners, academics and heads of NGOs.</p> <p>Included preparatory workshops that took place in July, followed by continuous preparations until the larger event that was taking place in August. Such long periods enhanced the prolonged engagement in the field and the researcher's understanding of the observed pathways of youth participation. It also enabled the researcher to observe the ways in which the youth's active participation and leadership was developing practically as well as conceptually throughout these extended events.</p>
<b>Event SA 3</b>	<p>A youth empowerment and leadership programme aimed at enhancing the skills and competencies of student journalists. Participants from different universities and socio-demographic backgrounds across South Africa.</p> <p>Event took place as a preliminary preparatory phase and the main conference after few months. The researcher was able to attend sessions throughout both phases, which enabled gaining deeper insight into the dynamics of the youth's engagement, their learning processes.</p>

The events attended in South Africa for exploratory purposes but not as a formal participant-observer, included the following;

- Civil society meetings in Durban for COP17 preparations; provided insight into the community work being done by environmental organizations, the different national and provincial priority areas concerning climate change in a South African context, and important geopolitical and policy dynamics involved.
- A workshop in Durban on women empowerment on climate change and health; provided interesting insight into the public health threats from climate change in a local setting, and the specific vulnerability of certain South African population groups to climate change. It also helped explore the ways in which local NGOs were engaging with climate change at a community level and the challenges faced in empowering communities on climate change and public health.
- Inaugural event for a university sustainability club, the Green Campus Initiative; enabled the researcher to observe the ways in which students were engaging with these issues on campus, specifically through raising awareness amongst students concerning climate change issues, and the context in which they were promoting their new initiative.
- A workshop on empowering young unemployed South Africans; presented a chance to explore the contextual challenges faced by young South Africans dealing with climate change and the obvious impact it had on their jobs, their sense of well-being, and their future livelihood security.
- A workshop by an environmental research institute discussing the different projects undertaken by its young researchers; provided insight into the wide diversity of research themes and priority areas for South African young environmental researchers, the practicalities of undertaking fieldwork in South Africa and the challenges they are facing in their work.



*Fig. 4i: Sample of Key Informants and Aims*

**Table 4j: Profile of KIG in the Netherlands**

	<b>KEY INFORMANT PROFILE</b>	<b>MAIN THEMES OF INTERVIEW</b>
1	<p>Coordinator at a national environmental organization</p> <p>13 Nov, 2010</p>	<p>Main priority areas for the organization at national and local levels</p> <p>Key project areas and participation schemes</p> <p>Main challenges faced as an organization</p> <p>Experiences as a Dutch young person working in the field</p>
2	<p>Board member sustainable development at Dutch National Youth Council</p> <p>16 Nov, 2010</p>	<p>Key priority areas and projects by the council</p> <p>Role of youth in driving climate change and sustainability issues into Dutch policy and civil society</p> <p>Barriers faced by the youth council</p>
3	<p>Climate change consultant ; Lecturer at a Dutch university of applied sciences</p> <p>15 Nov, 2010</p>	<p>Context of climate change adaptation strategies and policy schemes in the Netherlands</p> <p>Context of Netherlands in national and international climate policies</p>
4	<p>Professor at a Dutch university; Chair of academic department in sustainability</p> <p>21 June, 2011</p>	<p>History and current situation of Education for sustainable development in the Dutch context</p> <p>Context of social learning and ESD in the Netherlands</p>
5	<p>Project Manager at a Dutch Ministry</p> <p>22 June, 2011</p>	<p>Context of integrating ESD &amp; LfSD into curriculum of higher education institutions</p> <p>Context of incorporating sustainable development into government organizations and functions</p>
6	<p>Senior Policy Officer at a Dutch Ministry</p>	<p>Education strategy in Dutch government</p> <p>Key priority areas for Dutch government in</p>

	22 June, 2011	climate policy Main national climate strategies for future of Netherlands
7	Lecturer at a Dutch university ; Coordinator at a national climate & health research program 22 June, 2011	Climate and health issues in the Netherlands Public awareness, knowledge transfer and communication Networking and partnerships with youth
8	Director of a research center in sustainability ; Chair of academic department in sustainability and environmental change 1 Feb, 2012	Climate change impacts on Dutch society, particular focus on social and health aspects Challenges and opportunities for Dutch higher education institutions in leading the field of climate change and sustainability and working with other stakeholders
9	Academic researcher on sustainable development 2 Feb, 2012	Local governance and leadership for sustainable development in Dutch context
10	Coordinator at National Youth Institute 6 Feb, 2012	Programmes and strategies of Dutch government regarding youth participation and empowerment Main priority areas with Dutch youth and key projects being conducted at academic, political, and civic levels
11	Head of Department (on environmental issues) at Netherlands Environmental Assessment Agency (PBL) 7 Feb, 2012	Vulnerability to climate change in the Netherlands and adaptation strategies Energy and transport concerns in Netherlands from climate change Context on national climate policy
12	Head of Department (on sustainability) at Netherlands Environmental Assessment Agency 7 Feb, 2012	Sustainability strategies by national government Ways to involve Dutch youth in national strategies

13	<p>Two members of Young and Sustainable Team at National Youth Council</p> <p>7 Feb, 2012</p>	<p>Experiences as Dutch youth actively engaging in sustainability and climate change projects</p> <p>Current and past projects in communities and academic institutions</p> <p>Projects influencing policy-making in relation to climate change and youth</p> <p>Main challenges faced in their engagement within the socio-political Dutch context, and with Dutch youth.</p>
14	<p>Project manager at Green Office of a Dutch University</p> <p>21 Feb, 2012</p>	<p>Projects conducted by the green office</p> <p>Forms of involvement and levels of interest of student body</p> <p>Institutional and structural barriers to enhancing initiatives</p>
15	<p>Chair and coordinator at National Dutch Student Network for Sustainable Future</p> <p>16 Jan, 2012</p>	<p>National and provincial projects conducted on climate change and sustainability related issues</p> <p>Forums for youth participation in decision-making</p> <p>Challenges and possibilities for engaging Dutch youth in projects</p>
16	<p>Email Correspondence with manager at National Institute for Public Health and Environment</p> <p>25 Jan, 2012</p>	<p>Research programmes on links between climate change and health impacts in the Netherlands</p>

**Table 4k: Profile of KIG in South Africa**

	<b>KEY INFORMANT PROFILE</b>	<b>MAIN THEMES OF INTERVIEW</b>
1	Lecturer in Environmental & Sustainability Management at a South African University  12 July, 2011	Integrating ESD and climate change education into university curriculum  Policy issues around climate change in South Africa
2	Lecturer in Climate and Environmental Studies at a South African University  27 July, 2011	South Africa's vulnerability to climate change  Local challenges to climate change adaptation in South Africa and the responses by different provinces.
3	Professor of Environmental Education & Sustainability at a South African University  28 July, 2011	Context of ESD in government and in higher education in South Africa  Historical development of sustainability in South Africa and the contextual challenges faced by today's SA youth
4	Manager of biodiversity and climate change projects at the Environmental Department of a Municipality in KZN province  1 Aug, 2011	National and provincial climate policies  Climate change adaptation and the rich biodiversity of SA
5	A leading figure at the Environmental Planning and Climate Protection Department of a Municipality at KZN province. Also heading COP17 <sup>185</sup> preparations	Insight into governmental work and climate change context from policymaker perspective  Preparations for COP17 and SA position,

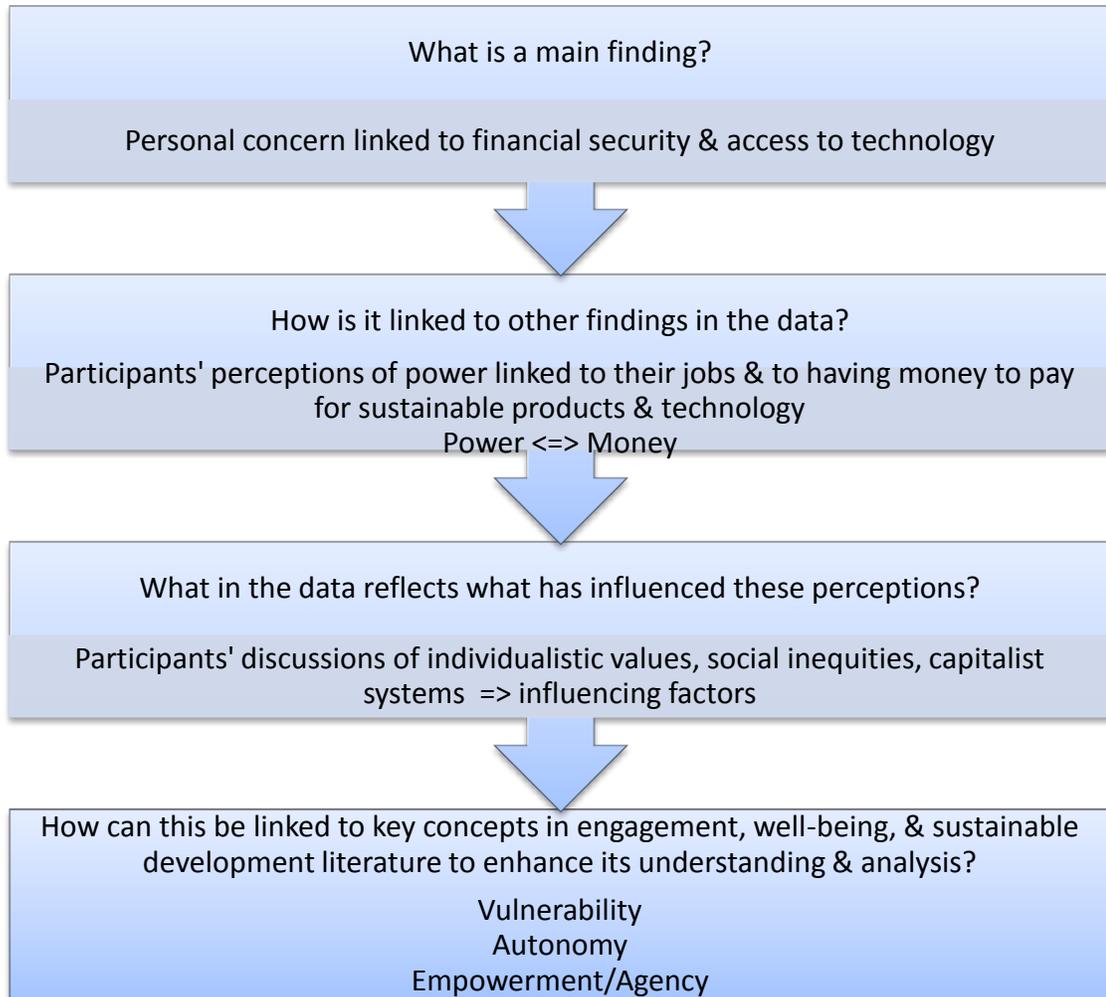
<sup>185</sup> Conference of the Parties 2011, which took place in Durban.

	3 Aug, 2011	challenges, and priorities; and the involvement of SA youth.
6	Climate change researcher at a SA University and head of activist civil society movement  10 Aug, 2011	Priority areas on climate change concerns at local community level.  Challenges faced by local communities and by policymakers in engaging with climate change vulnerabilities
7	Professor of Environmental Law in an South African university  15 Aug, 2011	Legislative and political aspects of sustainability and climate change in SA.
8	Lecturer and Academic researcher in environmental history and climate change  15 Aug, 2011	Climate change education in higher education context in SA  Challenges facing South African youth in the paradigm shift towards sustainability
9	Group meeting with head of outreach unit and head of community empowerment & awareness unit at environmental department of a municipality  17 Aug, 2011	Priorities of local governments, and public communication strategies concerning climate change awareness and preparedness  Spaces for youth participation in national climate change initiatives
10	Deputy Director of International Climate Change at Department of Environmental Affairs and Tourism.  30 Aug, 2011	National priorities concerning climate change and the location of health debate within these issues
11	Climate change researcher at Medical Research Council  30 Aug, 2011	Health priorities in SA context and the extent to which climate change health risks are taken into consideration at governmental level and in scientific and

		medical research
12	Professor on climate change and health 1 Sep, 2011	Health risks from climate change in SA context and the gaps in knowledge and research, policy, and practice issues.
13	Climate change lecturer and researcher at an SA university 2 Sep, 2011	Engagement of university students with climate change and the academic and institutional challenges faced.
14	Expert at SANBI - SA National Biodiversity Institute; and author of IPCC report 2007 9 Sep, 2011	Scientific and political issues relating to climate change in South Africa and the links to international level  Key research, policy, and implementation areas on climate change needed in SA.
15	Young manager of Eco-Schools programme at British Council; also founder of a youth empowerment network 9 Sep, 2011	Climate change education and ESD in SA schools and universities and extent of youth awareness on climate change and sustainability  Opportunities and challenges facing SA youth in actively engaging with climate change and sustainability issues  Youth initiatives and projects in different provinces
16	University lecturer and researcher in agriculture and sustainability 12 Sep, 2011	Circumstances faced by SA youth from rural areas or agricultural background and by young farmers.  Important research and policy areas on these issues
17	Former Youth Shadow Environment Minister in South African government	Past and current performance of government and history of legislative context and current governmental

	12 Sep, 2011	debates and priorities  Climate change in SA and the international context  The roles and opportunities of SA youth
18	Head of Student Affairs at an SA university  13 Sep, 2011	Activities and initiatives by the student body concerning sustainability and climate change issues  Perspectives and programmes by the academic institutions on role of youth in climate change response
19	Group meeting with 2 government officers at an environmental department of an SA municipality  15 Sep, 2011	Climate change initiatives and priorities by provincial governments  Strategies for raising awareness and involving youth in the initiatives
20	Medical Doctor conducting research on climate change and health  19 Sep, 2011	Public health dimensions of climate change in SA  Knowledge and research gaps and policy loopholes regarding climate change and health in SA
21	Head of student affairs at an SA university of technology  23 Sep, 2011	Climate change and sustainability programmes and initiatives involving the student body  Academic , administrative, and structural context within the students' environmental engagement on-campus and in their communities

**Figure 4I: Example of Data Analysis Process**



*Appendix 5: Sample of Information and Ethical Consent Form for Focus Group Participants*

**Participant Information and Consent Form**

For the PhD research

**Youth Engagement with Climate Change & Well-Being: A Study of Dutch and South African University Students**

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You are invited to participate voluntarily in this discussion. The main aim of this discussion is to explore your engagement as a South African university student with climate change and sustainability.

This discussion is part of a PhD research study (Youth Engagement with Climate Change & Well-Being: A Study of Dutch and South African University Students) at the University of Gloucestershire in the UK. It is conducted by Mona Betour El Zoghbi (Email: [monaelzoghbi@connect.glos.ac.uk](mailto:monaelzoghbi@connect.glos.ac.uk)) under the supervision of Professor Walid El Ansari and Professor Daniella Tilbury from the University of Gloucestershire. Data generated from this workshop will constitute an important phase in the development of this research.

If you decide to participate, you will be joining other participants in discussing your concerns & experiences with climate change and well-being, and prospects for a sustainable future. The researcher will facilitate this discussion which will help her explore youth engagement with these issues. The workshop will be voice recorded only if all participants agree. If a voice recorder is used, the recordings will be stored in a locked and secure area away from unauthorized access and the data will be destroyed upon the end of this research within three years.

Any information or personal details gathered in the course of this workshop are confidential. No individual will be identified in any publication of the results.

If you decide to participate, you are free to withdraw from further participation in this workshop at any time without having to give a reason and without consequence.

If you wish, you can follow-up on the results of this workshop. A brief preliminary report of the findings will be sent to the Conference organizers. If you would like a copy of this report, please contact the workshop moderator at [monaelzoghbi@connect.glos.ac.uk](mailto:monaelzoghbi@connect.glos.ac.uk)

Name: .....

Signature: ..... Date: .....

**Appendix 6: Sample of Information and Ethical Consent Form for KIG and Interviewees**

*Information and Consent Form*

For the PhD research

**Youth Engagement with Climate Change & Well-Being: A Study of Dutch and South African University Students**

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This PhD research, based at the University of Gloucestershire in the UK, aims to explore the engagement of Dutch and South African youth with climate change and sustainability issues, and the links to well-being. It is conducted by Mona Betour El Zoghbi (Email: [monaelzoghbi@connect.glos.ac.uk](mailto:monaelzoghbi@connect.glos.ac.uk)) under the supervision of Professor Walid El Ansari and Professor Daniella Tilbury from the University of Gloucestershire.

Engagement meetings would provide valuable contextual information on sustainability, climate change, and public health issues in the Dutch context. This information is important for the comprehensive understanding of the research issues and the local setting.

Any information or personal details gathered in the course of this meeting are confidential. No individual will be identified in any publication of the results.

If you decide to participate, you are free to withdraw from further participation in this discussion at any time without having to give a reason and without consequence.

If you wish, you can follow-up on the results of this research. Please contact Mona at [monaelzoghbi@connect.glos.ac.uk](mailto:monaelzoghbi@connect.glos.ac.uk)

I, ..... have read and understood the information above. I agree to participate in this meeting, knowing that the information collected will remain confidential and that anonymity will be maintained.

Name: .....

Signature: ..... Date: .....