Chapter 15
EU Policy Framework for Ecosystem Services Promoting Rural-Urban Synergies

Isabel Loupa-Ramos, Daniel Keech, and Maria Rosario Partidario

Abstract This chapter offers a review of eight selected European Union policies and strategies which, to a greater or lesser extent, engage with ecosystem services (ESS). The review reveals three types of policy reference to ESS. Some policies include explicit objectives and mechanisms designed to underpin different types of ESS; others mention ESS explicitly but without suggesting specific policy actions. Lastly, implicit mentions of ESS functions also appear without any direct mention of the term. Our analysis seeks to examine the extent to which EU policies with an explicit or implicit focus on ESS might better secure rural urban synergies. Findings suggest that EU policies which focus on ESS are more likely to support rural-urban synergies if they have eco-social objectives, for example sustainable agriculture or rural development, as outlined for example in the Farm2Fork Strategy and the Long-Term Vision for Rural Areas. Such policies foresee functioning rural-urban links including producer-consumer relations and the economic interaction of rural and urban dwellers. Policies more narrowly concerned with the biological functioning of ecosystems, such as the Soil Strategy or the Biodiversity Strategy are less synergistic, not least because their arena of operation remains predominantly rural.

Keywords Ecosystem services · Policy framework · EU policies · Rural-urban synergies

I. Loupa-Ramos (✉) · M. R. Partidario
CiTUA, Instituto Superior Técnico – Universidade de Lisboa, Lisbon, Portugal
e-mail: isabel.ramos@tecnico.ulisboa.pt

D. Keech
Countryside & Community Research Institute, University of Gloucestershire, Gloucestershire, UK

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15.1 Introduction

The concept of ecosystem services (ESS) has been high on the policy agenda in recent decades (Van Wensem et al., 2017; Ruckelshaus et al., 2015), emerging from a utilitarian and instrumental use of the concept and notably the possibility of its valuation to support policymaking (see Chap. 2). Nevertheless, a lack of political leadership has been blamed for the continuing loss of biodiversity (IPBES, 2022). Further to the brief policy analysis included in Chap. 4 which covers the role of ESS in multi-level planning, this chapter seeks to reveal the current incorporation of the ESS concept in the European Union (EU) and the policy context for ESS supporting rural-urban synergies. The objective is to develop a coherent policy framework to embrace, and enable, the ideas and intentions concerning Ecosystem Services (ESS) offered in this book. Preceding chapters have elaborated different approaches to frame ESS as a key instrumental concept to enhance rural-urban synergies. Yet for actions to shape and deliver expected outcomes, a coherent policy agenda for ESS, including dedicated initiatives and measures, is required. In this chapter, we briefly review EU policies that cover ESS and explore the extent to which these could nurture the full adoption of ESS in stimulating rural and urban linkages and synergies.

ESS was introduced as a term in the 1970s, and popularised in the global policy agenda via the Millennium Ecosystem Assessment in 2005 (see Chap. 2) Early initiatives that drew attention to services provided by ecosystems and connected to the importance of biodiversity, include the 1997 Business and Biodiversity guide for the private sector, a joint initiative of the World Business Council on Sustainable Development (WBCSD) and the World Conservation Union (IUCN). This was followed, from 2007, by several pan-European and global initiatives leading to the IUCN Countdown 2010, that aimed to arrest biodiversity loss. While mostly induced by the Convention for Biological Diversity Conference of the Parties (CBD-CoP) meetings, ESS has only more recently begun receiving clear recognition, becoming a priority across sectoral policies, albeit with a moderate impact and mostly at the global scale.

A scholarly review was published by Bouwma et al. (2018) to evaluate the adoption of the ESS concept in EU policies. At that time, these authors, also drawing on the work of Helming et al. (2013), stated *"there is no specific EU policy framework addressing ecosystem services, despite the fast increasing use of the concept."* (p. 214). At the time of writing this chapter (2024), there is indeed no dedicated ESS policy, and ESS appears still in piecemeal across a range of EU policies with no systematic to link the protection of ESS capabilities. Of note is the outstanding role played by the IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) global assessment (2019) and value report (2021), providing knowledge on biodiversity and ecosystem services to support policy development.

The investigation previously conducted by Helming et al. (2013) set out with the principal purpose of finding a policy framework that could mainstream the scientific ESS concept into the rationale of policy making. The authors explored the potential

of policy impact assessment using explicit cases, directly addressing ESS, as well as policy cases created for other purposes but with implicit, even unintended, effects on ESS.

Later, the research by Bouwma et al. (2018) revealed that ESS concepts would, with a few exceptions, be embedded only implicitly in existing nature and natural resources policies. To that end, these scholars analysed the use of the ESS concept in twelve policies[1] that dealt directly and indirectly with the use of natural resources or land. The authors examined both binding and non-binding policy instruments.

Their research investigated internal (or vertical) coherence to understand the link between goals, objectives, instruments, and the implementation processes within a particular policy field; and the external (or horizontal) coherence to analyse the overlap or alignment across different policy fields. Their aim was to understand the coherence between the ESS concept and EU policy, understanding policy coherence as *"the extent to which policies complement or are in line with one another or form a meaningful ensemble"* (Nilsson et al., 2012). The research concluded that the ESS concept was not yet fully incorporated in EU policies, but that it was gradually becoming more integrated. While policies on protecting natural resources would address ESS more explicitly and comprehensively, a differentiated uptake of the ESS concept within policy fields was exposed.

In any case, the Bouwma et al. review on the integration of ESS in European policy was less concerned with how to foster rural-urban synergies as with governance arrangements, which is the main subject of this book. In ROBUST, the importance of spatial relationships—both proximate and distal—led to an analysis of EU policies as arrangements for governing rural-urban relationships which extended across the entire range of ROBUST's thematic interests: new business models and labour markets, cultural connections, sustainable food systems, public infrastructure and social services as well as ESS. A key conceptual interest within ROBUST was how the complexity of relational approaches to enhancing place-based links and synergies could be managed. The key to this was network governance understood as a

> *… negotiated, multi-stakeholder process and a collaborative system of decision design and decision making, characterized by significant degrees of self-governing, with attendant resources, commitments and shared power….* (Douglass, 2006)

As stated by Faludi (2009) *"The EU has had an implicit territorial agenda from its inception*". In all policies. In some the agenda is more explicit with direct impacts then in others. The ROBUST policy review (O'Connell, 2021) focused on those policies which had more explicit territorial (place-based) dimensions and involved actors with cross-sectoral and network governance arrangements. Correspondingly,

[1] Green Infrastructure Strategy (2013); Habitats Directive (1992); Biodiversity Strategy to 2020 (2012); Invasive Alien Species Regulation (2014); Water Framework Directive (2000); Marine Strategy Framework Directive (2008); Forest Strategy (2013); Common Agricultural Policy (2013); Thematic Strategy on the Urban Environment (2006); Renewable Energy Directive (2009); Climate Change Adaptation Strategy (2013), and Trans-European Network—Transport (2014)

this chapter highlights the following specific policies: the Territorial Agenda, The Green Deal and the Farm to Fork Strategy which it encircles, and the Long-Term Vision for Rural Areas. In addition, the authors have extended the policy selection to cover four additional policies considered to be central to rural-urban ESS links, namely the Biodiversity Strategy 2030, The Forest Strategy 2030, the Soil Strategy 2030 and the Nature Restoration Law.

In summary, inspired by the review by Bouwma et al. (2018) on the integration of ESS in EU policies, we have further honed our policy selection in light of broad conceptual concerns in ROBUST with rural-urban relationships, and their optimal networked governance. As a result, we present in this chapter a review of eight EU policies that hold particular potential to create rural-urban synergies through ESS policy objectives. The following sections outline the method adopted for the policy reviews, the results of our investigation, and a summary of conclusions on the progress of mainstreaming ESS across the EU policy arena.

15.2 Policy Selection and Analysis

Building on the framework offered by Bouwma et al. (2018), eight specific European Union policies were selected on the basis that they support the strengthening of ecosystems services, either directly or indirectly. The starting point for the selection was the high-level Green Deal, under which all seven of the remaining policies are subordinated in their specificity and environmental focus. Unlike Bouwma et al.'s study, which examined the coherence of ESS in EU policy mechanisms, our study aimed to highlight rural-urban synergy potentials of each policy. The review focused on the main policy documents (Table 15.1), and did not extend to a review of all supporting documents (guidance manuals, plans and programs).

In reviewing each of the policy documents, we sought out explicit mentions of ESS as a distinct term. We also reviewed the reference of particular ESS types

Table 15.1 EU policy documents reviewed

Publication date	Policy
2019	Green Deal
2020	Biodiversity strategy
2020	Farm to fork strategy (F2F)
2021	Soil Strategy 2030
2021	Forest Strategy 2030
2021	Territorial agenda
2021	Long-term Vision for Rural Areas (LTVRA)
2024	Nature restoration law

(Fig. 15.1 below), namely provisioning, regulating, and cultural ESS (see Table 15.2).

In Fig. 15.1, the three categories show implicit references to ESS in the inner ring, explicit but general mentions of ESS in the middle ring, and, in the outer ring, explicit references to specific ESS.

Implicit references to ESS include references to types of ESS function, although the term itself is absent. An example includes the management of water cycles, which is not presented as an ESS in the policy document, but fulfils an ESS function.

Explicit general categorises any direct policy reference to ESS as a term or concept, but which lacks the specification of the ESS or its functionality. An example of this is where ESS is highlighted as an important tool in biodiversity management.

Explicit specific mentions of ESS in policy documents link the term to a specific functional application, for example the sequestration of carbon in a specific context or territory.

Figure 15.1 thus provides a graphic overview of the ways in which ESS appear in the selected eight EU policies. It is clear that all 8 of the policies are related to regulation and maintenance ESS, closely followed by provisioning services, with mention in 7 policy documents. Cultural ESS appears in only five. It is also notable that most of the ESS references are specific (i.e. in the outer ring).

Figure 15.2 (below) shows the extent to which EU policies integrate ESS using a territorial approach, showing higher opportunities for valuing rural-urban synergies.

Figure 15.2 shows that the Green Deal is the least integrative of these policy instruments, potentially due its broader scope, reflected in its policy vision. The Farm to Fork Strategy and the Territorial Agenda are more integrative (to about the same extent, signified by their overlap). Farm to Fork sets out a holistic vision for the whole food system, spatially uniting rural production and urban consumption, while the Territorial Agenda calls directly for rural-urban partnerships in relation to planning. The Green Deal, as a high-level policy, lacks detailed territorial links.

While Fig. 15.1 addresses how policies explicitly or implicitly open space for, or acknowledge ESS, Fig. 15.2 addresses the nature of the policies that have been reviewed, in which some are eco-driven, purely biodiversity or nature oriented, and others have complementary social and economic concerns. Figure 15.2 provides an indication of which policies are more likely to generate synergies as a consequence of ESS references being integrated in the policy documents. However, a low level of rural-urban synergy—for example in the case of the Green Deal, does not suggest that rural-urban links are absent, but rather that there is no synergy specified, nor is spatial or functional synergy facilitated via ESS. For example, the Green Deal highlights the importance of urban biodiversity but makes no mention of how urban biodiversity links to rural surroundings (for example through the proliferation and connection of wildlife corridors).

In some cases, the policies may be antagonistic to rural-urban links rather than enabling synergies—notably the Soil Strategy. This results from the fact that the Soil Strategy advocates land-take in urban areas for development, while protecting rural soil resources, but reducing the opportunities for connections. Consequently, the Soil Strategy appears in Fig. 15.2 as indicating less integration of ESS and therefore a low rural-urban synergy.

Table 15.2 Information on ESS and rural-urban relations considered in the policies analysed

EU policy	How are (ESS) explicitly mentioned in documents?	Ecosystem services			Rural-urban relations
		Provisioning	Regulation and maintenance	Cultural	
BD 2030	6 times explicit Focused on contribution to GDP; restoration targets; soil ecosystem protection from land take; forest economy; protection and restoration of biodiverse areas with high ecosystem services; Reference to IPBES report	New medications; key economic sectors—construction, agriculture, and food and drink	Soil fertility, nutrient cycling and climate regulation		Rural tourism or recreation; Ecological corridors for territorial cooperation
TA 2030	3 times explicit (sections 50, 54, 55)		Mitigation of climate change; Avoid BD loss; Risk mitigation and adaptation	Raise awareness of BD	Explicit mentioning the role of ESS in rural, urban and peri-urban areas and their specificities; The need to progress on urban "rural-urban partnerships" Also "need to promote rural-urban linkages" but in association explicitly with ESS; Reference made to land take

Farm to fork	F2K: No explicit mention of ESS. Acknowledging the benefits of sustainable food systems.	Reduction in pesticides/ fertilizers; enhancement of biodiversity linked to farm and fishery Seed diversity; Action plans on organic farming, carbon farming, agroforestry. Alt proteins; CAP—48.5% of payments linked to ecoschemes by 2023–27 (about 25%)	Close coherence with the Biodiversity Strategy 2030; CAP—member states will need to take account of EU regulations on environment (air, water, energy, biodiversity, pesticides) when setting their CAP Strategic Plans		Increasingly urbanised populations want to feel connected to their food
Soil strategy	6 times explicit Cropland (1/3) and grasslands in the EU provide EUR 76 billion worth of ecosystem services per year. ES inherent to healthy soils and lost with sealed soils. Relation between the use of sustainable soil management practices and safeguard of ecosystem services. The value of the soil capital must be properly reflected in natural capital accounts.	Crop production and grasslands; food and biomass production (agriculture and forestry); source of raw materials	Absorb, store and filter water and transform nutrients and substances, thus protecting groundwater bodies; Provide the basis for life and biodiversity, including habitats, species and genes; Act as a carbon reservoir; Flood peaks and heat event	Provide a physical platform and cultural services for humans and their activities; constitute an archive of geological, geomorphological and archaeological heritage	Urban sprawl and soil sealing consume nature and transform valuable ecosystems into concrete deserts. This often affects the most fertile soils and reduces the potential for farmers and foresters to make a decent living; Integrate the land take hierarchy' into their Urban Greening Plans (related to Biodiversity strategy) and give priority to reusing and recycling land and to quality urban soil

(continued)

Table 15.2 (continued)

EU policy	How are (ESS) explicitly mentioned in documents?	Ecosystem services			Rural-urban relations
		Provisioning	Regulation and maintenance	Cultural	
Long term vision	4 times explicit Rural areas are suppliers ESS and essential in delivering an environmentaly resilient countryside, and the Green Deal (especially sustainable use of natural resources); Rural Pact and Action Plan to integrate multi-scale governance.	Agriculture, fisheries and forestry. Renewable energy. Expansion of the rural bio-and circular economy. These land/water uses directly impact other ESS; Mission on soil health and food	Rural areas underpin biodiversity through sound land use. This in turn aids air and water quality and healthy soils; Peatland restoration and carbon farming; Municipal empowerment of energy transition	Rural areas are the sources of European tradition. Narratives for adding value. Accessible and lively places which offer employment and recreation	Rural areas and their ESS are more vulnerable to climate change than cities; Digital connectivity and mobility implicitly affect ESS supply and overcome rural-urban barriers; governance needs to acknowledge rural-urban interdependencies; Especially through community level local development; soil mission links rural and urban practices
Green Deal	3 times explicit and 2 other times in indirect ways	Food, fresh water and clean air, and shelter	Absorption of CO_2; Mitigate natural disasters, pests and diseases, regulate the climate		Mention the biodiversity strategy with proposals to green European cities and increase biodiversity in urban spaces; to achieve EU GD aims it is essential to increase the value given to protecting and restoring natural ecosystems

Forestry Strategy 2030	20 explicit references to ESS and 35 to services; Refers to importance of soil for forest as a support service; Policy provides financial incentives—boost the forest bioeconomy; payment for ESS; carbon farming practices; Carbon sequestration; Climate benefits	Food supports the economy and the social fabric in rural areas	Carbon stock and sink functions; Protect people land and houses from floods, wildfires, landslides; Pests, diseases; Water regulation; Clean air; Habitats	Explicit reference to: hub for cultural heritage and craftsmanship, tradition and innovation—relevance for tourism; human health; educational programmes Ecotourism as support the economy and the social fabric in rural areas, Nature tourism and nature-based well-being	There is potential for extending forest and tree coverage in the EU through active and sustainable re- and afforestation and tree planting. This concerns mainly urban and peri-urban areas (including e.g. urban parks, trees on public and private property, greening buildings and infrastructure, and urban gardens) and (….) the establishment of ecological corridors)
Nature restoration law	23 explicit references most in the whereas section; Food provision climate related; Provides for targets and restoration measures to recover land areas and ecosystems: 20% land areas and sea areas by 2030 and all ecosystems by 2050; Restoration of urban ecosystems	Food production	Regulation of air, water and climate; Reduction of disease risk; Protection from natural hazards and disasters; Pollination and soil protection		Urban ecosystems are explicitly mentioned

(continued)

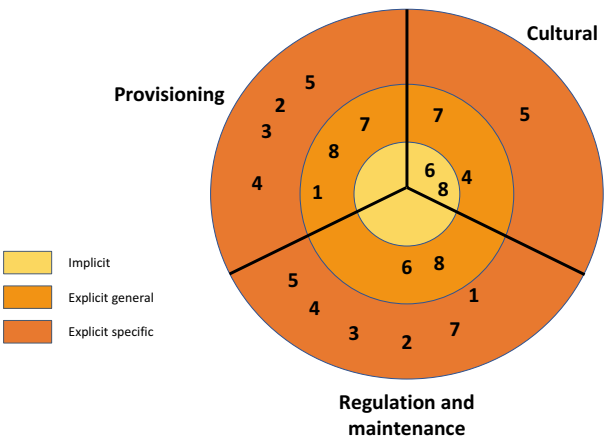

Fig. 15.1 Typology of eight EU policies in relation to ESS

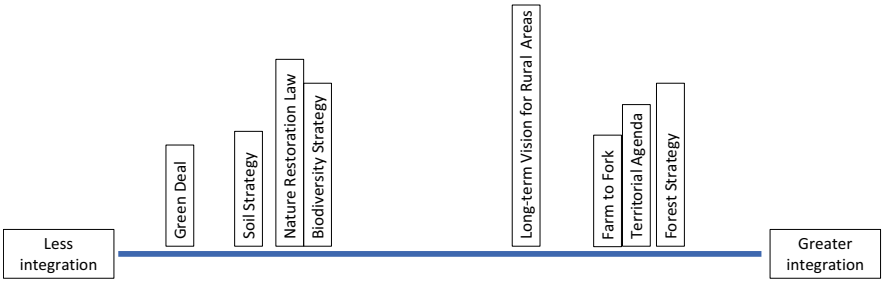

Fig. 15.2 Level ESS integration within EU policies for rural-urban synergies

The Biodiversity Strategy 2030 specifically mentions ESS, but does not envision how ESS enhancement fosters rural-urban synergies. In fact, urban biodiversity concerns are mostly separated from rural biodiversity in the document, thus failing to connect with important linking sectors such as the food industry and construction development. Such spatial synergies appear as urban-to-rural tourism and rural-to-urban mineral flows.

Generally, in Fig. 15.2 the left hand side cluster of policies is closely concerned with ecological functions and flows but they lack some territorial contexts. By contrast, the right hand side cluster of policies is broadly focused on eco-social visions for the countryside and for spatial connectivity.

In the next section the ESS and rural-urban links of each of the eight strategies is briefly described.

15.2.1 Green Deal

Ecosystems provide essential services such as food, fresh water, clean air, and shelter, they mitigate natural disasters, pests and diseases and help regulate the climate. There is a strong connection to biodiversity, speaking of worldwide erosion of biodiversity, caused primarily by changes in how land and sea are used, direct exploitation of natural resources, and with climate change as the third most important driver of biodiversity loss. GD also connects to the EU forest strategy, building on the 2030 Biodiversity Strategy, as a sustainable forest can increase absorption of CO_2 while improving the resilience of forests and promoting the circular bio-economy.

15.2.2 Biodiversity Strategy 2030

ESS are mentioned six times in the Biodiversity Strategy 2030, namely when referring to the contribution of BD to GDP in general and pinpointing forest economy, the protection and restoration of biodiverse areas with high ecosystem services, assessing the health of ESS and the establishment of restoration targets, the protection of soil ecosystem service from land take. Furthermore, "the Commission will increase its support to the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services".

The Strategy alludes to provisioning services when mentioning biodiversity in the development of new medications, or its contribution to key economic sectors as in construction, agriculture, and food and drink. Connection to regulating services is provided by reference to biodiversity in soil fertility, nutrient cycling and climate regulation. Cultural services are touched upon when referring to tourism and recreation. In the latter case, biodiversity is contextualised in the framework of the added value arising from biodiversity-enhancing agriculture and freshwater restoration. There is no mention of the role of ESS or BD in promoting urban-urban relations. Urban BD concerns are kept in a separate and distinct spatial section of the strategy.

15.2.3 Farm to Fork (F2F)

F2F is a key tool of the European Green Deal (which proposes a carbon neutral continent by 2050). F2F is also closely related to the Biodiversity Strategy 2030. An important departure for F2F from earlier food and agriculture policies is its attention to the whole system, covering not just production, but the entire food chain as well as consumption and the reduction of waste. Reform of the Common Agricultural Policy has been reformed to support and integrate F2F and Biodiversity Strategy objectives, highlighting the ESS potentials of agriculture, although no explicit mentions of ESS appear in the policy document. Key objectives are related to the

reduction of the harmful environmental impacts of agriculture, including pesticide and fertiliser inputs. Rural-urban connections are acknowledged in relation to advancing urbanisation, with evidence that urban consumers want to feel connected to rural areas through the food they eat, and the qualities embedded within it, while waste processing functions of the countryside and peri-urban areas also come into focus. A key target is the increase of the proportion of the CAP allocated to agri-environmental subsidies to almost 50%, including support for organic agriculture. Detailed decisions about the nature of F2F implementation will be taken at national level, underlining the great diversity of agricultural systems and practices (and urbanisation) in member states.

15.2.4 Soil Strategy

ESS is a core element in the concept of healthy soils). The EU Soil Strategy recognises urban sprawl and soil sealing as major threats to healthy soils. ESS associated with soil are fully acknowledged including food and biomass production, provision of raw materials, carbon reservoir, and the protection of groundwater bodies. Soils form the basis for life and biodiversity, including habitats, species and genes, provide a physical platform and enable cultural services for humans. Soils also constitute an archive of geological, geomorphological and archaeological heritage.

The Soil Strategy recognises that coordinating water and soil policies is essential to achieving healthy soils and aquatic ecosystems through better soil and water management, including across borders, and reducing the impact of floods on people and the economy. Soils are generally healthy in unmanaged and natural ecosystems. However, managed ecosystems can also be maintained for healthy soils through the application of sustainable soil management (SSM) practices, including regenerative farming in line with agro-ecological principles, adapted to the wide variability of soil ecosystems and types.

Member States are encouraged to restore, conserve and promote sustainable use of soils in their programmes taking advantage of EU cohesion policy, making full use of the EU guidance on integrating ecosystems and their services into decision-making.

15.2.5 Forest Strategy 2030

ESS are central in this strategy in relation to all types of services. Forests and other wooded land are considered essential for the health and well-being of all Europeans, for climate benefit and for nature protection. Several ESS are specifically mentioned, notably the importance of soil for forest as a support service, but also the services provided by forests such as those related to a climate neutral future and carbon sequestration, food, nature or ecotourism and educational programmes.

Forests are recognized as providing multifunctional sets of goods and services. Emphasis is also placed on the relevance of rewarding forest owners and managers for the provision of ecosystem services. Reference is made to the role of afforestation for climate change and disaster risk mitigation strategies particularly in urban and peri-urban areas (including urban parks, trees on public and private property, greening buildings and infrastructure, and urban gardens) and agricultural areas (including in abandoned areas as well as through agroforestry and silvo-pastures, landscape features and the establishment of ecological corridors). Exposure to green and forested areas can offer physical and mental health benefits.

The strategy points to the urgent need for adaptive forest restoration and ecosystem-based management approaches that strengthen the resilience of EU forests and enable a forest-based bio-economy. It also steers towards avoiding the escalation of socio-economic costs associated with forest disasters. It aims to protect people, land and houses from floods, fires and landslides, and at the same time to preserve the carbon stock and sink function, clean air, water regulation, and habitat functions, and other ecosystem services provided by forests that are vital for human health and wellbeing.

15.2.6 Territorial Agenda 2030 (TA2030)

The EU has no mandate to deliberate on Spatial Planning policy (Faludi, 2009). Thus, coordination in Europe occurs in informal meetings of the Ministers responsible for spatial planning, territorial development and/or territorial cohesion. In 2020, Ministers agreed on the Territorial Agenda 2030 of the European Union. It aims to provide "an action-oriented framework to promote territorial cohesion in Europe". The TA2030 is expected to be implemented within Member "countries at national, regional and local levels, and in cooperation with other countries". The TA2030 makes explicit reference to ESS, notably when covering climate change mitigation, combating loss of biodiversity, and in mitigating climate related risks by building on Nature-based Solution (NBS) and Green Infrastructure (GI).

It also refers to the specificity of ESS in rural-urban relations, by highlighting the role of ESS in framing the specificities of territories (urban, peri-urban, rural) but not associating "the need for rural-urban partnerships" explicitly with ESS, even though concerns with land take are expressed.

15.2.7 Long-Term Vision for Rural Areas (LTVRA)

Rural areas are presented as vital suppliers of ESS within the LTVRA which, on the one hand, highlights the importance of rural areas to European traditions and diversity, and, on the other hand, looks ahead to opportunities for sustainable, resilient and profitable rural land use opportunities (e.g. forestry, agriculture and fisheries).

Key to the realisation of these objectives is soil protection (especially ensuring the end of peat extraction and restoring peat landscapes). Digital connectivity is presented as enabling viable rural livelihoods and low-carbon energy transitions within rural landscapes, the latter specifically foreseeing municipal leadership.

An important mechanism within the LTVRA comes in the form of Rural Pacts, which are cross-sectoral alliances (public-private-civil-research) which allow local stakeholders to discuss, agree and prioritise rural objectives and integrate their implementation across government levels (local/regional, national, EU) and related financial and policy tools. The Rural Pacts rely in turn on effective network governance arrangements.

15.2.8 Nature Restoration Law (NRL)

The NRL is stated that it contributes to the long-term and sustained recovery of biodiverse and resilient ecosystems through the restoration of degraded ecosystems. The NRL also contributes to overarching objectives concerning climate change mitigation and adaptation, land degradation neutrality and food security. It establishes a framework, through targets and measures. It is anticipated that, within these, Member States will put in place effective and area-based restoration measures to restore the quality of at least 20% of land areas and at least 20% of sea areas by 2030, and all ecosystems in need of restoration by 2050.

The NRL covers "urban centres' and 'urban clusters"as territorial units classified in cities and towns and suburbs, adopting the concept of urban ecosystems, therefore potentially contributing to the enhancement of rural-urban synergies through the use of ESS. References to ESS are multiple but general, emphasizing regulation of air, water and climate, and food provision and pollination. Finally, the NRL specifically prioritizes action in the Natura 2000 sites.

15.3 Discussion

Our review covered EU policies which include mention of ESS, or make reference to ESS functions. We ranked these (schematically, in Fig. 15.1) according to their implicit/explicit and specific/general coverage of ESS. The objective of the policy review was to assess the opportunities for EU policies to nurture rural-urban links and synergies by supporting ESS. In the following section, we briefly discuss how each policy could better promote ESS for rural-urban synergies.

It is notable that policies which are environmentally specific in their policy aims are predominantly associated with rural territory. The Biodiversity Strategy 2030 and the Soil Strategy, for example, both focus strongly on extensive areas of rural habitat and land, not least because urban ecological value is quantitatively marginal and urbanisation processes may contribute to capping soils (Maes & Jacobs, 2017).

For instance, the Biodiversity Strategy and Territorial Agenda both emphasise the importance of ecological corridors and linking communities, whereas the Farm to Fork (F2F) strategy and Long-term Vision highlight social and economic connections but lack comprehensive integration of natural processes.

Mentions of urban ecosystems are mainly focused on green spaces in a decontextualized way. Surprisingly, these eco-focused policies do not make explicit the interdependence of rural and urban territories concerning biophysical and ecological processes. Other policies which are more concerned with the confluence of human and natural processes, notably the Forest Strategy, the Territorial Agenda 2030 and the Farm2Fork, are more reliant on rural-urban links, more explicit about their ESS objectives and exhibit these across two of the three ESS dimensions (cf. Fig. 15.1).

In line with the assessments offered in Chap. 14, very little specific contribution to cultural ESS is evident in EU policies. These are ultimately driven by a more targeted and long-established environmental policy framework and less so by a unified European vision on social and cultural aspects in general, including those dependent on ecosystems and their services. Enhanced management of the "superdiversity" of Europe (Abdou & Geddes, 2020) might reposition cultural ESS within more regional and local scales in policy-making.

The European discourse on rural-urban relationships and the need for a new policy agenda that integrates both in a synergistic manner is longstanding but has seen slow positive change over time. Policies sometimes cross-reference each other but are not integrated, meaning they do not capitalise on each other's strengths to enhance performance. Many scholars support the notion that breaking down policy silos and fostering integrated approaches are crucial for enhancing rural-urban synergies (e.g. Schröder, 2020 and Egal and Forster, 2020) argue for an rural-urban continuum in policymaking.

15.4 Conclusions

Our review suggests that, perhaps because policies tend to be dedicated to specific sectors or territories, this policy siloing hinders the development of effective rural-urban synergies that require policy integration. While some policies reference each other, they lack full integration and fail to leverage each other's strengths.

Policy integration is needed vertically, following the natural hierarchy from high level to low level policies, but also horizontally, relating to other similar or complementary policies. And of course operationalizing policy integration strongly depends on understanding and transforming underlying worldviews and mechanisms. Using the *"sticks, carrots, and sermons"* trilogy (David et al., 2024) to analyse policy approaches in vertical integration, it appears that different sectors and policy levels employ varying sets of tools for implementation. While high-level strategic policies, such as those reviewed in this chapter, tend to operate at the "sermon" level, relying on their inspirational nature to leverage lower-level policies where "carrots" (e.g. subsidies) and "sticks" (e.g. taxation) typically apply.

In our perspective, the ecosystem services (ESS) conceptual framework, due to its socio-ecological nature, is well-equipped to act as a transversal unifying feature—a common denominator that could permeate policy silos and connect rural and urban realms, stimulating horizontal integration. Our review displays promising signals. It shows that the ESS framework, despite not being explicitly introduced in a cross-cutting way, is implicit in many policies, particularly those more eco-centered. While territorially focused policies show potential for its integration.

Ultimately, optimising ecosystem services across territories and sectors would impact a wide policy spectrum, from improving environmental policy, to urban planning, and rural development. Thus, to enhance rural-urban synergies, a more cohesive approach across policies is needed, emphasising spatial and functional interdependencies to promote human well-being and advance sustainability transitions.

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