Powell, John R and Clark, Michael and Vigileos, George and Davis, Mike and White, Simon (2004). *Mapping the Rural Economy - A Tool-Kit for Decision Making Support.* Project Report. Monmouthshire County Council, Monmouth.

UNIVERSITY OF GLOUCESTERSHIRE

MAPPING THE RURAL ECONOMY – A TOOL-KIT FOR DECISION MAKING SUPPORT

Produced by the Countryside & Community Research Unit (CCRU), ADAS and White Consultants for the Welsh Development Agency (WDA) and Monmouthshire County Council (MCC)

MAPPING THE RURAL ECONOMY – A TOOL-KIT FOR DECISION MAKING SUPPORT

Produced (2004) by the Countryside & Community Research Unit (CCRU), ADAS and White Consultants for the Welsh Development Agency (WDA) and Monmouthshire County Council (MCC)

Project team

John Powell (CCRU)– Project Manager
Michael Clark (CCRU)
George Vigileos (CCRU)
Mike Davis (ADAS)
Simon White (White Consultants)

Glossary

CCW: Countryside Council for Wales
LCA: Landscape Character Area
LEU: Land Economy Unit
MCC: Monmouthshire County Council
WDA: Welsh Development Agency

CONTENTS

APPENDICES

MAPPING THE RURAL ECONOMY – A TOOL-KIT FOR DECISION MAKING SUPPORT

What is the tool-kit?

The tool-kit is a step-by-step guidance manual that takes the user through a process that…

- **Identifies the driving forces** at work in an area
- **Predicts changes in the landscape**
- **Predicts changes in the rural economy**
- **Identifies opportunities** to enhance the landscape and/or rural economy
- **Allows the user to interpret** and feed this information into local authority decision making processes.

Who is the tool-kit for?

❖ **Policy makers developing long term strategies**
Such as the Welsh Development Agency (WDA), and the Countryside Council for Wales (CCW).

❖ **Decision makers selecting funding opportunities**

Decision makers involved in developing rural business opportunities and the development and targeting of grant programmes at the local level, such as various County agencies and departments, other Local Authorities, CCW, WDA, and WAG.

❖ **Planners making decisions about how best to develop an area**
Such as local authority planning officers

What are the Aims and Objectives?

Aim

- **To provide information to these three groups of people, at the local authority scale, to help them make better decisions about how economic and cultural forces that are driving change will affect the landscape and rural economy.**

Objectives

- **link potential changes in the rural economy to impacts on the landscape and impacts on the social and economic life of rural communities.**
- **provide a 'rural economy layer' to LANDMAP to aid land use related decision making**
- **identify actions that could have positive outcomes both for the rural economy and the landscape**

What is the Output?

A detailed and comprehensive dataset (potentially linked to spatial mapping, resources permitting) of the following:

- **Key changes anticipated in the main rural economic sectors (such as agriculture, tourism and forestry)**
- **How these changes will affect the landscape (landscape elements affected and how landscape character areas might be changed)**
- **How these changes will affect the rural economy (elements of the rural economy and overall spatial impact)**
- **Opportunities available for new businesses**
- **Constraints imposed by existing conditions**

The above dataset would seek to inform strategic policy documents such as: countryside strategies, economic development strategies, UDP policies and development control decisions.

How will the data be used?

There are several ways in which the information might be utilised by different groups. These are described under the three headings below.

1. Policy Makers

A key aim for the tool-kit is to provide information that can feed into ***Strategic Policy Development.*** In particular economic development and countryside strategies will benefit. The outcomes from the process should be a greater understanding of driving forces at work in each local authority area in a county and the ways in which these will impact on the elements of the landscape and rural economy. The process will enable policy makers to relate predicted changes in landscape elements to the landscape character of an area and gain a greater understanding of how such changes can be managed to maximise benefits.

This predictive tool will allow policy makers to see where they can assist in terms of:

- Supporting positive changes occurring in the landscape and rural economy
    - where positive impacts are predicted, develop policies that enhance the beneficial outcomes.

- Minimising negative impacts on the elements of the landscape and the rural economy
    - Where predicted changes will have a negative impact, develop local policies and interventions that prevent or change the impact.

2. Decision Makers

A second key aim is to provide information to decision makers such as planners, development officers, and elected councillors to assist in the ***Identification of opportunities for improvement.*** The focus on elements of landscape and rural economy that will be changed through driving forces will allow decision makers to target funding to maximise beneficial outcomes. Understanding of the constraints under which rural based businesses operate and their attitudes to driving forces (such as the changes in agricultural policy) and change will inform the decision process and result in more realistic recommendations.

Thus the tool-kit will provide a resource base for decision makers involved in ***developing rural business opportunities***. The process will identify opportunities in each LEU where either the landscape, or rural economy or both can be enhanced through specific targeting of funds, training programmes or some other resource input. This will have the added benefit of informing the development and targeting of grant programmes at the local level.

3. Planners

A third key aim for the tool-kit is to provide input into ***Individual planning decisions.*** The background information provided about the landscape and socio-economic character of each Land Economy Unit (LEU) can assist planners in resolving development issues. The development of LEUs is described in Section 1).

The background information provided through the tool-kit will tell planners about the long term changes taking place within a defined area (an LEU) in terms of both landscape and rural economy. This in turn will assist planners in knowing when a proposed development is going to assist an area or is so opposed to the long term changes taking place that its future is less assured. In doing this it will help to identify where economic development will maximise potential of an area and where it might do the most damage.

Introduction

The high quality of the landscape in many parts of Wales is a result of economic activities, in particular agriculture and forestry, that have taken place over long time periods. It is a mistake, however, to think of the landscape as a fixed backdrop to the life of an area, or to hark back to some nostalgic perception of what the landscape "should look like". As economic activities and economic policies themselves change, so the landscape changes though perhaps with a significant time lag. Rural economy and the landscape are thus intertwined and it is important to keep this in mind when developing policies or making decisions that affect either the economic resources of an area or the land base from which they arise.

It is also a mistake to think that economic changes made at the local level in order to preserve some landscape feature or local business enterprise, can fly in the face of long-term economic and cultural changes taking place at a larger (national or international) scale. Exogenous forces that drive change must be taken into account at the local level when developing strategic policies, making decisions on funding opportunities, or planning development.

The tool-kit has been designed specifically to integrate measures of the rural economy into LANDMAP, which is a geographic information system (GIS) developed by CCW for recording and managing landscape qualities and character. In this way concerns about elements of the landscape can be fully

integrated with understanding about potential the direction of change of the rural economy and the way in which this might impact on elements in the landscape.

This tool-kit thus builds on and adds to work already carried out by the Welsh Assembly and Countryside Council for Wales in developing LANDMAP. It also builds on work carried out by the Welsh Development Agency in understanding the nature of rural economies and in gathering a wide range of background information that describes the social and economic conditions of local areas. In this way, the three elements of sustainable development: economy, society and environment, are brought together in a system that will allow for greater understanding of how each element impacts the other.

LANDMAP itself allows for a greater understanding of the character of local areas and the elements that need to be preserved or enhanced in order to protect landscapes. This is extremely important for Wales and for many local economies as the character of the landscape underpins a significant amount of economic development. Landscape underpins much of the tourism in Wales, encourages inward investment in some areas, and is an essential output of agricultural and forest related activities. The major element missing in the LANDMAP system until now has been the impact of economic activity on the landscape. Through the processes outlined in this tool-kit, the effects of economic change on the landscape are accounted for which promises an era of decision making that can lead to a better balance between economic development and landscape protection.

The tool-kit is thus likely to be of wider interest than just local authorities. Its integration with LANDMAP and potential to inform strategic level thinking will make it useful to other government agencies such as: the Welsh Assembly Government, the Welsh Development Agency, Countryside Council for Wales, as well as individual businesses and the general public.

Rural Economy and Landscape

Driven by a wide range of cultural, economic and political forces (such as the impacts of an aging population, losses of public transport, changes in the Common Agricultural Policy, and changes in World Trade Organisation rules and regulations), some elements of the rural economy and landscape are likely to undergo significant change. To evaluate these changes we must first ask what the rural economy is.

'Rural economy' is extremely difficult to define as it is made up of many interlocking elements and does not respect boundaries drawn on maps. The 'rural economy' certainly includes the following sectors:

- agriculture
- energy
- forestry
- recreation and tourism

- processing/manufacturing
- service sector
- income from other areas
- minerals extraction

and may even be broader depending on the nature of the region under investigation.

It is impossible to say where the economy of one rural area begins and another ends or even to disentangle 'rural' and 'urban' economies. Markets for goods produced in rural areas vary from the local to the global, and in a similar fashion, products and services consumed within an area come from variable distances. ***The rural economy of any area is also clearly influenced by forces beyond the 'local' or even national boundary***, changes in World Trade Organisation (WTO) rules for example or Common Agricultural Policy (CAP) regulations can have significant impacts at the local level. Thus there is no attempt here to try to define a 'rural economy' for any one area.

The rural economy, however, clearly influences and is influenced by what we might call 'land use change'. This can be defined broadly in terms of:

- changes in use of land based resources
- changes in quality of land based resources
- changes in ownership
- changes in designation

A wide range of external forces (i.e. outside of a local area such as a district or county) operates to influence land use and cause change. These forces thus become the natural focus for understanding how the rural economy, land use, and landscape character, might change.

Thus there is a need to focus on changes in land use as this influences both landscape character and economy. Land use change is thus put forward as the central focus for understanding rural economic change.

In order to understand land use change one must look wider than the local and regional policies or planning strategies, to national and international forces at work causing economic change. Figure 1 below illustrates the tool-kit approach to linking exogenous forces with local elements in the landscape and the rural economy. Each sector of the rural economy in an 'area-of-interest' is affected by 'exogenous' forces, and this can result in changes in land use. Sometimes these forces are mutually reinforcing, at other times they counteract each other; sometimes they are weak, sometimes strong. The key to understanding rural change is to identify how they operate within the particular sensitivities of a local area such as a parish, district, county or region.

This requires identification of the policy tools or delivery mechanisms through which they operate (e.g. economic instruments, regulations, expenditure programmes). Once the policy tools are identified one is then in a position to explore potential affects on land use and the social and economic conditions in rural communities.

Agriculture is clearly a key driver in terms of landscape effects although its influence on the rural economy has declined as other economic sectors have risen in importance in rural areas of the UK in the last few decades. These include tourism, forestry, minerals extraction (in some areas) and the equine industry. It is thus important to look more broadly at rural areas and relate changes in driving forces that operate on these different sectors to potential change in landscape and the local economy.

LANDMAP

LANDMAP is a method of landscape analysis and appraisal, which has been developed by the Countryside Council for Wales [CCW], working in partnership with other national agencies and unitary authority representatives. The LANDMAP process, which is GIS based, entails a detailed analysis of the components that make up the landscape, and enables appraisals to be made on factors which result in changes to the landscape. LANDMAP does not itself make decisions, but provides a detailed resource base, which can inform a range of decision making processes. It can provide information on the most important elements or qualities of the landscape which should be conserved.

LANDMAP is based on five main evaluated aspects/layers. These are:

- geological landscape,
- landscape habitats,
- visual and sensory,
- historical landscape and
- cultural landscape.

Information on each of these is collected and areas mapped to define areas of common characteristics. Information on each of these areas is organised into:

- a classification of the landscape,
- a description,
- an evaluation of value, condition and trend, and
- recommendations for management.

Other mapped information includes the contextual aspects of form and function, which define what elements exist in the landscape and what function they serve. For instance, the form layer will map a woodland, and the function of this woodland may be defined as recreation. Additional information includes

the mapping of public perception of the landscape and finally, the rural economy, which is the subject of this toolkit.

Mapping is normally in MapInfo [or Arcview] and the data is stored in a purpose-built programme called LANDMAP Collector. The method is drafted to ensure consistent data collection across Wales. This is supported by a Quality Assurance system. CCW will publish all quality assured data on its website in due course to allow access by all parties.

LANDMAP assessments have been undertaken across much of Wales. The information has been used to inform policy and decision making. Outputs derived from using LANDMAP information include:

- Unitary Development Plan policies
- Development Control decisions
- Supplementary Planning Guidance including design guidelines and landscape assessments
- Landscape designations
- Action programmes for environmental improvement/management

It is hoped that as the process becomes established that further uses will be found including Countryside Strategies, Action Plans and in the case of this toolkit influencing rural economy policy and action.

The data collected through this toolkit will provide a layer of information on the rural economy, mapped in GIS and with appropriate data attached defining the current state in the rural economy, landscape constraints, possible change in the rural economy and overall conflicts and , importantly, opportunities, defined for each area. It is intended that this information is placed on a website accessible to policy makers and other stakeholders in the rural economy. It is also desirable for it to be analysed in conjunction with other full LANDMAP information to provide a fuller picture of landscape.

1. THE TOOL-KIT DESCRIBED

Overview of methodology

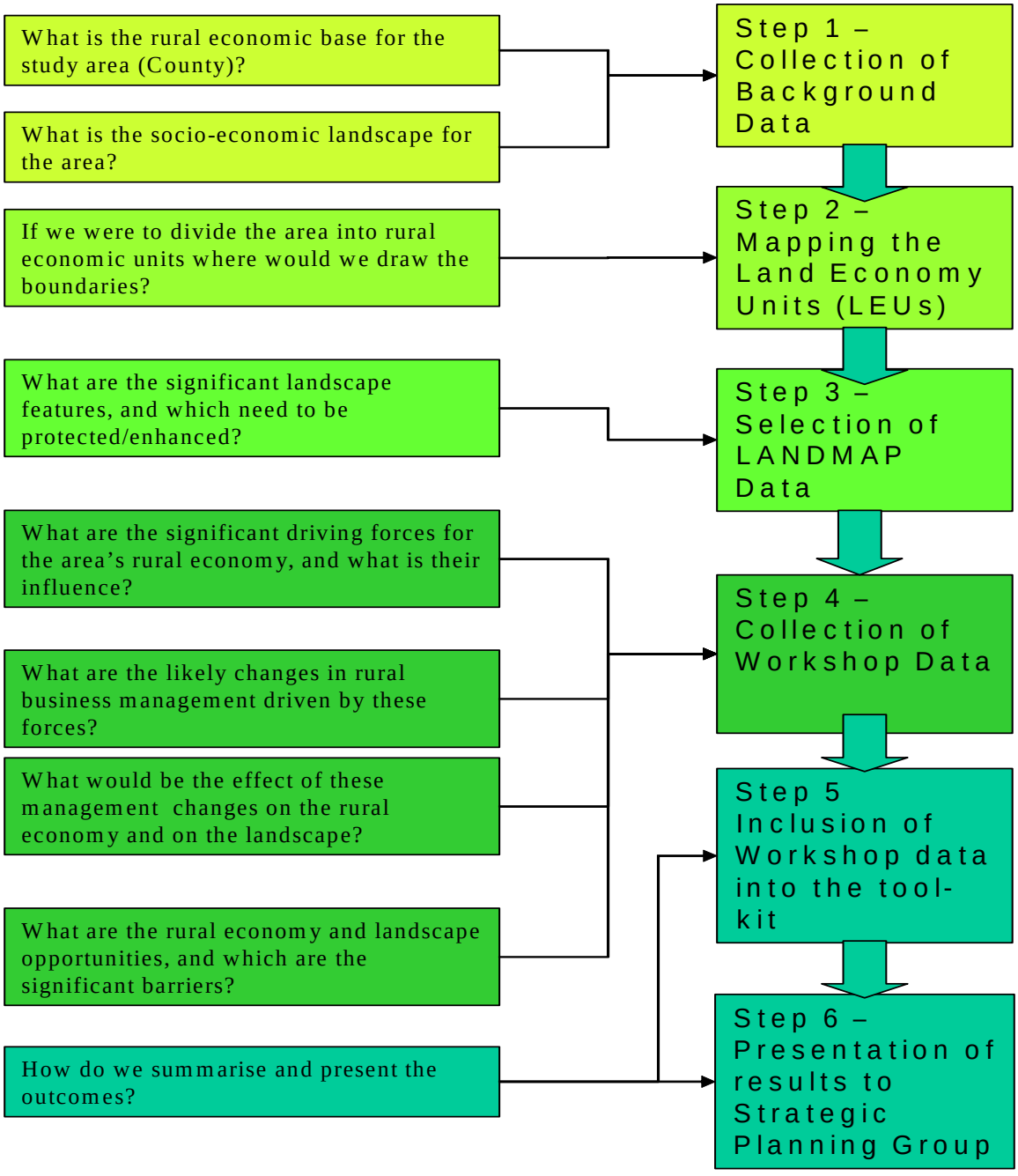


Figure 1: Schematic representation of methodological flow.
The flow diagram above depicts the basic questions that the tool-kit will be used to address, and the steps the researchers need to take to answer them.

Land Economy Units

The key concept around which data collection and interpretation revolves is the Land Economy Unit (LEU). As the landscape and economic organisation within a region (usually County) is varied, it is unproductive to study it as a whole. It is useful therefore to subdivide the region into smaller units, which contain broadly similar landscape and rural economy characteristics. For example, coarsely speaking, an area generally described as an upland landscape is more likely to be used for flocks of sheep, whilst horticulture is more likely to be taking place in the arable lowlands. Many factors are considered in dividing an area into units where the relationship of economic activity to the land is similar, and these are discussed further in Step 2.

The method is based on integrating existing background data, LANDMAP information, and workshop data (interpretation of current constraints and opportunities as identified by sector based experts and stakeholders) into a simple mapping information system. This will provide spatial information to create thematic maps - such as maps of areas where the rural economy is likely to undergo major changes, and to identify potential consequences on the landscape. It also facilitates the assessment of potential 'opportunities' considering the existing qualities of the landscape and the existing socio-economic condition of the area.

How the data works

The diagram below illustrates the geographic scale at which different data is available and the scale of the LEUs. This represents a range of information mapped at different spatial levels. Thus, for example, census data will be available at ward level, agricultural data will be available at the level of the small statistical area (approximately Parish size)

The data can be organized in three tiers:

- **Background Data:** comprising socio-economic data, which is quantitative and consists of a wide range of indicators collected from sources such as the census
- **LANDMAP Data:** which consists of a mix of interpretive and quantitative information on the area.
- **Workshop Data:** which is qualitative data derived from sector based workshops

By identifying a point on the map (and clicking on it) the underlying data information tables can be accessed. The diagram illustrates that a range of informative and workshop data can be accessed for a particular point or area of the map.

SYSTEM DIAGRAM FOR THE RURAL ECONOMY TOOL-KIT

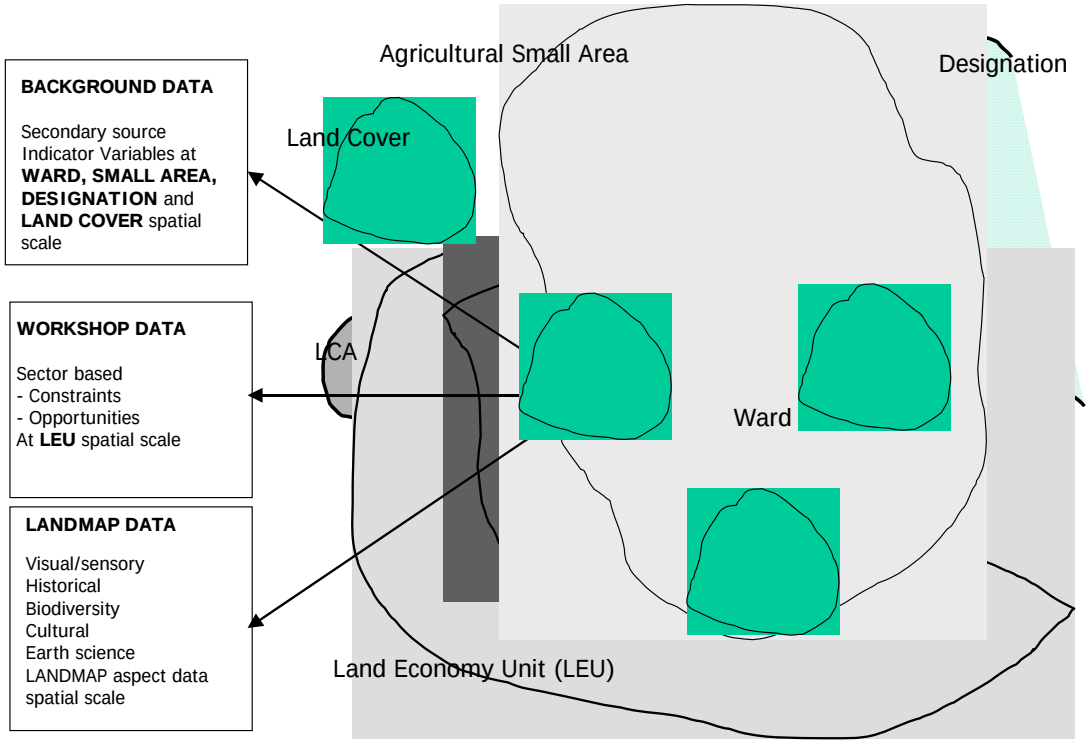


Figure 2: Data scale diagram

LANDMAP already provides a wide range of information about the landscape and presents this information spatially in the form of aspect areas - for visual sensory; biodiversity; cultural associations; earth science and history. From this, many LANDMAP studies have gone on to deriving Landscape Character Areas (LCAs).

LANDMAP Rural Economy provides an important missing link in the form of an assessment of the rural economy for a given area. It does this by defining '**Land Economy Units**' (LEUs - Step 2), which form a rural economy layer for LANDMAP. Experts in the local economy and the landscape of the county create these units through a process of subjective interpretation of a range of data. They are thus subjective boundaries but based on a rational assessment of a range of factors under the four heading listed below.

- Agri-environment/ land use
- Tourism
- Accessibility
- Level of development

Using a set of key factors (see Step 2: 'Mapping and classifying the LEUs') and local knowledge, allows the project team to create a series of LEUs that reflect differences in the rural economies of the county. The LEUs then become the focus of development for the interpretive layer of information in the system (derived from the **Workshop Data -** Steps 4 and 5).

The rural economy information can be used in tandem with the other LANDMAP layers to inform day-to-day decisions.

A wide range of information on the physical resources, and interpretation of that information to create aspect areas, and in some cases, landscape character areas (LCAs), already exists in LANDMAP. What this project does is provide the missing link, which is an assessment of the rural economy of the county. This is the '**Workshop Data**' based on an assessment of the constraints and opportunities existing in each LEU for each relevant economic sector. Used together, the **Background Data** (socio-economic information), **LANDMAP** and **Workshop Data** can assist decision making at a range of scales by identifying constraints on potential actions, opportunities for change and the likely effects on elements of the landscape.

Storing and Using the Information

The information will be stored in two ways:

- By local authorities using MapInfo or Arcview with a MS Access database
- On the web, through local authorities or CCW.

The purpose of the information is to help guide and inform decision-making including development of strategies and policies.

It is expected that the key documents it will inform are **Economic Development Strategies and Countryside Strategies.**

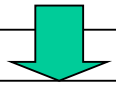
The information will enable policies will to be targeted in a spatial and more sensitive way relating to the Land Economy Units and key issues arising from the exercise could inform generic policies for a local authority area.

In addition to policy, the database could be used on a regular basis to help inform day-to-day planning decisions. Some data may need interpretation by specialists but the majority would be helpful to planners as a first guide to the sensitivity of the landscape of an area or the opportunities it offers.

The Rural Economy layer could be overlaid other data sets in GIS to carry out further analysis as required.

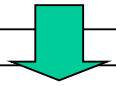
2. USING THE TOOL KIT

Step 1 – Collection of Background Data

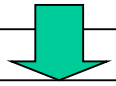


Step 2 – Mapping the Land Economy Units (LEUs)

Step 3 – Selection of LANDMAP Data



Step 4 – Collection of Workshop Data



Step 5 Inclusion of Workshop data into the tool-kit

Step 6 – Presentation of results

Step 1 – Collection of Background Data

What needs to be done?

- Collate the relevant information (socio-economic indicators) from the identified sources (such as the Census, or Small Area Statistics).

- Prepare data in visual form and overlay onto maps.

Who needs to be involved?

The consultant team[1] (referred to subsequently as 'the team') will compile the background data.
The team should include the following expertise:

- Agricultural data assessment skills
- Environmental Planning
- Rural economics
- LANDMAP

How is it done?

Background data is any data collected/collated at the county scale, which might be useful to the issues under examination. This can be point data e.g. the location of accommodation units, or polygon data e.g. census data on household car ownership. The amount of background data is inexhaustible, and any data collected at the county scale and which is mappable within the county could be included.

The use of background data use depends upon the objective of the exercise (e.g. to identify areas for housing development) and on the availability of data at specific County level

[1] This can be an external team of consultants, or a Local Authority team provided the expertise to run the workshops and analyse the results is available internally.

Example of Key Background Data requirements			
Type of Indicator	**Indicator**	**Spatial Scale**	**Source**
Land use			
	Agricultural land classification		**Agricultural Small Area Statistics**
	No. of holdings:		
	tillage	Ag. Small area	
	cereals	Ag. Small area	
	Horticulture	Ag. Small area	
	Dairy cattle	Ag. Small area	
	Beef cattle	Ag. Small area	
	Pigs	Ag. Small area	
	sheep	Ag. Small area	
	fowl	Ag. Small area	
Land cover			
	Conifer plantations	Point	
	Improved grassland	Point	
	Arable	Point	
	Broadleaf woodland	Point	
Socio-economic			
	Total farm employment	Census Ward/COA	**Census**
	Population change	Census Ward/COA	

	Car ownership	Census Ward/COA	
	Unemployment	Census Ward/COA	
	Income support claimants	Census Ward	**DWP/ Welsh Assembly Government**
	Child benefit claimants	Census Ward	**DWP/ Welsh Assembly Government**
	Income - New Earnings survey (2002) (Gross pay – ward average)	Census Ward	**Welsh Assembly Government**
	Welsh Index of Multiple Deprivation(2000)	Census Ward	**Welsh Assembly Government**
Tourism			
	Location of accommodation units	Point	**Local Authority**
	Location of activity units	Point	**Local Authority**
	Location of tourism attractions	Point	**Local Authority**
	Location of farm holidays	Point	**Local Authority**
Rural Businesses			
	Abbatoirs	Point	**Local**

			Authority
	Animal Feed Merchants	Point	**Local Authority**
	Livestock Markets	Point	**Local Authority**
	Saw mills	Point	**Local Authority**
Services			
	Post Office Location	Point	**Local Authority**
	Main bus routes	Line	**Local Authority**

Table 1: Example of Key Background Data requirements

The team should liaise with Local Authority officers to ensure that the data set includes indicators relevant to the key socio-economic and environmental issues facing the particular 'region' (such as unemployment figures and Index of Multiple Deprivation). The key background data can be compiled from existing data sources. These are indicated below for a number of key background data.

This information will be used by the team to design LEU boundaries (**Step 2**) and together with the workshop data to prepare the presentation for policy makers (**Step 6**).

If adequate resources are available, the following can be carried out to produce an online version of the tool-kit:

- Import tabulated data into a relational database (Access).
- Import Geographic Information System (GIS)/boundary data (wards, agricultural small areas, land cover, designation) into a GIS system (Mapinfo).
-
- If required, thematically map selected variables in Mapinfo and store as individual layers (i.e. set up data layers to allow analysis of interaction between factors).

Output

- background socio-economic and land use data
- data to inform the drawing of LEU boundaries (Step 2)
- data to prepare presentation to policy makers (Step 6)

On the digital version the user will be able to click on a point on the map and gain access to the background socio-economic and land use data. A summary description of the LEU (within which this point lies) will also be accessible through a link on the map.

For the purposes of the team, this data will be used to determine the LEU boundaries on a combination of factors (see Step 2). It will also be used to summarise the socio-economic condition in the LEUs for the presentation to policy makers (see Steps 5 and 6).

Step 2 – Mapping and Classifying the Land Economy Units (LEUs)

What needs to be done?

- Define the Land Economy Units (LEUs)
- Map the boundaries (digitise using MapInfo preferably) along with simple description of each LEU identified and a rationale for the selection. [use LEU background data form B1 in appendix 1]
- Re-visit and refine at 5- year intervals.

Who needs to be involved?

The project team, local authority officers, and agricultural/forestry/tourism experts with knowledge of the local area. Good local knowledge of the area under study is essential. This decision process requires knowing which rural economic activities dominate which landscape type areas (knowledge of resources and resource potential), and how these activities are organised (physical and cultural networks, such as roads and markets).

How is it done?

Define the Land Economy Units (LEUs)

On a large-scale map of the entire area of interest (e.g. County), and using the land economy factors identified below, the team defines the boundaries of the LEUs on the map in liaison with the following:

- Economic Development officer
- Planning Officer
- Tourism Officer
- Landscape officer
- Biodiversity/woodland officer
- Agricultural expert (internal or external to the authority)

This ensures the incorporation of knowledge of the local authority area from different viewpoints and areas of expertise.

The team examines the data (refer to Step 1 for background data; also use other sources of information as necessary - such as OS maps and other land use maps which might be available at County level), overlays maps and gets

agreement amongst the actors with local knowledge as to where the boundaries for the LEUs should be drawn.

1. The first step is to identify upland and lowland land units and to differentiate the land by type of agricultural activity and land cover. This creates a number of units across the county, which indicates the major types of land cover (e.g. urban, woodland, improved grassland, arable, unimproved grassland). These areas are identified on a large A1 map of the county.

2. The second step involves identifying areas where tourism is important in the local economy and the different types of tourism. The boundaries of these areas are also identified on the map and the sources of service provisions discussed in detail. Information on tourism service provision is used to assist identification of major tourism service provider areas.

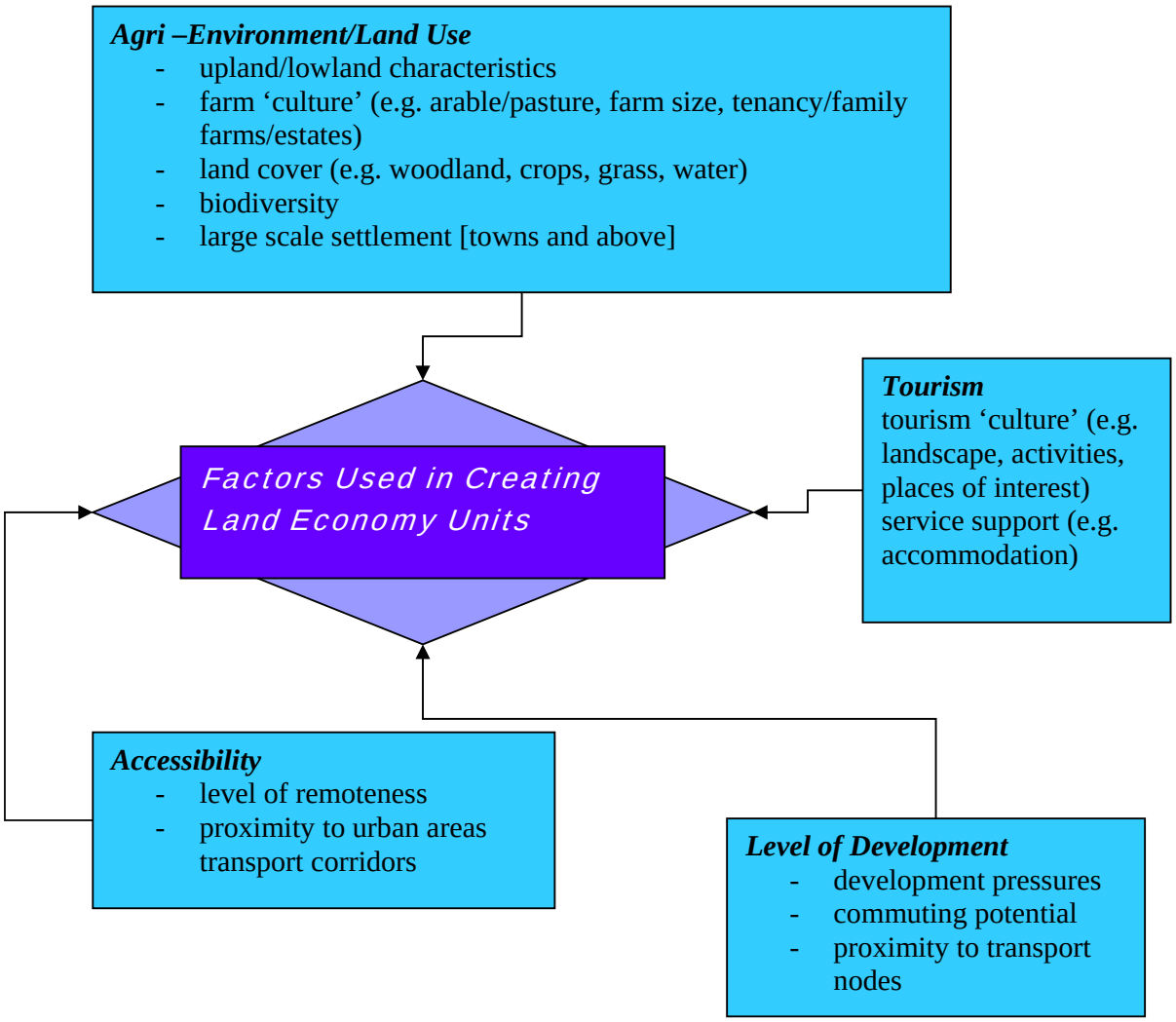
3. The third step examines the boundaries of the identified areas in terms of accessibility and transport corridors. Based on the purpose of the different transport corridors and their impact on the surrounding land, they can either be incorporated in LEUs, or they can form an LEU by themselves. Some major transport corridors, because of their effect on the economy of the surrounding areas (e.g. providing commuter residential areas, attracting business, changing land values) can be designated as a separate LEU, others may merely be a conduit for through traffic and have little impact on the local economy. Similarly, areas that are marked by remoteness compared to other parts of the county can form an LEU.

4. The level of development is a final factor in defining the boundaries as this takes into account, not just existing urban areas, but also development pressures and commuting potential.

5. The next step is to review the range of different boundaries drawn on the map and to look for overlaps. Where boundaries overlap there is a stronger case for making it the boundary of an LEU. Some LEU boundaries are easier to define than others, because they are fairly distinct in terms of landscape and land cover.

6. Once the LEU boundaries have been delineated they are characterised by short textual descriptions and the boundaries drawn on an A1 sized map. This map and the descriptions will be used at the stakeholder workshop for discussion. On the basis of the discussion some refinements can be made to the boundaries.

7. The final stage involves digitising the boundaries such that they could be used in a range of mapping applications.



The team should use the following classification of the rural economy in order to define the areas in a way consistent with LANDMAP across boundaries at the appropriate level of detail (level 3 recommended). In other words, when describing the LEUs, the team should use terms such as 'predominately lowland arable' to describe the organisation of economic activity and to justify LEU borders ideally as a place where both landscape and economy change. This classification is set out below.

The team should use the following classification of the rural economy in order to define the areas in a way that is consistent with LANDMAP across boundaries at the appropriate level of detail (level 3 is recommended). LEU boundaries are likely to be located where both landscape and economy change. Therefore they are likely to be based on either an agglomeration of LANDMAP visual and sensory areas or character areas. If the latter is available it is probably sensible to use this as this aggregates a range of the landscape characteristics.

The boundaries will probably follow the visual and sensory area or character area boundaries unless a particularly dominant economic factor justifies a different boundary. It is important to emphasise the role of dominance of a particular characteristic. For instance, no area is likely to be all pasture or all arable. Common sense is required to decide whether an area is predominantly one or the other, or indeed mixed. The number of LEU's does not need to be more than those required to define the intrinsic range of land economy types in a local authority area. Too many LEU's may lead to an excessive amount of work for no particular benefit. An LEU may be split into several areas, which have similar characteristics, e.g. substantial areas of upland separated by lowland. This will avoid duplication of information for each of the similar areas.

The classification is set out below. To follow a logical process it is advised that the local authority area is divided into Level 1 areas first, then Level 2 and then Level 3. Once the boundaries have been defined in line with the classification and agreed, the characteristics of the area can be identified in terms of the rural economy and the landscape [derived from LANDMAP information]. These are discussed in the following steps.

Land Economy Units Draft Classification

LEVEL 1	LEVEL 2	LEVEL 3 Dominant land use/economic factor
Rural **Area outside towns.**	**Upland** Area with upland farming characteristics generally above 150m AOD	**Upland pastoral / grazing**
		Upland forestry
		Upland mosaic of pasture / forestry
		Upland mountain / moorland
	Lowland Area with lowland farming characteristics generally below 150m AOD	**Lowland arable**
		Lowland pastoral
		Lowland forestry
		Lowland mosaic of pasture / arable / forestry
		Coastal Area whose economy is derived primarily from the coast or sea in terms of tourism or marine activities
Urban **Town or larger.**	**Settlement**	**Urban area** Urban area based on industrial economy
		Rural Town Town such as a market town whose economy has been based on the surrounding rural area

		Major transport corridor Area surrounding major transport corridor which influences its economy
		Coastal Town A significant town that lies on the coast and relies substantially on tourism, services and/or fishing [and is not a major urban area].

Figure 2: Map of Land Economy Units (LEUs) in Monmouthshire

Step 3 – Selection of LANDMAP Data

What needs to be done?

- Define key characteristics and elements to be conserved in the LEU's
- Summarise information in the LEU data collection form (See appendices)
- For each LEU define the landscape characteristics and elements under threat or requiring specific intervention

Who needs to be involved?

A Chartered Landscape Architect with a sound understanding of LANDMAP

How is it done?

- Define key characteristics and elements to be conserved in the LEU's through analysis of key LANDMAP aspect data for each area. As already discussed, most areas will only have evaluated aspect assessments although some will have landscape character areas bringing all the significant features of the landscape together. Every LEU is likely to contain several aspect areas, some of which may be quite different in character e.g. upland moorland flanking an upland valley. The separate characteristics should be noted relating to their respective areas.
- Each aspect should be queried in LANDMAP Collector or on the website as the information becomes available to determine the following which should be summarised in the LEU data collection form:
  Visual and Sensory: land cover pattern, boundary type, aesthetic qualities, sense of place, value, overall evaluation justification, key qualities that should be conserved or enhanced, key elements that should be conserved or enhanced, management guidelines, and where appropriate, tolerance to change.
  Landscape Habitats [previously Biodiversity]: habitats of international importance, BAP habitats, important species, features that significantly influence biodiversity, threats, value and overall evaluation, management guidelines.
  Historic Landscape [previously History and Archaeology]: dominant historic pattern, landscape details, building types, walling materials, boundary types, archaeological interest, historic designations e.g. SAM's, value and justification, management guidelines.
  Cultural Landscape [previously Cultural Associations]: tolerance to change.

Geological Landscape [previously Earth Sciences]: Geological SSSI, SINC, RIGS tolerance to change.

It should be noted that not all elements listed in the aspect data describing an area are worthy of conservation. It is important to define the key characteristics which are essential to maintain a positive character of the area. Characteristics or elements within those aspects that are of outstanding or high value should be given more weight than those of a perceived lesser value. The perceived condition and trend of the landscape should also inform the judgement on the vulnerability of the landscape to further change.
Form L1 (shown in Appendix 1) will help in determining the characteristics in a methodical way prior to filling in the LEU data collection form L2.

- Input data in LEU data forms L1 and L2 (see Appendix 1).
- List key landscape elements in preparation for workshop, which will test whether these will be positively or adversely affected by change.

There will be an element of judgement as to which elements and characteristics are regarded as the most important to conserve.

Landscape elements to be considered

Field boundaries (walls, hedges, hedgebanks, clawdd, fences, banks, ditches)
Tree cover
Field pattern
Field size
Crop cover/appearance
Crop type
Woodland cover
Woodland type
Settlement pattern
Farm buildings (farmhouses, barns, other buildings)

Water bodies including rivers, lakes, ponds, reens, ditches

Landscape Qualities to be considered		
Scale	Coherence	Tranquillity
Enclosure	Pattern	Integrity
Openness	Proportion	Unspoilt character
Balance	Wildness	Fine views
Unity	Remoteness	Diversity

Baseline Landscape Characteristics
The baseline landscape characteristics (see form L1 in Appendix 1) consist of the key elements/qualities to be conserved, their value and tolerance to change, and elements to be changed.
These are derived from LANDMAP data in STEP 3.

Output

- Definition of key landscape characteristics and elements in the LEU data forms L1 and L2.
- Summary of key elements to be conserved or enhanced for presentation.

The key landscape elements defined will be used during the workshop (Step 4) to assess the potential impact of changes in the landscape driven through changes in the rural economy.
The summary of key elements is prepared for use in the policy makers presentation (Step 6), and also provides a quick reference for decision makers in the area of planning and other future users of the tool-kit.

Step 4 – Collection of Workshop data

What needs to be done?

- Run a series of workshops (typically 2 workshops, 2 weeks apart)
- Collect, compile and summarise **Workshop Data**

Who needs to be involved?

Stakeholders from the most significant economic sectors of the area (see stakeholders below), people with expert sectoral knowledge (see experts below), and the team.
Significant rural economic sectors are typically agriculture, forestry, and tourism.

How is it done?

County Level Workshop
The aim of this is to produce the interpretive information (Workshop Data). This should consist of approximately 30-40 people drawn from the main economic sectors relevant to the county.

The participants in the workshop represent two distinctive groups.

1. **Stakeholders**: This group consists of stakeholders from the main rural economy sectors of the region of interest (usually County). If these sectors are, for example, agriculture, tourism and forestry, then the list of stakeholders would include farmers, farmers' market organisers, large estate managers, tourism accommodation providers, tourism activity providers, forestry services providers and private woodland owners.
2. **Experts**: People from a variety of organisations with expert knowledge in those sectors of interest, for example experts in agriculture, tourism and forestry. The experts should have, as much as possible, first hand experience of the 'local' area.

The mix of stakeholders should reflect the relative importance of the sector for the study area. It should be noted however that there is significant crossover amongst stakeholder groups, with for example farmers also being involved in forestry and in tourism services provision. Stakeholders should be drawn from the following list:

Farmers: Ideally a mix of farmers representing the main agricultural activities in the area, such as (upland and lowland) farmers involved in horticulture, dairy, sheep, beef, poultry etc. Care should be taken to include as many young farmers as possible.
Farmers markets organisers
Large estate managers
Tourism accommodation providers. The target here is to include a wide range of providers, such as accommodation, activities including riding, canoeing and other water sports, animal parks, trekking services.
Forestry services providers. Woods maintenance, felling, milling, local cottage industry using forestry products as the main resource.
Private woodland owners: This wood include farmers, but also non-farming woodland owners.
Representatives from secondary production and value adding sectors.

Experts could include the following:

Head of economic development
Head of development planning
Landscape officer
Tourism officer
Countryside manager
County Farms manager
Food officer
Coed Cymru officer
Wildlife expert
Forestry Commission representative
Forest District area manager
Biodiversity/woodland officer
Rural development scheme representatives
National Farmers Union (NFU)
Farmers Union Wales (FUW) representative
County Landowners Association representative
Countryside Council Wales (CCW) representative
Welsh Development Agency (WDA) Environment representative
Welsh Development Agency (WDA) Food Directorate project manager
National Assembly for Wales Agriculture Division

The workshop needs to be run over two days in order to gather the necessary data. Preferably these should be two weeks apart. This will avoid 'workshop burnout' whilst also allowing the participants to digest and reflect upon the findings of day 1. It will also allow the team to summarise and distribute the findings to the participants between workshops. Due to the scheduling difficulties posed by the two-day workshop, participants should be invited at least 6 weeks prior to the event.

The mix of the two groups (stakeholders and experts) should be approximately fifty-fifty. Ideally, this balance should be present in each sector, for example, there should be as many tourism experts as there are service providers. The participants should represent local knowledge from all LEUs under examination.

The workshop should to be run at five-year intervals, in order to update the information base, and managed by either independent consultants or a Local Authority team experienced in this type of work. This team should also include a LANDMAP expert.

The flow of specific tasks to be carried out during the workshop is presented in the diagram below. The workshop agenda provides information on how to organise the succession of the various elements of the discussion for days 1 and 2.

Workshop Tasks
Day 1

Divide group into a mix of stakeholders and experts by economic sector

At economic sector level (e.g. tourism, agriculture, forestry) complete the following tasks:
- Task 1: identification of driving forces at work in each sector
- Task 2: assessment of significance of policy mechanisms
- Task 3: identification of likely changes in management activities by stakeholders
- Task 4: stakeholder perception of constraints and opportunities for sector

Task 5: Team summarises day 1 and informs participants

Tasks 1 and 2 use forms W1A1, W1A2, W1F1, W1F2, W1T1, W1T2 (Appendix).
Task3 use forms: W1A3, W1F2.
Task 4 use forms: W1Op1 and W1Op2

Day 2 (2 weeks later)

Divide participants into LEU groups

At individual LEU level complete the following tasks:
- Task 6: Identification of potential changes in elements of the rural economy (e.g. income, employment)
- Task 7: Identification of potential impacts on elements of the landscape [structured to include -but not exclusively- list of key elements previously identified in LANDMAP analysis e.g. hedgerows, ditches etc]
- Task 8: Identification of constraints and opportunities for each LEU

Task 6 use form W2E
Task 7 use form W2L

WORKSHOP AGENDA

WORKSHOP TO EXPLORE POTENTIAL CHANGE IN LANDSCAPE AND ECONOMY IN 'COUNTY'

Led by: 'The Team'
For: 'County' Council and the Welsh Development Agency
At: 'location'
On: 'date'

Workshop Agenda: Day 1

9.30 –10.00
INTRODUCTION
Welcome and coffee
Brief overview of the project and the tool-kit
Explanation of the aims of the workshop

10.30–11.30
PART I
ASSESSMENT OF SIGNIFICANT DRIVING FORCES AND POLICY MECHANISMS (Forms: W1A1, W1A2, W1F1, W1T1, W1T2)
Divide into economic sector groups (agriculture, forestry, tourism).
Discussion of the major economic and policy driving forces in 'County'
Discussion on the impact of driving forces on different sectors

11.30–11.45 Coffee

11.45– 12.35
Continuation of driving forces discussion

12.35–1.00 Conclusions from the morning discussions

1.00–1.30 Lunch

1.30–3.00
PART II
EFFECT OF DRIVING FORCES AND POLICY MECHANISMS ON RURAL BUSINESS MANAGEMENT
(Forms W1A3, W1F2, W1Op1, W1Op2)
Divide into groups to discuss constraints and opportunities for different sectors and effects of driving forces on management practices

3.00–4.00

PART III
Regroup and collate responses
Concluding comments, questions from participants and next steps

Workshop Agenda: Day 2

9.30 – 9.45
INTRODUCTION
Welcome and coffee
Explanation of the aims of the workshop

9.45 – 11.15
Divide into groups and assign Land Economy Units to each group for analysis.
PART I
EFFECTS OF FARMING, FORESTRY AND TOURISM MANAGEMENT ON ELEMENTS OF THE LANDSCAPE
(use form W2L)
Discussion using elements of landscape table
11.15 – 11.30 - Coffee

11.30 – 12.15
Continuation of the discussion using elements of landscape table

12.15-13.00
PART II
EFFECTS OF FARMING, FORESTRY AND TOURISM MANAGEMENT ON ELEMENTS OF THE RURAL ECONOMY
(use form W2E)
Discussion using elements of the rural economy table, including discussion of key opportunities and barriers

13.00 – 13.30 Lunch

13.30 – 15.00
Continuation of the discussion using elements of the rural economy table

15.00 – 16.00
PART III
DISCUSSION
(i) Examination of the land economy unit (LEU) boundaries
(ii) Summary discussion of key opportunities and barriers

Output

- Driving forces and policy mechanisms with a significant impact on the rural economy of the area.
- LEU specific potential impacts on the rural economy and on the landscape.
- Potential opportunities for LEUs, which would develop the economy and conserve or enhance desirable landscape characteristics.
- Identification of existing barriers to the development of these opportunities.

Depending on the resources (time) available, and the number of LEUs, it might not be possible to collect information from the workshops for all LEUs. In this case, the same forms used in the workshop (see appendix) could be distributed to the workshop participants to be completed and posted back to the team. The commitment of the participants to complete the task within a certain time period (say 10 days) must be secured at the end of the workshop.

Step 5 Inclusion of workshop data into the tool-kit

What needs to be done?

- Workshop data should be summarised for each sector and LEU

Who needs to be involved?

- The local authority or consultant team, (the 'team').

How is it done?

The information derived from the workshop process must be fed into the tool-kit by the local authority or consultant team. This involves:

- calculating the strength of impacts on elements of the rural economy and on elements of the landscape
- summarising the participants comments from the forms and from the discussion
- outlining the opportunities and associated barriers

Outcomes

The County will have associated with it a table of data, which identifies for each economic sector an assessment of:

- The driving forces at work
- Potential change of land management practices
- Perceived constraints
- Perceived opportunities

And for each LEU:

- Potential changes in landscape elements
- Potential changes in rural economic elements
- Key opportunities

The production of a set of opportunities is an important outcome of the tool-kit. The application of the tool-kit to a variety of Welsh counties presents in itself an opportunity for sharing lessons in rural development amongst the participating local authorities. Therefore the creation of a central, computerised, and web accessible database, where the opportunities identified in various local authority applications can be compiled, is an opportunity not to be missed.

Step 6 Presentation of final results to policy makers

What needs to be done?

- Analyse and evaluate data from the three sources (Background, LANDMAP, and Workshop)
- Prepare a presentation for policy makers using all data collected.
- Prepare a report that summarises key findings.
- Assist policy makers/decision makers in their thinking through combining and interpreting objective (background) and subjective (workshop) data based on a rational process.

Who needs to be involved?

- The team.
- Relevant policy makers/decision makers from the local authority.

How is it done?

1. Take the information from the 2-day workshop (**Steps 4 and 5**) and integrate this with the background data (produced in **Steps 1and 3**).
2. In each LEU interpret the available data in terms of the socio-economic and landscape context of the area. Specifically show:
    a. Key changes in agriculture, tourism and forestry anticipated
    b. How these changes will affect the landscape, particularly impacts on valued or threatened landscapes (landscape elements affected and how landscape character areas might be changed)

c. How these changes will affect the rural economy (elements of the rural economy and overall impact by LEU)

d. Opportunities available for new developments which enhance rural economy and valued elements of the landscape

e. Constraints imposed by existing conditions

A series of maps showing the LEUs (produced in **Step 2**), and large (A1) printouts of the tabulated results from the workshops combined with a selection of background data could be used as visual aids to the presentation.

3. Manage a discussion session on the results. Summarise the key points/decisions arising from the discussion such that all participants are clear about the outcomes.

4. It is also important at this point to make arrangements for an annual review of trends identified and for entering all data into an interactive database linked to LANDMAP.

Appendix 1: Background Data Forms

The following forms are used to collect the background information:

Summary of information and key rural economy issues for the area (Step 1) **B1**
Baseline Landscape characteristics – from LANDMAP data (Step 3) **L1**
Summary of key elements and qualities to be conserved or enhanced (Step 3) **L2**

LEU Data Form

Land Economy Unit (LEU) Data Collection Form B1

LEU name

Date/author

Classification
Level 1:
Level 2:
Level 3:

Current situation
Summary description

Agri- Environment/Land Use:

Tourism:

Accessibility:

Level of Development:

Key rural economy issues for area:

These are essentially a summary of the process the team has undergone in STEP2.

FORM L1 Baseline Landscape Characteristics

Key elements/qualities to be conserved, their value and tolerance to change. Elements to be changed.
These are derived from LANDMAP data in STEP 3.

Area Eg Upland moorland, valleys, levels	***Aspect***	***Tolerance to change***	***Elements/qualities to be conserved/enhanced***	***Elements to be changed***
	Visual and Sensory			
	Landscape Habitats			
	Historic Landscape			
	Cultural Landscape			
	Geological Landscape			
	Visual and Sensory			
	Landscape Habitats			
	Historic Landscape			
	Cultural Landscape			
	Geological Landscape			
	Visual and Sensory			
	Landscape Habitats			
	Historic Landscape			
	Cultural Landscape			
	Geological Landscape			

FORM L2 Summary of key elements and/or qualities to be conserved or enhanced

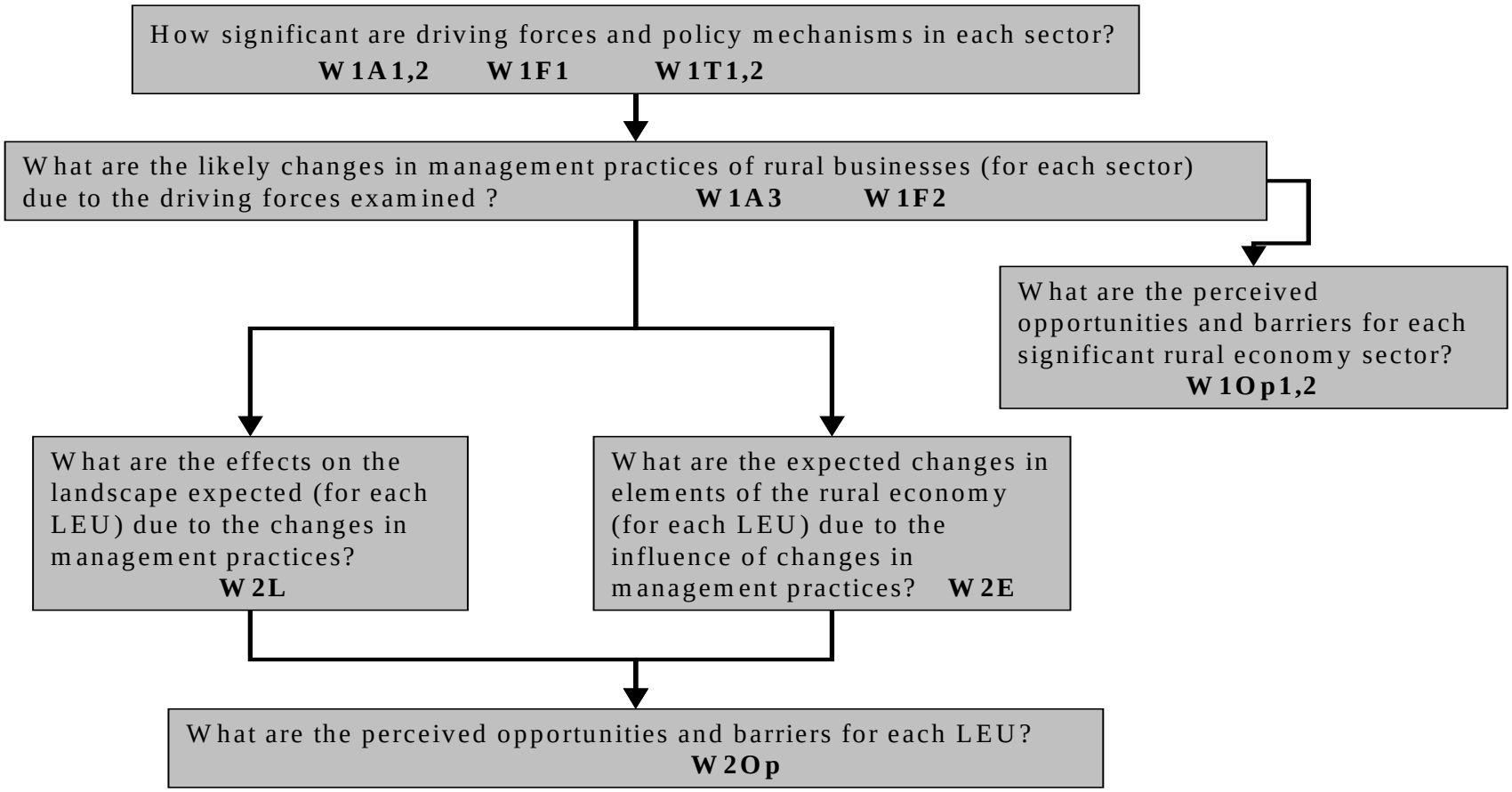
LEU number/name

Summary of key elements and/or qualities to be conserved or enhanced

Aspect	**Elements/qualities to be conserved/ enhanced**
Visual and Sensory	
Landscape Habitats	
Historic Landscape	
Cultural Landscape	
Geological Landscape	

Appendix 2: Workshop Forms

The following forms are used to collect information on the stakeholders and experts perception by means of a workshop



FORM W1A1: Rating the significance of Driving Forces and their Mechanisms - Agriculture

Sector: Agriculture **Study area:**
Occupation:……..
Farm type (Arable, dairy, livestock, mixed etc.):…….
Farm size (acres, number of animals):……

Driving Force A: Changes in CAP		
Mechanisms	Importance Rating None/Low/High	Comments
Arable Area Payments Scheme		
Hill Farming Allowance Scheme		
Sheep Annual Premium Scheme		
Suckler Cow Premium Scheme		
Beef Special Premium Scheme		
De-coupled Payments (proposed)		

Driving Force B: Rural Development and demand for local food product		
Mechanisms	Importance Rating None/Low/High	Comments
Livestock markets		
Purchasing policies of supermarkets		
Producers Markets		
Small Food Processors Grant		
Farm Enterprise Grant		
Practical skills training		
Rural Development Grant		

FORM W1A2: Rating the significance of Driving Forces and their Mechanisms - Agriculture

Sector: Agriculture **Study area:**

Driving Force C: Increasing demand for improved natural environment		
Mechanisms - Agri-environment Schemes	Importance Rating None/Low/High	Comments
Tir Gofal		
Habitat Scheme		
Farm and Rural Conservation Grant Scheme		
Other Capital Grant Schemes		
New entry level and higher tier agri-environment scheme		

Farm Improvement Grant		
Farm Woodland Premium Scheme		
Agri-environmental management training		
Increasing house prices and influence of incomers		

Driving Force D: Increasing demand for organic food		
Mechanisms	Importance Rating None/Low/High	Comments
Organic Farming Scheme		
Organic Conversion Information Service (OCIS)		
Farming Connect		

FORM W1A3 : Effects of Driving Forces – Farm Management

Sector: Agriculture **Study Area:**

Management element affected	Size of effect (None/Low/High)	Comments (please also indicate size of effects on your activities, e.g. low, medium, high)
Livestock management (breeding, selling & buying, replacement, feeding, housing, numbers)		
Mix of on-farm activities		
Labour management		
Investment		
Grazing/ livestock densities		
Ploughing		
Machinery size		
Fertilising		
Crop rotational practice		
Cutting/mowing /Burning		
Drainage		

FORM W1F1: Rating the significance of Driving Forces and their Mechanisms - Forestry

Sector: Forestry **Study area:**

Occupation:……

Type of holding:…… Acreage:……

Driving Force: Farm Diversification - Forestry Development		
Mechanisms	**Importance Rating None / Low / High**	**Comments**
Farm Woodland Premium Scheme		
Natural regeneration grants		
Planting grants		
National Forest Tender Scheme		
Woodland Improvement Grant (WIGs): Public recreation, under-managed woods, woodland biodiversity		
Annual Management Grant (AMG)		
Restocking grants		
Natural regeneration grants		
De-coupled payment scheme effects		
Woods for game management – pheasant shooting vs timber		

FORM W1F2: Impact of Driving Forces on Management Practices - Forestry

Sector: Forestry **Study area:**

Occupation:…… Type of holding:…… Acreage:……

Element of landscape / land quality	Size of effect (None/Low/High)	Comments (also indicate size of effect and direction of change)
Field boundaries		
Field size/margins		
Crop cover/appearance/type		
Woodland type/size /use		
Farm buildings: new/use		
Soil quality/ erosion		
Water quality		
Access		
Biodiversity		
Rivers/lakes/ponds		
Flood control/catchment management		

FORM W 1T1: Rating the significance of Driving Forces - Tourism

Sector: Tourism Study area:
Occupation:……..
Business type (e.g. hotel, activity centre, etc.): ……..

Evaluation of Driving Forces		
Driving Forces	**Importance Rating None / Low / High**	**Comments**
The changing nature of leisure time (e.g. decline in the 2-week holiday, increase in short mini-breaks)		
An aging population with more money and leisure time		
An increase in single parent families		
An increase in the demand for green tourism		
An increase in the demand for activity holidays (e.g. outdoor recreation)		
The development of local attractors (e.g. world heritage site, National Trust sites)		
Marketing of Wales as a tourist destination		
Competition from European destinations due to development of cut-price airlines		
Reform of the Common Agricultural Policy (CAP)		

FORM W1T2: Evaluation of Mechanisms - Tourism

Sector: Tourism **Study area:**

Mechanisms	Importance Rating None / Low / High	Comments
Welsh Tourism Board Marketing Strategy		
County Tourism Strategy		
Designations of places/areas (e.g. National Parks, Area of Outstanding Natural Beauty, World Heritage Site)		
National Park Management Plan		
AONB Management Plan		
Planning Regulations		
ADVENTA		

FORM W1-Op1 : Constraints and opportunities

Please indicate your type of business: ……

1. How do you anticipate the development of your business over the next 3 years?
(For example: Increase/decreased output, greater/less stability, diversify into new areas, expect to retire).

Anticipated development/change	***Comments***

2. What opportunities do you see that might help you in developing your current business, or diversifying into new areas, or even in developing new businesses?
(For example: specific grant programmes such as Tyr Gofal, new ways of marketing products, new consumers coming into the area).

Opportunities	
Investment	
Management	
Training	
New activities	

FORM W1-Op2: Constraints and opportunities

3. What constraints and/or barriers stop you from developing your business the way you would like to?

(For Example: grants not accessible, grant applications too complex, lack of knowledge about potential markets, uncertain demand).

Constraints/Barriers	***Comments***

FORM W2L: Impacts of Changes on Elements of the Landscape

LEU: **(Numbers relate to magnitude of effect: 0=No effect 4=High effect)**

Element of landscape / land quality affected	Expected changes in management due to influence of Driving Forces and Mechanisms examined in Workshop I	Cumulative effect on element of landscape (0-4)	Comments
Field boundaries (walls, hedges, fences, banks, ditches) Field pattern	Operational management		
Crop cover /appearance/ Crop type			
Woodland type/size/location	Mix of business activities		
Farm buildings			
Access	Labour management		
Soil quality Erosion			
Water catchment management: Water quality lakes/ponds Rivers/ Flood control	Investment		
Biodiversity			

FORM W2E : Impacts of Changes on Elements of Rural Economic Activity

LEU: Numbers relate to magnitude of effect: 0=No effect 4=High effect (+ = positive change - = negative change)

LEU Rural Economy Elements	Expected changes in management due to influence of Driving Forces and Mechanisms examined in Workshop I	Cumulative effect on element of landscape (0-4)	Comments
Local area purchasing patterns	Operational management		
Employment level			
Labour skills base	Mix of business activities		
informal shared arrangements/ co-operatives			
Increased processing	Labour management		
Local sales of products and services			
Income from grants/non grant	Investment		
Diversification			

FORM W2-Op: Constraints and opportunities

LEU:

What opportunities (and barriers to these opportunities) can you identify for this LEU?

Opportunities	*Perceived barriers and the potential for action*

Final Output / Recommendations:

Expected changes in the rural economy for each LEU [STEP 4]

Expected impacts on the landscape for each LEU [STEP 4]

Opportunities

Investment related opportunities [STEP 4]

Management related opportunities [STEP 4]

Training related opportunities [STEP 4]

New activities related opportunities [STEP 4]