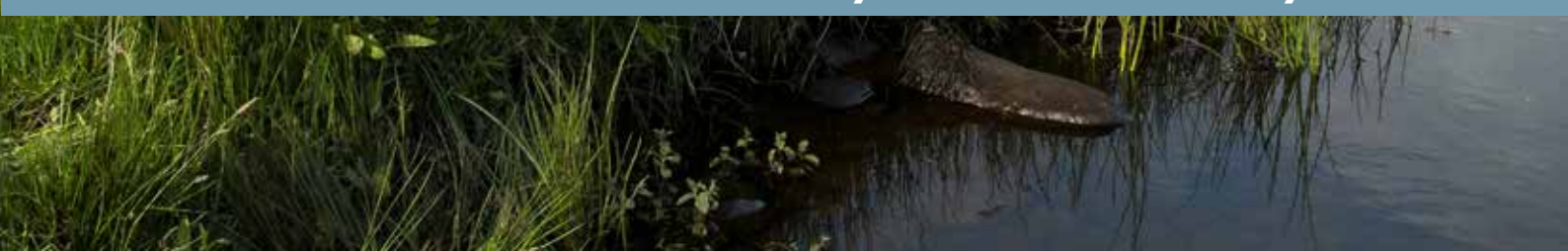
KerryLIFE

SOCIO-ECONOMIC EVALUATION

Breandán Ó Caoimh, Karen Keaveney and Caroline Crowley, 2020



LIFE13/NAT/IE/000144

KerryLIFE

The KerryLIFE project *'Sustainable land use management for the conservation of freshwater pearl mussels'* worked with farmers and forest-owners in two river catchments to develop and demonstrate sustainable land use practices to conserve the freshwater pearl mussel and to benefit the unique natural environment of the Iveragh Peninsula.

It operated from 2014–2020 and was funded through the EU LIFE Nature Fund (50% LIFE funding; 50% Irish project partners). The project demonstrated measures to address sources of excess silt and nutrients and with hydro-morphological changes associated with farming and forestry which are contributing to the deterioration of the freshwater pearl mussel's habitat. The project coupled local farming knowledge and experience with the scientific expertise of project partners to improve the conservation status of the Natura sites.

LIFE+ Nature and Biodiversity

LIFE+ Nature and Biodiversity is one of the main strands of the European Union's funding programme for the environment. It supports projects that contribute to the implementation of the EU's Birds and Habitats Directives, the Natura 2000 network and that contribute to the EU's goal of halting the loss of biodiversity.

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

Forest Service

COILLTE

teagasc
Agriculture and Food Development Authority

pobal
government supporting communities

"As both the custodians and co-creators of Iveragh's landscapes, biodiversity and community life, farm families will necessarily play a pivotal role in the future evolution of the peninsula, as it moves from the somewhat derogatory term 'less favoured areas' to a 'high nature value' landscape."

Dr Eileen O'Rourke, Department of Geography, UCC, 2010

ABOUT THE AUTHORS

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CONTENTS

LIST OF ACRONYMS

AEOS	Agri-Environment Options Scheme
AES	Agri-Environmental Scheme
CAP	Common Agricultural Policy
CORINE	CoORdinated INformation on the Environment
COPA/COGECA	Comité des organisations professionnelles agricoles-Comité général de la coopération agricole de l'Union européenne / Committee of Professional Agricultural Organisations-General Confederation of Agricultural Cooperatives
CSA	Critical Source Area
CSO	Central Statistics Office
DAHG	Department of Arts, Heritage and the Gaeltacht
DAFM	Department of Agriculture, Food and the Marine
DCHG	Department of Culture, Heritage and the Gaeltacht
EDs	Electoral Divisions
ECJ	European Court of Justice
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
EIP	European Innovation Partnership
FWPM	Fresh Water Pearl Mussel
GAA	Gaelic Athletic Association
GLAS	Green, Low-Carbon Agri-Environmental Scheme
GS	Governance Systems
HNV	High Nature Value
HNVf	High Nature Value farming
ICT	Information and Communications Technology
IPB	Irish Public Bodies (Mutual Insurance)
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
LEADER	Liaisons entre actions de développement de l'économie rurale – Links between actions for the development of the rural economy
LFA	Less Favoured Area
NGOs	Non-Governmental Organisations
NHA	Natural Heritage Area
NPWS	National Parks and Wildlife Service
NS	National School
OECD	Organisation for Economic Cooperation and Development
PMP	Pearl Mussel Project
PMG	Project Management Group
PSG	Project Stakeholder Group
PCS	Professional and Community Stakeholder
RBAPS	Result-Based Agri-Environment Payment Schemes
RDP	Rural Development Programme
REPS	Rural Environment Protection Scheme
SAC	Special Area of Conservation
SAs	Small Areas
SDGs	Sustainable Development Goals
SKDP	South Kerry Development Partnership
SES	Social-Ecological Systems
SPA	Special Protection Area
UN	United Nations
UNSDGs	United Nations Sustainable Development Goals

1: INTRODUCTION

"There is no such thing as a typical rural area, economy or society" (Copus and de Lima, 2013: 3). Each place has its own unique history, geography and culture, and such distinctiveness is part of its potential. It follows that, in order to understand a place, its people and potential (including the impacts of a project carried out in it), we need to assess it across a range of dimensions – we need to 'get a feel for it'.

Rural areas continue to be imagined as iconic places where farms produce food and where traditional culture can still be found, as weekend playgrounds for humans and nature refuges for wildlife (Copus and de Lima, 2013). But they are also seen as disadvantaged regions where the elderly residents remain behind as their young relatives leave for opportunities that only seem to be available elsewhere in 'non-rural' places (ibid.), many of them never to return. These stereotypes of rural areas persist, and aspects of them are found to varying degrees in literature and popular discourses. However, it is also true that improved accessibility and connectivity are building links from these rural places to others, both rural and non-rural, nationally and internationally. Such 'relational proximity' (ibid.) opens up increased prospects for innovation and new development trajectories. The pandemic of 2020 has accelerated the recalibration of once-limited expectations of rural areas into their serious consideration as options for living and remote/connected working in the 21st century. At the same time, however, some rural areas can come under urban-induced pressures – to satisfy demands for housing and recreational activities.

Rural areas provide the main stage for some of the biggest challenges facing humans and the rest of biodiversity. The new millennium is an era of accelerating species extinctions and five drivers have the most significant impact on the loss of biodiversity globally: (1) changes in land and sea use, (2) direct exploitation of organisms, (3) climate change, (4) pollution and (5) invasive alien species (IPBES, 2019).

The KerryLIFE project emerged out of this dynamic context, from the combination of the need to conserve a little-known threatened species in Ireland – the freshwater pearl mussel – with an EU funding instrument for environment and climate action that would support land managers to adapt their land use practices for its benefit. And so, this opportunity was pursued through a place-based project in one of the mussel's remaining strongholds, the Iveragh peninsula in the south-west of Ireland, by means of a LIFE project.

This review report opens (in Chapter 2) with an overview of KerryLIFE's main activities and outputs. This, largely descriptive, text draws principally on secondary sources, including reports produced by the KerryLIFE project team. The review / evaluation is underpinned by a conceptual framework that is informed by the literature on contemporary policies in agriculture and rural development. This framework situates KerryLIFE within a wider framework of policy and practice interventions that impact on farm livelihoods, ecology and rural communities. KerryLIFE emerges as part of a concerted, yet marginal (in a policy and financial sense) set of interventions that fuse ecological principles with sustainable livelihoods. Such an approach seeks to support farmers, and reward them, for protecting high-nature value farmland (HNVf), and it distinguishes itself from the predominant productivist approach that has characterised agricultural policy in the EU (and Ireland) over the past half-century. In analysing this emergent approach, this review / evaluation presents a socio-ecological systems (SES) framework that allows for stakeholder mapping and an analysis of the interfaces and interactions between them. Chapter 4 describes the methodologies that underpin this evaluation. It outlines the ways in which the main stakeholders, including farming households, community representatives, Non-Governmental Organisations (NGOs), sectoral interests and statutory sector representatives were surveyed and enabled to input into the review. The research team used a mixed-methods approach, with stakeholders responding to questionnaires and participating in interviews. The survey results are presented in Chapter 5. These are analysed, in Chapter 6, with respect to the aforementioned SES framework. Chapter 6 also puts forward recommendations on how the lessons from KerryLIFE can be applied to future agri-environmental initiatives specifically and to agriculture and rural development policies and practices more generally.

2: SETTING THE CONTEXT

2.1: Overview of KerryLIFE

KerryLIFE operated between 2014 and 2020, as an area-based, agri-environmental programme in the Blackwater and Caragh catchments in the Iveragh peninsula, County Kerry (Figure 2.1). The area is predominantly upland and sparsely populated, and farming is the dominant economic activity. The catchments represent areas of outstanding natural beauty, and contain high quality natural landscapes, including high nature value farmland (HNVf). The popular Ring of Kerry tourist route traverses the lower parts of the Blackwater and Caragh valleys, but most of the catchments are very much *off the beaten track*, and receive negligible numbers of visitors. Most of the catchments are designated special areas of conservation (SACs). Both catchments host freshwater pearl mussel (FWPM) populations. The FWPM (*Margaritifera margaritifera*) is a species that fulfils *'indicator', 'flagship', 'keystone' and 'umbrella'* criteria, making it an important driver of oligotrophic[1] stream ecosystem conservation (O'Callaghan *et al.*, 2020).

***Figure 2.1**: The FWPM (Margaritifera margaritifera).*

Once abundant in Irish rivers and lakes, the FWPM is now an endangered species, and the Caragh and Blackwater rivers are among a small number of locations in Ireland that now have any remaining significant populations. National Parks and Wildlife Service (NPWS) monitoring indicates that no Irish freshwater pearl mussel population is viable. Therefore, and given its ecological importance, the FWPM is protected under Irish and European legislation[2], and FWPM-harvesting is illegal. The main conservation risks to the mussel are "*diffuse sediment and nutrient losses and hydro-morphological change associated with agriculture and forestry*" (KerryLIFE, 2018: 3). In response, KerryLIFE has sought to promote sustainable land use management for FWPM conservation. Through farm and forestry plans, the project aimed to reduce losses of sediment and the leaching of nutrients into FWPM watercourses. Farmers were supported and incentivised to take the required measures – on the basis of scientific advice.

KerryLIFE also represents a response to legal imperatives. Following a European Court of Justice (ECJ) (Case C-282/02) ruling under the Dangerous Substance Directive, Ireland devised a conservation strategy for the FWPM. Led by the NPWS, this strategy noted the merits of involving key stakeholders, including agriculture, forestry and community representatives (O'Callaghan *et al.*, 2020). Meanwhile, local farmers in Iveragh, in collaboration with the South Kerry Development Partnership (SKDP), were already embracing and advocating more ecological approaches to farming, and in 2012, SKDP took a group of farmers to visit the BurrenLIFE project. Thus, when the NPWS contacted SKDP to invite them to be involved in preparing for a potential KerryLIFE project, the Partnership responded enthusiastically. SKDP advocated, from the outset, for strong farmer participation and bottom-up inputs into all aspects of the project. Drawing on NPWS monitoring data and other scientific analysis, a project area was delineated in the Caragh and Blackwater catchments, as illustrated in the map (Figure 2.2).

The two catchments form a geographically contiguous area, but are physically separated by the uplands of Mullach an Aitinn and Cnoc an Mheannáin. The high and narrow gap – Bealach Béime – provides the only road connection between them.

[1] This implies having a deficiency of plant nutrients that is usually accompanied by an abundance of dissolved oxygen.
[2] The FWPM is protected under the Wildlife Act (1976-2000) and European Habitats Directive (92/43/EEC).

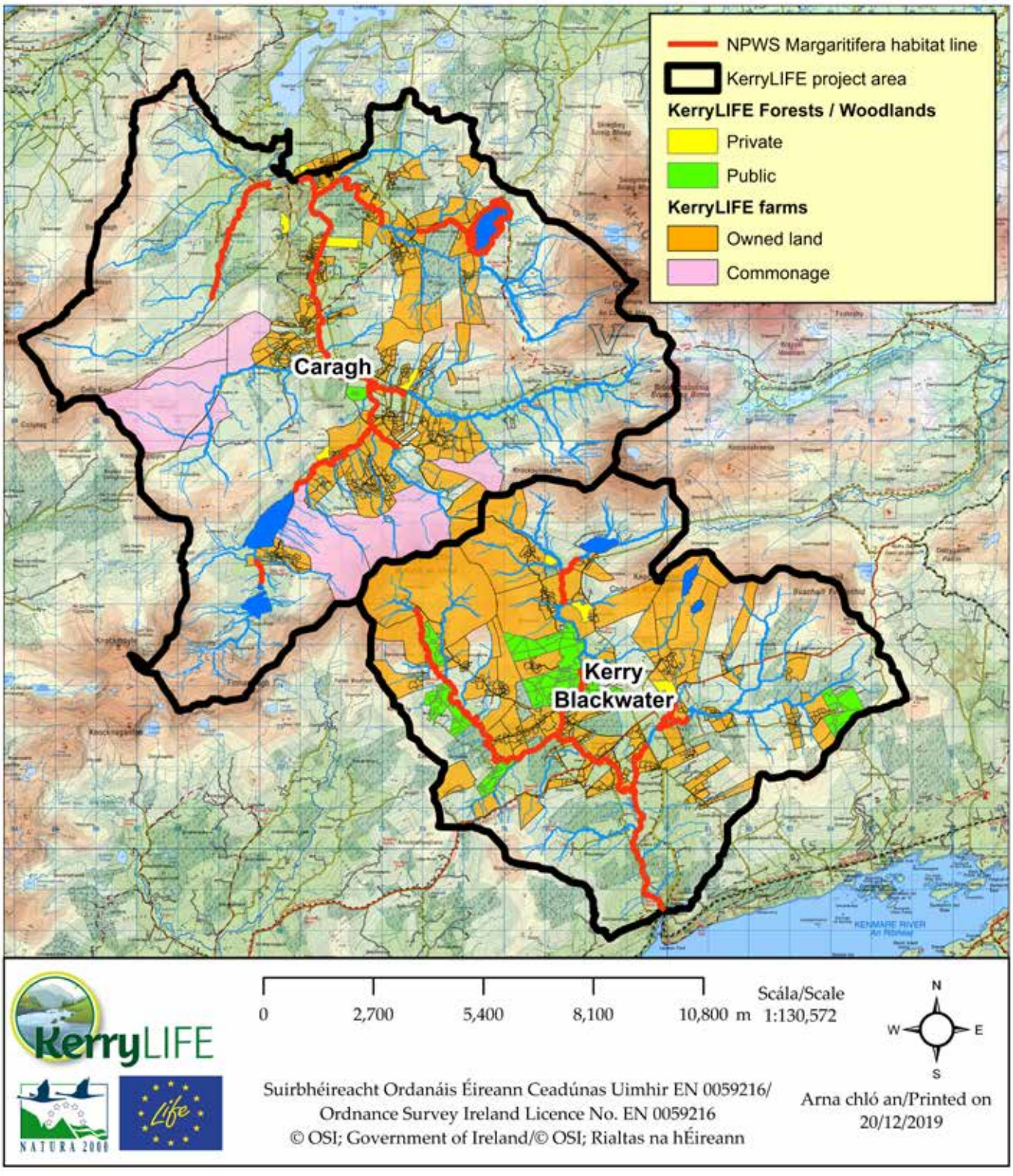


***Figure 2.2**: Map of the catchment area.*

***Figure 2.3**: Bealach Béime – the Caragh catchment is to the north, and the Blackwater catchment is to the south.*

The project set out to:

- Highlight the natural capital of the area (e.g. landscape and natural heritage as important economic resources);
- Promote the positive role of farming in FWPM and habitat conservation to the wider community (e.g. farmers as partners with conservation scientists); and
- Promote the value of public goods provision to farmers (i.e. services may be more valuable than livestock production).

A multi-stakeholder partnership oversaw and managed the KerryLIFE project. This operated over a five-year period (2015 – 2020). Appendix 8.1 shows the KerryLIFE project management structure.

The account by O'Callaghan *et al.* (2020) provides a useful overview of the KerryLIFE approach and actions. It also refers to land use impacts on the FWPM population, the measures taken by farmers, the payments' system and the project's achievements. This review report seeks to add value to their analysis; it focuses on the socio-economic aspects and impacts of KerryLIFE.

2.2: Aim, Objectives and Terms of reference

KerryLIFE commissioned this independent review to examine the impacts of the KerryLIFE project on the Caragh and Blackwater catchments. KerryLIFE specified the need to assess the benefits of the project to the local community and to *'document the socio-economic profile of the local community through attitudinal surveys (towards, inter alia, nature conservation, awareness and acceptance of the benefits of the Natura 2000 network and the KerryLIFE project) to facilitate an assessment of the socio-economic impacts at catchment level.'*

Thus, this review sought to assess the following:

- Farmers' attitudes towards the project actions and towards nature conservation and the Natura 2000 network in general;
- Stakeholders' perceptions of the overall impact of the LIFE project. These include the non-farming residents of the freshwater pearl mussel catchments, including local community representatives and businesses, as well as visitors to the area, and other bodies involved in the project; and
- The importance of agriculture and forestry in the two freshwater pearl mussel catchments in maintaining the landscape and the importance of the landscape in supporting the tourist industry.

In commissioning the review, KerryLIFE noted its significance in determining the degree to which the actions it piloted and supported may /will be undertaken by other farmers and forest owners in the region and elsewhere in Ireland. The socio-economic review represents a significant contribution to the value-for-money assessment of KerryLIFE.

Following KerryLIFE's open call for proposals, a three-person team, of Drs Caroline Crowley, Karen Keaveney and Breandán Ó Caoimh, was appointed to undertake the review. In line with KerryLIFE's tender document, the research team developed and applied a methodology that involved profiling the catchments (socio-economic features and variables); surveying stakeholders, including farmers, the local community and agency representatives; and assessing the agri-environmental policy and practice implications of KerryLIFE.

2.3: KerryLIFE's Operations and Outputs

KerryLIFE pursued an evidence-based approach to identifying, informing and guiding the design, implementation and review of on-farm agri-environmental practices. The programme had a strong science foundation, and this was complemented by tapping into farmers' knowledge. Farm plans reflected co-design (involving the KerryLIFE team and the farmers), and KerryLIFE funded the investments that were required to deliver environmental and economic gains.

2.3.1: Participant Farm Selection

At the outset, the project team visited all farms in the two catchments to discuss the project and gather expressions of interest. During this process, the project's farm advisor conducted a risk assessment of farming pressures on the pearl mussel in the project area. The selection of KerryLIFE farms was subsequently based on expressions of interest from the farmers combined with specific farm-selection criteria to maximise the likelihood of the project achieving its targets, such as:

- Area of land owned within 200m of priority FWPM habitat;
- Area of land owned within 200m of other FWPM habitat;
- Area of land owned within 100m of principal tributaries;
- Area of land owned within 50m of low order streams;
- Catchment-level risk assessment results; and
- Potential to implement conservation actions.

Allocation was also based on the relative size of the two catchments. Thus, the highest-ranking farmers from both catchments who expressed an interest in participating in KerryLIFE were offered a place. Of 124 farmers who originally expressed an interest in KerryLIFE, fifty were invited to participate (22 in Blackwater and 28 in Glencar/Caragh catchment) and 48 confirmed their continued interest.

2.3.2: Farm Surveys and Plans

The project team conducted farm surveys to identify sources of sediment, nutrients and hydrological change across 5,713.80 ha of the final pool of 48 farms. Farm plans were compiled after (1) documenting farm management practices; (2) mapping all habitats plus sources of sediment, nutrients and their pathways to FWPM habitat, such as drains, streams and rivers; and (3) assessing the risk of identified pressures and appropriate farm conservation measures to implement on each farm.

The farm advisor then walked each farm with the farmer to discuss the draft plan comprising the issues identified and the measures to address them. These farm walks were described as "*invaluable*" ((KerryLIFE 2018: 15)), as each farmer could then input to their own plan by offering alternative solutions to the technical issues raised based on their own knowledge of the farm. The farm plan was subsequently updated, reviewed and finalised, and accompanied by a contract. Implementation of actions, by farmers, began in Q2-2016. By the start of 2018, 38 farmers had signed contracts and were implementing 39 plans across 5,081 ha of SAC farmland in the catchments (KerryLIFE, 2018). One farmer had two plans, for land owned and for land rented annually. Another farmer and plan were added by November 2018 (KerryLIFE, 2019).

2.3.3: Payments and Financial Analysis

Payments were only made for measures that were fully delivered. This incentivised farmers to do as much as possible before their annual review. The annual review comprised the farm advisor walking each farm with its farmer and collecting the receipts and invoices for their completed work. While most farming direct payments are made from October to December, KerryLIFE payments were made during the summer, which helped with farm cash flow. The project team were surprised at how quickly farmers completed measures e.g. nearly 30 farmers had completed 80% plus of their measures by the first review (KerryLIFE, 2018). The second review found that all farmers had completed between 90% and 100% of their conservation measures (KerryLIFE, 2019).

Private forest owners who participated in KerryLIFE were eligible to receive a once-off maintenance grant four years after approval and annual premia for 7–15 years, with ongoing monitoring, by the Forest Service, of the efficacy of trials of new woodland planting.

All participating farmers received access to Teagasc's eProfit monitor (online financial analysis tool) to analyse their most recently completed production year, which prompted useful discussion among participants on the cost of ration and feed, transport and running machinery, of chemical fertiliser, over-wintering animals indoors and veterinary fees. Most materials for the farm measures were purchased within the catchments. Neighbouring farmers tended to help one another with fencing and installing water troughs, while others hired a local contractor for fencing or piping.

2.3.4: KerryLIFE Farming Actions

KerryLIFE invested in six sets of on-farm conservation measures, as follows:

Drain management: Drain management through a range of five measures including leave over-deepened drains alone and installing plastic plugs in some drains to retain nutrients and sediments – on farms and forests

A hydrological audit by the contracted hydrologist, across the 48 farms, recorded over 1,750 drains extending for 267.9 km. The audit recommended that 35 drains be blocked, 262 drains extending to 74 km of channel length be allowed to deteriorate to help restore the natural hydrology and that protective buffers of varying widths be installed at 592 farm locations (KerryLIFE, 2018). By early 2019, all the drains identified for restoration were being allowed to deteriorate, protective buffers (5m, 10m or 30m) had been installed in 567 project farm locations and 25 drains had been blocked. By May 2020 all outstanding measures were complete. Silt fences were adapted and installed to intercept sediment runoff from farm tracks.

The audit in the eight public and two private forests identified 126 km of major and minor watercourses and/or drains (KerryLIFE, 2020). Completed works included 392 silt fences, 1,630 log dams, 37 plastic piling dams, 14 birch bundle dams, 5 coir rolls, and 19 log bridges (KerryLIFE, 2020).

Stabilising riparian sediment sources through broadleaf planting
- Manage existing woodland
- Plant additional riparian buffers (to make up for shortfall with in-field buffers below)

The farm surveys also recorded 8 ha across 21 sites suitable for afforestation and 50 ha of existing woodland across 111 sites. The small size of existing woodland and of potential sites would mean high management costs per area. A public event to find other suitable and interested landowners in the area organised by the project team along with a contracted forester, Woodlands of Ireland[3] and Greenbelt[4], was attended by 30 landowners and farmers.

This identified larger and more suitable sites comprising 25 ha each of sites suitable for afforestation (e.g. an 11 ha birch-dominated woodland was approved by the Forest Service in Q4-2017) and 24.9 ha of conservation woodland (e.g. 3 ha mature Annex woodland drawn up in Q1-2018). In addition, a private conifer plantation suitable for conversion to natives was found, with 6 ha planned from Q2-2018 (KerryLIFE, 2018). On conclusion of the project, a total of 27.17 ha was established (planted), 14.91 ha of existing woodland had been conserved and a further 5.5 ha had been converted from conifers to natives.

Establishing in-field buffer strips (to intercept surface run-off & reduce erosion) *Other benefits are shelter for livestock and landscape connectivity*
- Planting of new hedgerows (6 locally sourced whitethorn, blackthorn or holly planted per metre in a double row inside stock-proof fence)
- In-field buffer strips (low uptake – farmers reluctant to sub-divide fields into smaller units as difficult to work with machinery, therefore replaced action with further new hedgerow planting – KerryLIFE, 2019)

By early 2020, farmers had planted 3,211 m of new hedgerows and 382 m of in-field buffers (KerryLIFE, 2019); some drew on their experience of this work from previous AESs (e.g. REPS, AEOS or GLAS).

Grazing and livestock management (to address damaged vegetation & bare ground)
- Stockproof fences along watercourses
- Plant native broadleaf trees along riverbank
- Protect blanket bog

The farm surveys identified 437 ha of critical source areas (CSAs) on project farms including bare soil and vegetated areas defined as having "a particular type of soil, land use and slope that make it more vulnerable to sediment losses" (2018: 22). CSAs were often poached areas close to the river system and were scored and then re-scored each year to track changes in response to conservation actions (KerryLIFE, 2020).

Some 42,115 m of fencing was completed to exclude livestock from FWPM habitats and / or to enhance livestock grazing and supplementary feeding practices by creating blocks of land (pens) for rotational feeding to optimise grazing and reduce ground disturbance

[3] Charity working with woodland owners to promote, advocate, train, network and support native woodland projects.
[4] A commercial forestry company.

(KerryLIFE, 2018; 2019). Over 1,000 head of cattle were prevented from accessing FWPM watercourses while plant nutrient inputs were also reduced through new water infrastructure, fencing and buffers. These actions eliminated livestock damage and pollution to the endangered species and its habitat, and reduced sediment losses through the recovery of ground vegetation.

Overall:

- Livestock numbers were reduced, or animals split into smaller herds on some farms;
- More livestock were wintered outdoors between two blocks of land. Farmers found this easier to manage and the lower intensity improved ground conditions by reducing bare soil;
- Winter fodder silage bales were pre-positioned in the wintering fields in advance during good conditions for driving heavy machinery onto poorly draining land;
- 100 new feed sites, 60 new gates/access points and 10 new cattle/sheep foot bridges were installed by 2020 (KerryLIFE, 2020).

By early 2018, 39 farmers had implemented measures identified through their farm nutrient management plans (based on data of their stocking rates, fertiliser use and animal housing; of each field's soil type, slope and connectivity to watercourses; and soil tests done on their 'green land' which receives organic or inorganic fertiliser). Measures implemented by 2019 included split and/or summer only applications of organic fertilisers at pre-set rates across 206 ha, no slurry or chemical fertiliser across 272 ha, stock reduction, partial conversion to traditional cattle breeds (on two farms), switch to non-phosphorus chemical fertiliser on 37 farms and changed grazing patterns on 40 farms.

KerryLIFE Nutrient Management Plan (to reduce nutrient inputs at farm and at field level)

- Limit slurry applications to the growing season or apply in two split applications
- Reduce livestock
- Conversion to traditional breeds
- Reduce chemical fertiliser use
- Switch to non-phosphorus chemical fertiliser
- Alter grazing patterns

Alternative drinking water facilities for livestock

- Sheep drinker – plastic water trough
- Cattle drinkers – plastic or concrete water troughs or nosepumps

Some 262 farm locations required alternative drinking water facilities and farmers had installed 155 by Q2-2017, with full completion by early 2019. Mountain streams were the main supply for troughs, while larger streams and rivers supplied nosepumps. Some mixed livestock farmers benefitted from sheep and lambs also drinking from cattle drinkers, described as a "bonus" (2018: 24). Initial reluctance by some farmers to use the troughs was overcome. An estimated 1,040 cattle were excluded from FWPM watercourses to drink water – eliminating livestock damage and pollution to the FWPM and its habitat, and reducing sediment losses as ground vegetation recovers.

***Left**: New woodland with deer fencing.*

FOREST PROPERTY	OWNER	AREA SURVEYED (HA)	IMPLEMENTATION ACTIONS
BOHACULIA	Public	84	2 ha trial site to transform clearfell conifer forest into continuous cover forestry. Retro-fitted a buffer along Kealduff by hand across 18 ha. Prescribed burns and willow firebreaks
ESKINE	Public	72	Halo-thinned 27 ha of Sitka spruce, felled-to-waste 14 ha of low yield class spruce, installed 400 log-dams, re-planted 18 ha of native woodland in 2019
GARRANE	Public	16	Ring-barked 10.7 ha of poorly performing spruce on deep peat, harvester fell-to-waste 3.4 ha and pollard 0.9 ha on shallower peat, treated rhododendron on 15.5 ha
GEARHA NORTH	Public	51	8.2 ha previously clear-felled conifer plantation converted native woodland planted, mainly birch with some Scots pine, rowan and oak, with deer fences and monitoring of deer browsing
GORTFADDA	Public	34	Halo-thinned 12.5ha Sitka spruce by ring-barking 4,500 and felling-to-waste 1,500 around 750 native trees in both 2015 and 2020
SLIEVADUFF	Public	78	23 ha sensitive harvesting trial with Coillte contractors, including sediment traps, grass, reseeding and willow planting. Planted 23 ha with native woodland.
TOOREENAFERSHA	Public	127	10.2 ha previously clear-felled conifer plantation converted to native woodland (birch, Scots pine, rowan and oak)
TOOREENAHONE	Public	33	Halo-thinned 12.5ha Sitka spruce by ring-barking 4,500 and felling-to-waste 1,500 around 750 native trees in both 2015 and 2020
LYRANES	Private	15.12	10.22 ha native woodland planted and 4.9 ha oak-holly woodland conserved
CANKNOOGHEDA	Private	7.74	7.74 ha native woodland planted
KEEAS / GLANMAKEE	Private	8.46	7.12 ha native woodland planted and 1.34 ha oak-holly woodland conserved
DERRYLICKA	Private	10.87	8.67 ha oak-holly woodland conserved and 2.2 ha native woodland planted
LICKEEN	Private	8.43	Applied for conservation of existing oak-holly woodland
DROMDOORY	Private	3.51	Applied for conservation of existing oak-holly woodland
DERRYGARRANE SOUTH	Private	5.5	Converted 5.5 ha of moderately performing Sitka spruce and replanted with native woodland
GORTBRACK	Private	21	Forest property found to be an uneconomic and environmentally sensitive site – project to document issues to inform future policies

***Table 2.1**: Public and private forest management plans.*

2.3.5: KerryLIFE Forestry Actions

In addition to the six sets of on-farm interventions, outlined in the previous pages, KerryLIFE supported a number of farm-forestry actions as follows:

A forester and hydrologist were contracted to survey 495 ha in eight public forests (Coillte) and 36 ha in two private forests. Sites were difficult to survey due to their terrain and complexity. The surveys documented management practices (planting and felling dates, species planted), mapped the drainage network (pathways along 126km of forest drains and streams), and sources of sediment and nutrients. It concluded with a risk assessment (based on the source and pathway mapping exercises) and proposed conservation actions. These were incorporated into eight public forest management plans and one private forest plan to (1) manage existing native woodland; (2) convert conifer plantations into long-term retention woodland; and (3) plant new native woodland (Table 2.1). A review and consultation process followed.

The project restructured 43.7 ha by 2018 (KerryLIFE, 2018), 54.2 ha by 2019 and a further 79.8 ha by 2020 across eight forest properties (KerryLIFE, 2020) of commercial conifer plantation to long-term retention woodland through detailed operational plans that implemented in part or full the forest management plans. The techniques employed included halo-thinning, which increases broadleaf trees by ring-barking conifers to reduce competition. Such phased restructuring presented a minimal risk to the FWPM. Other techniques included planting native species and manually pulling conifers and rhododendron, along with a birch seed broadcast trial. Silt fences were trialled to intercept sediment from forestry activities. Selective harvesting was trialled in a small site within conifer forests to create a diverse stand (size and species) to mimic natural woodland. Controlled burns and willow firebreaks were used.

2.3.6: KerryLIFE Public Awareness & Marketing Actions

Public awareness in relation to the work of KerryLIFE, FWPM and the Natura 2000 network was achieved by increasing the availability of information through the project website, social media (Facebook and Twitter), media releases, national TV (including participation by farmers, Coillte staff and local school children), national radio (Morning Ireland), local radio, posters, brochures and hosting visits from other organisations and participating in conferences.

Project launch, public meeting and events

Annual '*Pearl Shield*' challenge matches between the Blackwater and Caragh communities under 10s and 12s GAA teams proved to be very popular. The event alternated between the catchment communities with the winning team receiving the KerryLIFE 'Pearl Shield' trophy and each child an engraved KerryLIFE medal. KerryLIFE took a stand at the annual National Ploughing Championship. The KerryLIFE team participated in the IPB Pride of Place Award led locally by Cappanalea Outdoor Education Centre (Kerry Education and Training Board) one year and with Blackwater Women's Group another year, which contributed to the project building relationships across the communities. Other activities included the KerryLIFE Midsummer Moth Madness public talk, involvement in 2015, 2016, 2017 Science Week and the 2016 Kerry Science Festival in Castleisland, and the (2017) 25th birthday of LIFE with a lesser horseshoe bat public talk and walk.

Added value, product branding and tourism

For the added value, product branding and tourism measures to promote income diversification, the project sought to develop a farm produce brand for traditional cattle breeds reared in a sustainable way that helps to conserve the pearl mussel. The farm advisor conducted a census of cattle on KerryLIFE farms and monitored the performance of a sample of 30 calves (daily weight gain). Meetings ensued with Ring of Kerry Quality Lamb Society and Bord Bia from Q1-2018. A special farm ration was developed by AgriKing to meet livestock nutritional deficiencies linked to their local forage. Two farmers were selected to participate in a pilot. Three cattle were fed the ration, slaughtered and produced very high-quality carcasses (KerryLIFE, 2019).

Three pearl mussel recreational walkways (KerryLIFE walking trail) were developed to promote the work of KerryLIFE to the general public and offer an amenity for the community. The SKDP recreation officer planned two looped walkways in the Caragh catchment to link into Kerry Way. A Wildlife Biology and Tourism student researched ecology, history and geography along the route.

The trail includes signage promoting FWPM and KerryLIFE. Work by contractors, appointed by Coillte, began on the Lickeen and Castlerock Looped Walks in early 2019 (KerryLIFE, 2019). There were investigations into potential walks in the Blackwater catchment (KerryLIFE, 2019). While there is no walking trail in Blackwater, there is demand for such an amenity and the community proposed two trails including a 2.5 km looped walk in forestry and a 3 km linear riverside walk (KerryLIFE, 2019).

Demonstration, Training and Awareness-Raising Actions

Demonstration farms in both catchments were selected for training and knowledge sharing regarding farming and FWPM conservation (e.g. farmer champions, farm characteristics, ecology and ease of access). Demonstration forests were chosen also. There were eight demonstration events (7 farm and 1 forest) e.g. about implementing a nutrient management plan or installing a nosepump. There were 14 training workshops, including eight for the forest sector.

A Kerry-wide schools education programme was delivered to 669 school pupils during 19 national school visits, four secondary school visits (Killorglin, Cahersiveen and Castleisland) and two field visits. One joint school visit and field trip with Inland Fisheries Ireland (IFI) included insect identification and electrofishing. Some 133 undergraduates in Wildlife Biology and Agricultural Sciences in Tralee IT visited project sites and viewed mussels. The KerryLIFE logo was designed through a schools' competition. KerryLIFE participated in the ESB National Tree Week, in partnership with Coillte and several schools. KerryLIFE also provided work experience and internships for five Institute of Technology, Tralee (ITT) undergraduates in wildlife biology, tourism, and agricultural science, and one Spanish graduate.

KerryLIFE supported an assessment of the importance of agriculture and forestry in the two freshwater pearl mussel catchments in maintaining the landscape and the importance of the landscape in maintaining the tourist industry.

2.3.7: Wild Beef Marketing Plan

Drawing on the successes of the Ring of Kerry Quality Lamb, KerryLIFE beef initiated a plan to develop the supply chain from livestock raised in wild habitat, through premium beef processing techniques to a taste experience. Key elements in the marketing KerryLIFE beef were: respect; real; wild; nature; landscape and traditional. While this plan was initiated, it did not progress to the extent that had been envisaged.

2.4: Legacy Planning – From KerryLIFE to the Pearl Mussel Project

The PMP *"is a locally led European Innovation Partnership (EIP) pilot project that aims to establish a partnership between the project team, farmers, the Department of Agriculture, Food and the Marine (DAFM) and other stakeholders*[5]*"* (PMP, 2019: 1).

***Left**: Blackwater Bridge in the Blackwater catchment area.*

[5] Other stakeholders include farm advisors.
[6] Other counties included in the PMP with Kerry are sites in Cork, Galway, Mayo and Donegal.

***Left**: Owenroe River in the Caragh catchment area.*

Nationally, the PMP team held consultation meetings in late 2018 in each of the eight catchments[6] to inform farmers and local communities about the initiative and to gain their input into the design of the results-based agri-environmental payment scheme (RBAPS). The catchments include Caragh and Blackwater from KerryLIFE (along with Currane downstream of them that flows into Ballinskelligs Bay). A total of 29 farmers attended the Caragh meeting and 31 attended the Blackwater one.

In the Iveragh uplands, the predominant farm enterprises of interested farmers were mixed livestock (~2/3) followed by beef, with some sheep (more sheep farms in Caragh). Prior knowledge of the FWPM across PMP catchments nationally was highest among farmers in the upland Iveragh catchments, all of whom had heard about the species before the meeting. Some knew of them all their lives, while one quarter of those from the Blackwater and one third of those from the Caragh catchment had learned of the FWPM through the KerryLIFE project. Across the PMP sites, most farmers view the FWPM positively, associating them with clean water or a healthy environment.

The PMP is a pilot project, of five-year duration, running until December 2023. It may be used to inform the future schemes to be developed under the next RDP when there is likely to be a greater focus on delivering environmental targets. To accommodate intensive farmers, the PMP has two payment streams:

1 The RBAPS Stream rewards extensive farming in particular[7],

2 The Supporting Actions Stream supports all farmers to improve environmental and habitat quality on their farms, because of which they may achieve high RBAPS payments in the future.

2.5: KerryLIFE Outputs and Review Indicators

As this chapter has outlined, KerryLIFE operated as an agri-environmental programme with a clear set of objectives and in a defined geography. At the same time, KerryLIFE forms part of a wider and growing move in policy circles, public bodies and among farming and rural communities towards the promotion of ecological farming – based on a valorisation of high nature value farmland. Thus, in examining its economic and social outputs and impacts, it is necessary to consider factors, including evaluation indicators, that relate to both the local context and the wider policy and practice milieu in which KerryLIFE is situated. This implies engaging with local, regional and national-level stakeholders as part of the review process, and including all dimensions of sustainable development, namely the economic, socio-cultural and ecological. It also requires considering the interfaces and interactions between the micro, meso and macro level actors and their respective influences on one another. The following chapter (Literature Review and Conceptual Framework) considers KerryLIFE's approach, structure and outputs in the context of relational governance, policy and resource factors, and it offers a social-ecological systems (SES) framework that enables an objective analysis of KerryLIFE that draws conclusions and offers pointers that are relevant locally, nationally and at the EU level.

[7] The PMP has a supplementary admin payment to low payment recipients for their disproportionately higher advisor fees.

3: LITERATURE REVIEW & CONCEPTUAL FRAMEWORK

The following sets out the context for this socio-economic evaluation of KerryLIFE in terms of agricultural and rural restructuring trends that have been influencing farming and farm households in the project area for decades. It looks at how policies and the thinking informing them have evolved over the same time period. It recognises the long history of farming and rural dwelling that has led to strong interdependencies between the project area's native biodiversity (plants and animals) and its farming community, in particular. KerryLIFE was not designed to preserve a threatened species through reserve designations and exclusion of human activities. Instead, it recognised the mutually reinforcing goals of supporting appropriate farming practices (modified through knowledge transfer from the sciences in particular) and conserving the freshwater pearl mussel and its habitat. As outlined in its funding application (DAHG, unpublished document), the KerryLIFE project was:

> *"developed on the principle that land users do not set out to damage or disturb species in their environment. However, national and European social and economic drivers combined with local cultural practices have with time contributed to the emergence of land use practices that are less than compatible with the conservation of threatened species such as freshwater pearl mussel populations."*

The next sections consider those drivers of change, including in the KerryLIFE project area, to help to understand in particular why farming practices evolved in the way that they did and what the changes mean for the future of local biodiversity, including humans.

3.1: Agricultural Restructuring in Ireland

Farming structures and systems in Ireland have evolved over the past fifty years from the traditional mixed model of farming that was common before accession to the European Union[8] in 1973 to an increasingly specialist and intensive type of farming. This process of farm restructuring is called productivism.

3.1.1: Productivism – A Modern and Global Story

Farmers in Ireland operate within a range of networks, from familiar local farming and rural circles to more distant national and international policy frameworks and supply chains. Crowley and Meredith (2013) summarised how these have shaped modern Irish farming as follows. The dominant model of agriculture in the EU known as 'productivist' farming has been in place since the end of World War 2 and incentivises specialisation and intensification of farm production. Initially this was motivated by the political priority of ensuring a secure and affordable food supply for consumers in the aftermath of war, but it is predominantly driven now by the economic imperative of achieving economies of scale in order to compete on price in a global marketplace. Productivism sets farm enterprises on a treadmill of increasing farm size and expanding farm outputs, requiring them to continually adopt new technologies to meet market demands and regulatory requirements (a process described as para-productivism). This model continues to dominate farming policy and industry discourses, as well as mainstream farming media. Yet, a finite supply of land and its natural resources dictate that only a minority of farms can ultimately pursue that model of farming and remain economically viable. This leaves the majority of farmers on the margins of economic viability, having to employ a variety of farm livelihood strategies in order to persevere (a process labelled peri-productivism). Farm numbers inevitably decline as those no longer able or willing to exist in an unsuitable policy and economic framework for their land and resource context exit farming during their working lives or are understandably unable to attract a successor when they retire, or die (Figure 3.1).

By the last Census of Agriculture in 2010[9], just one quarter of Ireland's nearly 140,000 farms were deemed to be economically viable as standalone enterprises. Of the remaining three-quarters, one-half were considered sustainable because the farm income was supplemented by the farmer or their spouse/partner engaging in off-farm employment and the other half were classified as economically vulnerable because they were economically unviable and neither the farmer nor their spouse/partner had an off-farm job (Hennessy *et al.*, 2012). Among the farming systems most characteristic of high nature value farmland in Ireland (including the KerryLIFE project area), cattle farm viability ranged from just 10-20% while that of sheep farms was only marginally better at close to 30% (ibid.).

[8] Then called the European Economic Community or EEC.
[9] The next agricultural census is due to be conducted in September 2020 by postal survey.

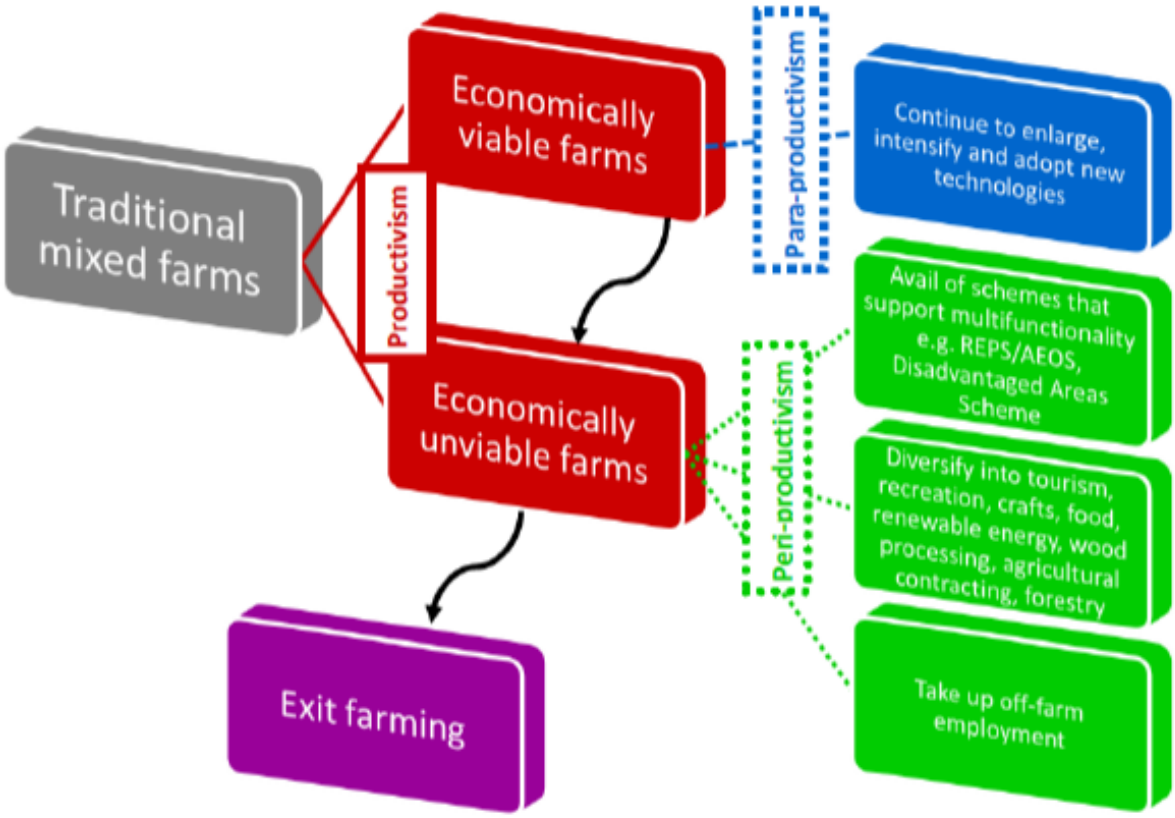


***Figure 3.1**: Agricultural restructuring in Ireland from the 1960s. Source: Crowley and Meredith (2013).*

3.1.2: Traditional and Local Farming Cultures – Back to the Future

That there are still so many economically unviable farms in existence after more than half a century of productivism provides evidence of (1) the failings of the productivist model for the majority of family farms and (2) the strength of family farming culture and identities for farms to persist in spite of productivism's failings. For instance, the vast majority of farms in Ireland remain as family-run enterprises, developed and passed down through the generations (Crowley *et al.*, 2008). It is also evidence of the traditional resilience of farming and rural areas more broadly, where people have evolved over centuries to adapt to seasonal changes and to innovate when faced with new challenges and opportunities. Before productivism, traditional farming was more visibly integrated into a broader rural economy of diverse income-generating activities – it had to be. This economic reality saw farmers engaged in complementary livelihood strategies such as fishing, construction or providing services depending on their skills and resources, including as farm and building labourers elsewhere in Ireland and further afield. This strategy of combining farming with another job continues today, including in the KerryLIFE project area, and is called pluriactivity. Under productivism, pluriactivity might be misconstrued as an indicator of unsuccessful farms (as suggested by Hennessy *et al.*'s (2012) use of the term 'economically vulnerable'). But a different interpretation is that it may actually signal resilient farms and pragmatic realism on the part of farmers. That resilience can be demonstrated by non-farming spouses or partners too, such as those who traditionally created their own income-generating activities through working in particular areas of husbandry (hens) and direct food sales (eggs) or crafts (e.g. knitwear) or offering farm accommodation, a phenomenon now known as farm diversification. Due to social changes in Ireland since the late 20th century that have improved gender equality and opened up higher education and the labour market to women, non-farming spouses or partners are increasingly independent of farm enterprises and even rural economies, working off-farm delivering professional services, especially in the educational and healthcare fields. The contribution of their earnings to sustaining family farms tends to go under the radar.

An underexplored aspect of traditional Irish farming cultures that is relevant to the KerryLIFE project is their ethos of sustainability. Before environmentalism, that traditional sustainability ethos recognised the carrying capacity of the land. It was based on a cultural system that valued the work of one's own and the community's ancestors, and emphasised a farmer's duty to pass on a farm to the next generation in as good if not better condition than they inherited it. For instance, principles of ecology and social justice are documented through the Brehon Laws from the closely intertwined Gaelic tribal farming and social systems of medieval Ireland. The strongest echoes of this cultural system can still be found in marginal farming areas unsuited to the treadmill of modern para-productivism. Generally identified in current times as high nature value (HNV) farming areas, these places and their farming communities may offer a deep-rooted foundation from which to build both a culturally authentic and a science-informed agri-environmental ethic that could not only be recognised but genuinely owned and driven by farmers. This is because such an ethic would come from farmers' own heritage, an intangible heritage that lives on in the memories of those who grew up on and worked the land with their forebears up to the 1970s, in particular, and a tangible heritage evidenced in the vernacular farmsteads and other artefacts left behind. The current generation of farmers in Ireland may be the last with lived experiences of its traditional mixed subsistence farming and all of its associated practices. Uplands like the KerryLIFE project area in the Iveragh peninsula are strongholds of such HNV farming (in fact 'refuges' may be a more accurate term) and are characterised by indigenous populations (O'Keeffe and Crowley, 2019) signalling deep connections to land and place.

3.2: Rural Restructuring in Ireland

Rural development is the process of improving economic and social lives in rural areas. It is a useful lens through which to view the changes happening in rural areas in Ireland (including changes in upland farming strongholds such as the KerryLIFE area) in a process called rural restructuring. Traditionally government supports for rural development have been narrowly concentrated on just agriculture and forestry, therefore rural development policy is located within the Common Agricultural Policy (CAP).

3.2.1: From Agricultural to Rural Development Policy

As introduced in the section on traditional farming cultures, farming does not happen in the vacuum of a global agri-food complex. Because of their narrow focus on farm production, productivist agricultural policies have tended to overlook the longstanding resilience of farm households achieved through practices of adaptation, innovation and integration within the broader economy. Farms have traditionally been multi-sectoral enterprises producing food, fibre and/or energy, and trading a range of products and services through a variety of markets and non-monetary forms of exchange.

Alternative policies to productivism emerged in the 1970s with the recognition of Less Favoured Areas (LFAs) to help counter rural depopulation as farming futures deteriorated. But by the 1980s, the negative impacts of productivism were clear, especially intensification through land drainage, hedgerow removal, the shift from hay to silage and from native to continental livestock breeds, along with overstocking. Farming was increasingly out-of-sync with the nature on which it relied and there were public outcries towards visible evidence of this disconnect (including soil erosion on commonages, loss of wetlands, freshwater eutrophication, fish kills and disappearing corncrakes). A second pillar to the CAP was introduced in the 1992 reforms to help address these issues. Concepts such as the European Model of Agriculture and its associated multifunctional services (competitive and sustainable food and fibre production, a populated countryside providing environmental services, plus social and economic cohesion across regions of the EU) helped to justify farming subsidies to both rural and urban populations (COPA/COGECA, 1999).

Thus, the CAP was broadened to include early examples of rural development policies in order to try and address the inequality in the spatial distribution of subsidies (which were increasingly going to stronger farming areas) and the negative environmental consequences of productivism. As well as funding agri-environmental schemes, Pillar 2 financed the LEADER programme that supports farm diversification (e.g. into food processing, recreation and tourism ventures), plus enterprise and community development and innovation in rural areas more generally. This was recognition that although

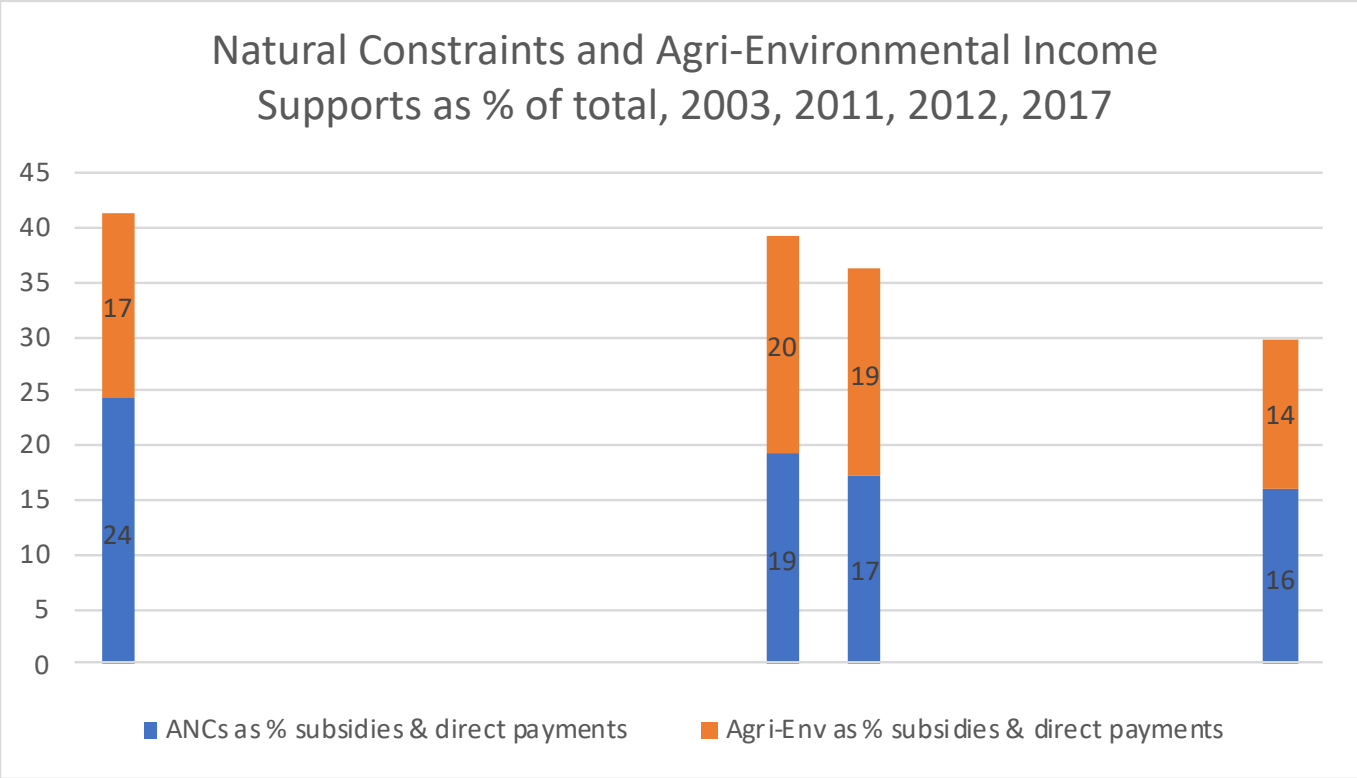


***Figure 3.2**: Pillar 2 supports on Irish hill farms. Source: O'Keeffe and Crowley (2019).*[11]

agriculture and forestry may still be significant sectors in some areas, rural residents were increasingly more likely to be employed in the services sector. But locating rural development policies within the long-established CAP, where the productivist model enjoys the support of powerful proponents across industry and farming lobbies, has limited the funding made available to them and prevents rural development policies from realising their full potential (e.g. Dax, 2013).

Despite the introduction of social, environmental and alternative development supports in Pillar 2 for farms marginalised by productivism, declines in the number and activity of family farms in HNV areas like the uplands are of concern. O'Keeffe and Crowley (2019) used data from Teagasc's annual National Farm Survey to show that hill farms[10] are declining at a faster rate than farms in the State generally, and that the remaining consolidating hill farms are improving pasture at the expense of native vegetation. While one would expect Pillar 2 subsidies to play an increasingly important role in supporting hill farming incomes, these national data suggest the opposite. Productivist supports seem to underpin these trends as while hill farms are more dependent on CAP subsidies in general, Pillar 2 supports designed for HNV farming comprise a shrinking proportion of those subsidies (Figure 3.2).

In other words, upland farms are increasingly dependent on productivist supports from Pillar 1 that not only fail to value HNV farmland, but encourage its degradation. In an era of biodiversity extinction and climate change, when the importance of Ireland's remaining HNV farmland has never been greater, Pillar 2 of the CAP appears to be failing to achieve its purpose in the HNV strongholds of the Irish uplands. This policy failure highlights the importance of critically evaluating Pillar 2 and similar measures (including place-based projects such as KerryLIFE) and then applying the lessons learned to improve the design and efficacy of existing measures, and creating new ones where necessary. This is the policy context for KerryLIFE's social and economic evaluation.

[10] Hill farms are those where the dominant soil type is class 5 or 6, i.e. they have very or extremely limited soil potential and this affects their output. All of the KerryLIFE project area falls into these two classes.
[11] Data are shown from two time series as the farm survey methodology changed in 2012 when the minimum farm size threshold for inclusion in the survey sample was increased to €8,000 standard outputs.

3.2.2: Beyond the Agriculture and Rural Development Policy Binary – an Integrated Territorial Cohesion Approach

Better transport and ICT infrastructures are opening up rural areas to the services sector in particular and underpin the evolution of the New Rural Economy (the rich diversity of which is captured by rural typologies e.g. Walsh and McHugh, 2000; Copus, 2013). Indeed, the design of KerryLIFE recognised the importance of exploring the rural development dimensions of HNV farming. Not only was KerryLIFE an agri-environmental scheme that included action- and results-based measures to benefit the environment for the freshwater pearl mussel, it also explored farm diversification opportunities through value-added food production and branding, as well as amenity (walking trail) development.

Having outlined the limitations of rural development policy above, positioned as it is within the CAP, it is encouraging to know that a vision for rural territorial cohesion has emerged from concepts of territorial cohesion and it offers a more dynamic model for rural development in the 21st century. It has been a number of decades in the making. The original Cork Declaration of 1996 and its update in 2016 called on EU policy makers to strengthen rural development policy and be more visionary in terms of sustainable rural development. The earlier version highlighted: rural-urban cohesion, an integrated approach across disciplines conceptually and across sectors in practice that were suited to place (i.e. a territorial dimension), along with the importance of diversification, sustainability (in terms of both future generations and global impacts) and subsidiarity (decentralised to as local as possible and characterised by partnership, cooperation, bottom-up) (European Commission, 1997). These calls were updated and expanded in 2016 when rural areas were recognised for their identity, dynamism and diversity, as well as their role in circular[12] and green[13] economies, and the need for the following: rural ICT connectivity and generational renewal through opportunities for young people, cross-sectoral policy responses, land use more in tune with climate action, participation in the knowledge economy (including among those working in the primary sector), greater capacity building in rural governance based on LEADER and EIPs, complementarity and coherence of agricultural and rural policies with other policies, streamlined bureaucracy, and finally more accountable policies as evidenced by monitoring and evaluation (European Union, 2016). This evolution of thinking around rural development fits within a wider context of sustainable development. The United Nations has set out 17 sustainable development goals (SDGs) in recognition that the global challenges facing this and future generations cannot be addressed through sectoral or top-down approaches (Figure 3.3). The SDGs set out a vision for 'people' and the 'planet' to achieve 'prosperity' and 'peace' through 'partnership' because the challenges of today cannot be solved by the thinking of yesterday (United Nations, 2015). Instead, they must be tackled through joined-up and collective action across disciplines, sectors and spatial scales to have any chance of success.

Table 3.1 summarises the evolution of rural development from its agricultural origin to the OECD's 'New Rural Paradigm' and the more recent 'Rural Cohesion Policy'. The latter's vision of rural development is one that is strongly place-based and underpinned by social equity or 'fairness'. It recognises the importance of relationships and capacity building (to improve communication, cooperation, collaboration and coordination), with effective and appropriately scaled governance to guide the actors through their particular roles and responsibilities, enhanced through research and education (Copus *et al.*, 2013).

Academic understanding of rural development has matured from a sectoral and top-down approach of compensating for disadvantage through to an integrated territorial approach of inclusive growth (beyond primary production alone) that recognises the importance of relational processes and such 'soft' capital as human, social and institutional, alongside more tangible capitals. Thus, the conceptual framework used to evaluate the social and economic impacts of KerryLIFE would need to be able to encompass the human/organisational relationships influencing such a project, alongside the natural and farming resources underpinning it, all set with the broader context of agricultural and rural restructuring.

[12] An economic system that seeks to eliminate waste and enable the continual use of resources.
[13] Environmentally sustainable economic development.

***Figure 3.3**: Sustainable development goals. **Source**: United Nations (un.org).*

	Old approach	NRP	RCP
Objectives	Equalisation, farm income, farm competitiveness	Competitiveness of rural areas, valorization of local assets, exploitation of unused resources	Inclusive growth, territorial cohesion and social justice, aiming at distributing benefits widely among all rural residents and activities
Key target sector	Agriculture	Various sectors of rural economies (ex. rural tourism), manufacturing, ICT industry etc	Emphasis upon interaction and relational processes of all relevant sectors
Main tools	Subsidies	Investments	Balanced set of instruments, including 'soft' tools (capacity building, cooperation and networking)
Key Actors	National government, farmers	All levels of government (supranational, national, regional and local), various local stakeholders (public, private, NGOs)	Multi-level governance (intermediary agencies, strategic partnerships, rural-urban partnerships etc.) research and education, and communication

***Table 3.1**: Evolution of thinking in rural development policy. Source: Copus et al. (2013).*

3.2.3: From Public Goods and Ecosystem Service Provision to Social-Ecological Systems – A Conceptual Framework

Since the 1990s and the emergence of the Rural Environmental Protection Scheme (REPS, Ireland's first agri-environmental scheme), the concept of environmentally friendly farming has become familiar and normalised in agricultural circles. Today, every farmer supported through the Common Agricultural Policy (CAP) is expected to meet certain standards in return for their farm subsidies (i.e. cross compliance), including preventing water pollution, conserving wildlife and their habitat, maintaining soil and controlling invasive species. Those participating in an agri-environmental scheme (AES) must deliver benefits over and above these minimum requirements. These benefits are called '*public goods*' by economists and '*ecological services*' by scientists.

Increasingly, AESs have shifted from solely action-based schemes to ones that incorporate results-based elements, known as results-based agri-environmental payment schemes or RBAPS. Action-based schemes include the REPS model (and the current model called GLAS or Green, Low-Carbon Agri-Environmental Scheme) that reward farmers simply for carrying out particular activities on their farms without any follow-up monitoring and evaluation of the outcomes. RBAPS have proven to be more successful in linking actions taken by farmers to desirable outcomes in terms of habitat conservation (O'Rourke and Finn, 2020). This strengthens the educational outcomes too. Most schemes now are a hybrid of the two and that is where KerryLIFE fits.

Common pool resources are natural or human-made resource systems, such as rivers and commonage. Public goods and ecosystem services are well-established concepts used to justify policy support under Pillar 2 of the CAP and successfully inform placed-based projects across Ireland (e.g. various case studies in O'Rourke and Finn, 2020). However, they do not offer a sufficiently comprehensive framework for considering and understanding the influence of human and relationship factors, both of which are important to assessing the social and economic impacts of AESs.

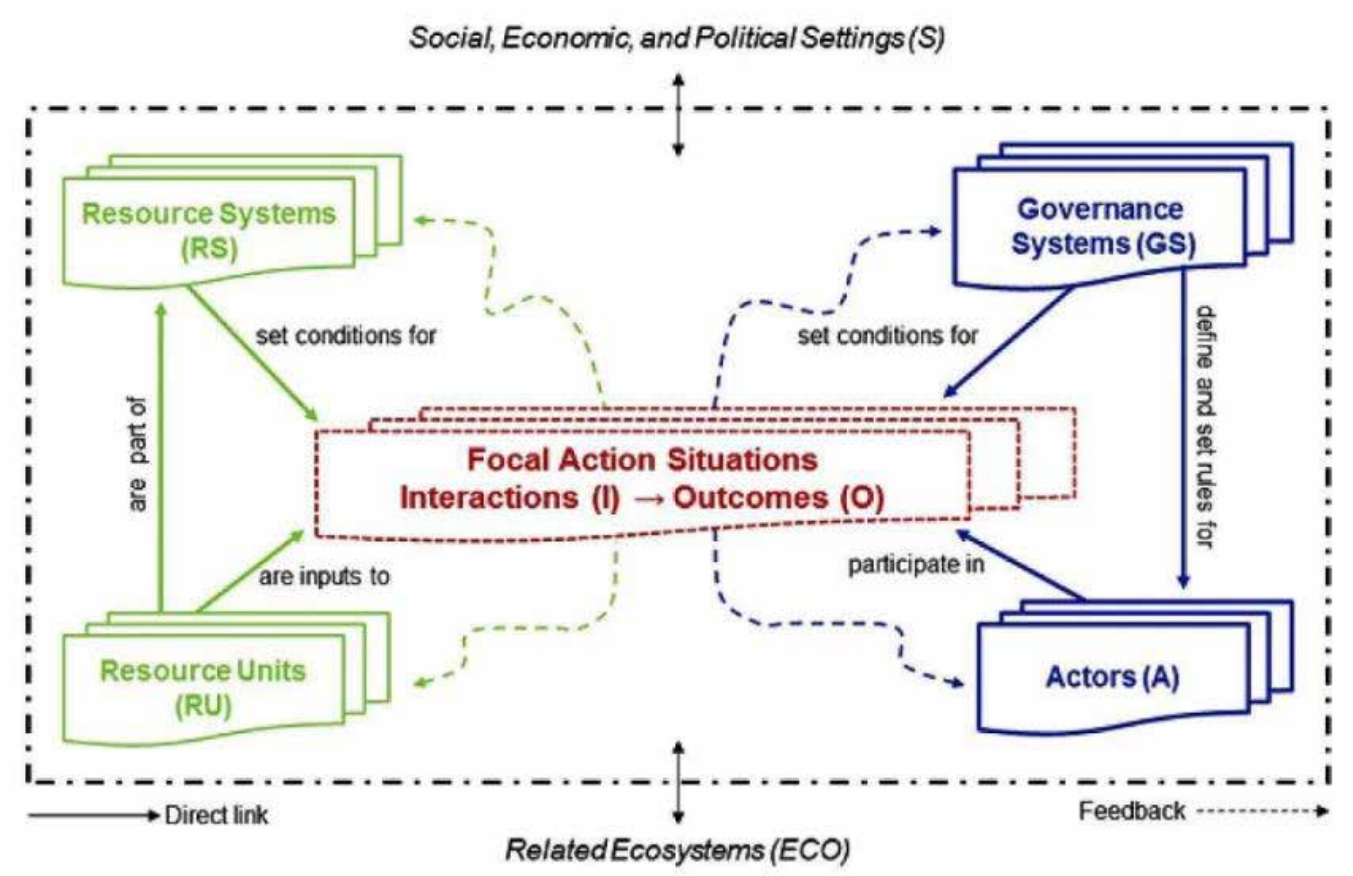


***Figure 3.4**: An illustration of the social-ecological systems framework.*

***Above**: Kealduff Valley in the Blackwater catchment area.*

The social-ecological systems (SES) model is a holistic framework that considers farms and place-based schemes within their broader social, economic, cultural, political and environmental contexts and shines a light on the relational processes and multi-level governance that are so important to them. Described as an adaptable framework suited to collective action research (Partelow, 2018), the SES framework is a nested, multi-tier diagnostic approach that can be used to:

- Frame common pool resource challenges;
- Structure multi-stakeholder collaboration; and
- Support mutual understanding and resource management.

Developed by the Nobel prize-winning economist Elinor Ostrom (2009), the SES framework can evolve and expand as knowledge grows, while the use of a shared framework and language supports communication, understanding and collaboration across diverse disciplines. It has already been successfully applied to 34 EU case studies of public goods and ecosystem service provision from farming and forestry through the Horizon 2020 IEEP project 'PEGASUS' (Dwyer *et al.*, 2018). Consequently, this study employs the conceptual framework to evaluate the social and economic impacts of the KerryLIFE project and shape the resulting report.

Figure 3.4 outlines the key elements of the SES framework (McGinnis and Ostrom, 2014) and can be understood as follows. The project area is represented within a rectangle denoted by a dashed line. On the left-hand side of the rectangle are the resource systems and their constituent resource units of interest, for example the target ecosystem(s) and animal or plant species. The resource systems set the conditions for the project 'actions' at the core of the project, while the resource units are inputs to them. On the right-hand side of the rectangle are the governance systems and their constituent and related 'actors' or stakeholders, for example management groups and all of those responsible for implementing the actions. The governance systems set the conditions for the project actions and determine the rules which actors must follow when implementing them. This helps to highlight the various levels of responsibility within the project, all of which contribute to the realisation and success of its outcomes. But the framework does not stop at the project area. It also recognizes the broader settings in which the project is situated, ranging from social, economic, political (and cultural) settings (at the top of the graphic) to related ecosystems within and beyond the vicinity (at the bottom of the graphic). In this way, the framework opens up the potential to evaluate social and economic impacts in relation to influential regional, national and supra-national factors across geographical scales.

4: METHODS

4.1: Profiling the Geography of the KerryLIFE Area

A range of freely accessible Irish government spatial datasets were used to map characteristics of the KerryLIFE project area and its regional context.

4.1.1: Scene-setting Maps

Spatial data on land use ranges, landcover, NATURA 2000 designations, water quality and archaeological/historical monuments were mapped to provide an understanding of the environmental, natural and cultural characteristics of the KerryLIFE landscape.

4.1.2: Population and Activity Maps

Small Area[14] level data were drawn from the most recent Census of Population in the Republic of Ireland (2016)[15] and then used to calculate socio-economic variables of interest. Census data were visualised in choropleth maps of five classes using data-ranking classification schemes. The mapping classification scheme used was based on the distribution of the national dataset for each variable and how the data for the Iveragh peninsula related to it. Normally distributed datasets were mapped using the quintiles classification scheme. That scheme ranks the data for each variable from its lowest to its highest value, with map class breaks at the 20th, 40th, 60th and 80th percentiles. Classification of datasets where Iveragh values were higher than average placed a focus on revealing the spatial pattern in the upper range, while classification of datasets where Iveragh values were lower than average focused on those of the lower ranges.

Each of the resulting five classes were visualised using a different colour where the darker the colour, the larger the value, which allows the map reader to 'read' the story of the data's spatial pattern and begin to explore the reasons for that pattern.

4.1.3: Farming Maps

Electoral Division level data were drawn from the most recent Census of Agriculture in the Republic of Ireland (2010)[16] and then used to calculate farming variables of interest. Census data were visualised in choropleth maps of five classes using data-ranking classification schemes. The mapping classification scheme used was based on the distribution of the national dataset for each variable and how the data for the Iveragh peninsula related to it. As above, normally distributed datasets were mapped using the quintiles classification scheme, while datasets where Iveragh values were particularly high or low used smaller class ranges at those levels to reveal the local geography of interest. Each map records the classification schemes used.

4.2: KerryLIFE Farmer and Farm Household Stakeholders – Data Collection

Farming households were the primary participants in KerryLIFE, and were the single largest cohort (in numerical terms) to participate in the review. The research team applied a mixed-methods approach to enabling farm households to provide feedback and put forward recommendations.
This involved:

- Administering a survey questionnaire
- Face-to-face meetings / interviews / conversations with participating farmers and members of their households and
- On-site visits to farms to view practices and investments associated with KerryLIFE and to hear from farmers about their experiences, perspectives and recommendations.

The data collection process began with the KerryLIFE office circulating a notification to all farming households, advising them of the evaluation and to expect contact from the independent evaluators. The KerryLIFE office then shared farmers' contact details, under a confidentiality agreement, with the evaluators. This allowed the research team to make direct contact with all farmers and to forward them the survey questionnaire. Additional questionnaire forms were dispatched to farm households with multiple members to encourage responses from spouse/partners, offspring and grandparents. Farmers had the option of returning the questionnaire by post. They were also advised that one of the evaluators could call to their farm, in order to collect

[14] Small Areas are the smallest spatial unit for which census data are provided (n=18,641) and tend to represent information from an average of 70-120 households.
[15] The next Census of Population will be conducted in 2021.
[16] The next Census of Agriculture is being conducted in September 2020.

the completed questionnaire. During the period over which data were collected (mid-August to mid-September), seven farmers returned questionnaires by post, while the majority (n=29) opted for the evaluators to collect the questionnaire. Three of the seven farmers who returned questionnaires by post were also visited in-person. Two farmers who live away from their holdings participated in telephone interviews. The farm visits afforded the evaluators the opportunity to talk face-to-face with farmers. These conversations and the telephone interviews took the form of semi-structured interviews, based on the following questions / prompts:

- Tell me / show me about KerryLIFE on your farm.
- How did you find KerryLIFE?
- Does KerryLIFE matter or make a difference?
- What do you think of agri-environmental approaches?

In some cases, the researcher completed the questionnaire with the farmer, and invited him / her to expand on his / her responses.

The survey questionnaire enabled the collection of mainly quantitative data. The questions were grouped under the following headings / themes:

- Motivations for joining KerryLIFE
- Experiences and perceptions of KerryLIFE
- Outputs
- Costs and savings
- Environmental attitudes and behaviour
- Social and community perceptions
- Succession and
- Impacts and legacy.

4.2.1: Response Rate

There was a 100% response rate to the evaluation. All farming households participated in at least one way – either by completing a questionnaire, being interviewed or both. The geographical breakdown of responses was as follows:

- Of the 28 farming households in the Caragh Catchment, 21 completed questionnaires and 20 participated in interviews.
- Of the 23 farming households in the Blackwater Catchment, 15 completed questionnaires and 17 participated in interviews.

In some households, members other than the main farmer (e.g., spouse, adult child) also completed questionnaires. Thus, in total, 50 completed questionnaires were received, and 37 interviews took place.

4.3: KerryLIFE Professional and Community Stakeholders – Data Collection

Semi-structured interviews were identified by the study team as appropriate for the mixed methods approach adopted for the evaluation of KerryLIFE. Semi-structured interviews are a qualitative approach allowing the researchers to design an interview guide that ensure key themes are addressed in order to meet the remit of the evaluation, while also following the flow of the interviewee and facilitating them to express their perspective on the project. It is a conversational style that elicits an exploration of related topics (Longhurst, 2003). This interview approach also complements the mixed methodology adopted for the study, giving a richness of depth to the researchers' understanding of the impacts and processes of KerryLIFE (Creswell and Clark, 2017).

Semi-structured interviews were conducted with farmers (n=37; discussed above) during farm visits, and with the Professional and Community Stakeholders (n=18). Professional and Community Stakeholders (PCS) interviewed can be categorised into the following: project team members, associated beneficiaries, and community stakeholders. All interviewees for the study were selected through purposive sampling, a form of nonprobability sampling. The main objective of a purposive sample is to produce a sample that is representative of the stakeholders or farmers through 'expert' selection, i.e. sourcing names and contact details from the Project Team and the project reports.

Each interview was audio recorded and transcribed, with each transcript being anonymised. Transcripts were then only identifiable from their assigned code (for example: PCS1; PCS2; PCS3 … and so on). Interviews were conducted face-to-face predominantly, either in person or virtually using Zoom. Two were conducted by phone.

As outlined above, the semi-structured approach allows the researcher to ensure that the key themes of the study are addressed during the interviews, which ranged from 30 to 60 minutes in length. The key themes were:

- Role of the Interviewee in the project;
- Experience of similar projects;
- Engagement
  - With the farmers
  - With the community;
- Local impact;
- Legacy of the project; and
- Key lessons.

4.4: Presentation of Interviewee Quotations in Report

To ensure that the voices of stakeholder are represented in their own words, based on their own experience, the results section is illuminated with quotes from the farmers, professional and community stakeholders. Any text in square brackets indicates an addition by the researcher to explain a reference in a quote. A series of three dots represents excised words, while a series of four dots represents excised sentence(s) from the flow of conversation. These steps were taken to order to render quotations from semi-structured interviews and free-flowing conversations as succinct as possible and in some cases to make local terms accessible to an international audience. Interviews from the farmer group were not given an assigned code to maintain confidentiality and ensure that no farmer could be identifiable.

***Above**: Rock markings, believed to be medieval.*

5: RESULTS AND DISCUSSION

5.1: Applying the social-ecological system framework to KerryLIFE

In order to help frame the evaluation findings, this section begins with an overview of how the Social-Ecological System (SES) framework was used to conceptualise the KerryLIFE project across its key elements. The framework can be read as follows: taking the project area as being represented by a rectangle - denoted by a dashed line and beginning with the left-hand side of Figure 5.1 – the Blackwater and Caragh catchments comprise the resource systems that make up the KerryLIFE territory, while the flora and fauna population of participating KerryLIFE farms and Coillte/ private forests are a subset of these. Within those resource systems, the resource units of interest to KerryLIFE encompass freshwater pearl mussels and their natural habitat, farmland and livestock, plus public and private commercial forestry and native woodland, bogs, rough grazing and wilderness areas. Both catchments (including participating farms and forests) determine the conditions for the project actions, while the biodiversity, farming and forestry resources are all inputs to them.

On the right-hand side of the rectangle are the governance systems comprised of the Project Management Group and a Project Stakeholder Group. These governance systems brought together representatives from the key government bodies and regulatory authorities responsible for project oversight and management, along with farmers, other community representatives and relevant professional stakeholders. They set the conditions for the Focal Action Situations of KerryLIFE and they defined the rules for the actors, including the project staff, farmers and foresters. Consequently, governance systems play a vital role in collective action through the effectiveness of their communication, how well they build trust and relationships across stakeholders, and how they all translate into the level of collaboration and coordination needed to implement the actions and achieve their desired outcomes (Stoker, 1998).

At the top of the rectangle, both within and beyond the KerryLIFE project area, are shown the broader settings in which the project is situated – institutional, policy, governance, social, cultural and economic – and which affect the decisions being made by all

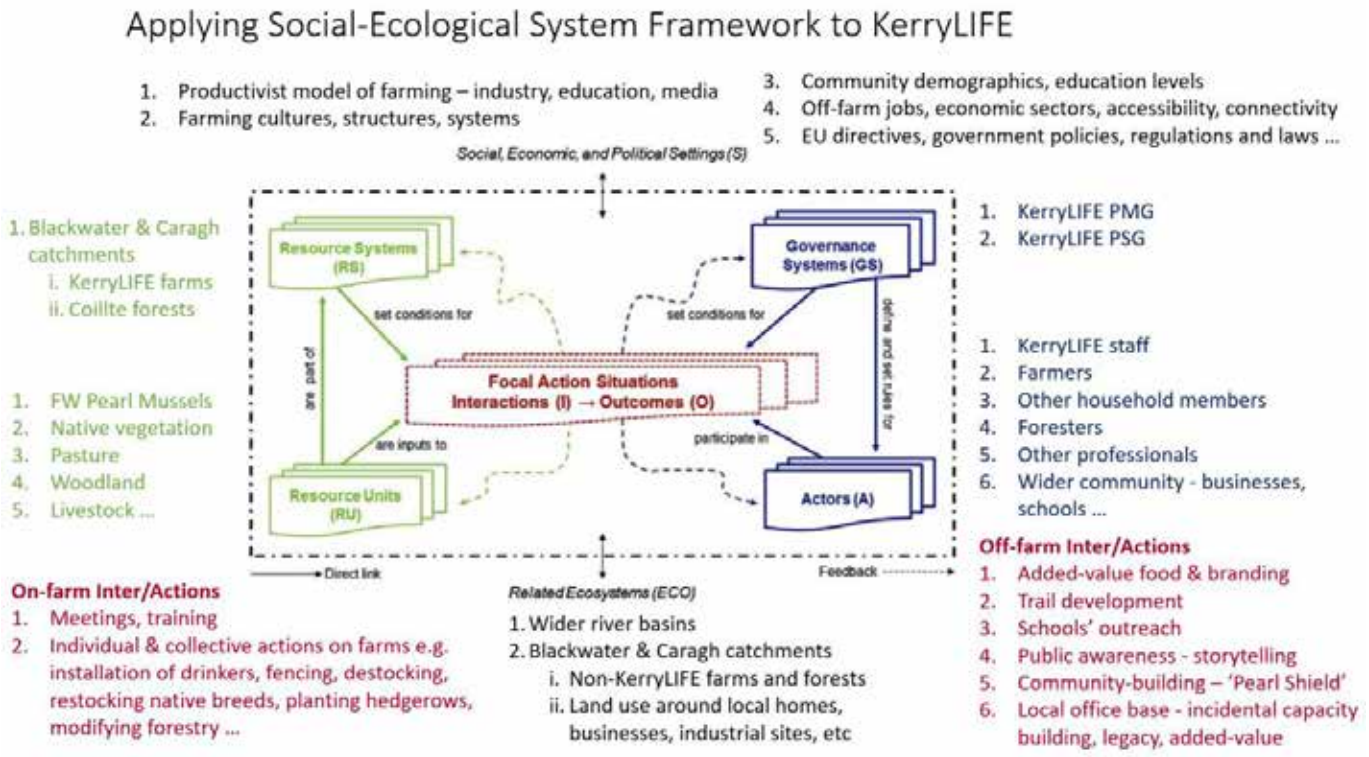


***Figure 5.1**: The KerryLIFE social-ecological system.*

of the stakeholders involved. These contexts involve relational processes across local, regional, national and supra-national spatial scales. At the bottom of the rectangle, related ecosystems in the Blackwater and Caragh catchments include non-FWPM biodiversity and habitats, and non-KerryLIFE farms, forests and other private grounds or public land. The Caragh and Blackwater are sub-catchments within two higher level resource systems called the Laune-Maine-Dingle Bay and Dunmanus-Bantry-Kenmare catchments which drain a landmass of almost 4,000 km^2 that is home to some 86,000 people.[17] This overview sets the scene for evaluating the social and economic impacts of KerryLIFE.

5.2: The Rich Geography of the KerryLIFE Area

The KerryLIFE project area is located in the south-west of Ireland. It comprises two sub-catchments in the Iveragh peninsula of south County Kerry – Caragh and Blackwater (Figure 5.2). The local development company that oversees rural development in the territory is South Kerry Development Partnership CLG and the local government authority is Kerry County Council. The two KerryLIFE catchments overlap with five census administrative units, in terms of both Small Areas (SAs) and Electoral Divisions (EDs)[18]. Transport infrastructure is by road only and limited to narrow tertiary local roads.

5.2.1: Bio-physical and Environmental Settings of the KerryLIFE SES

The following set of maps set out aspects of the KerryLIFE resource systems and related ecosystems, in terms of its social-ecological system. The interior of the Iveragh peninsula is dominated by uplands of the Macgillycuddy Reeks, which run through the KerryLIFE territory (Figure 5.3). This mountain range influences local land use ranges with the entire project area classified as having 'very' or 'extremely' limited soil potential (denoted by shades of purple in Figure 5.4). This topography has significant implications for farming and settlement patterns.

Almost all of the KerryLIFE area falls within a Special Area of Conservation protected under the EU Habitats Directive, and the geography of these designations relate to its uplands and river catchments (Figure 5.5). These designations correspond to habitats of European significance and represent restrictions on land management practices.

A diversity of landcover and vegetation types is found across the KerryLIFE area, but it is dominated by peat bog and marsh (denoted in purple in Figure 5.6). CORINE data from 2018 reveal that while improved pasture is found in the area, farmed land is more likely to be natural grassland or other forms of native vegetation.[19] These characteristics influence local farming systems and productivity.

5.2.1.1: Water Quality and Domestic Water Infrastructure

The ecological status of water is a classification scheme used by the Environmental Protection Agency (EPA) to record Ireland's performance in terms of the EU Water Framework Directive. It is based on a benchmark of 'high' status, which the EPA describes as the biological, chemical and morphological conditions associated with no or very low human pressure. 'Good' status represents a slight deviation, 'moderate' is moderate deviation, and so on. It encompasses an assessment of different quality elements, including chemistry, macroinvertebrates, plants, fish and hydromorphology. Carried out across 2,300 water monitoring stations in the State every three years, testing sites in the KerryLIFE area include five along the Caragh and Blackwater rivers.[20]

The data reveal variable water quality across the KerryLIFE area (Figure 5.7). Overall, water quality in this wet, upland landscape has declined over the second decade of the millennium and the monitoring data point to land management practices and human waste management as some of the main pressures (EPA, 2019).[21]

Living in rural areas entails most householders having to secure their own freshwater supplies and manage their wastewater treatment too. These characteristics are relevant when considering how to engage rural populations in projects that address environmental issues, especially those related to water quality.

[17] From: https://www.catchments.ie/data/#/catchment/22?_k=pmkli4, accessed 30/09/2020.
[18] The EDs are Cloon, Curraghbeg, Derriana, Lickeen and Loughbrin.
[19] CoORdinated INformation on the Environment or CORINE is pan-European spatial data collected approximately every six years. It reveals the biophysical characteristics of the earth surface in terms of its landcover classified by both natural and artificial land uses. These spatial data are generalised at a resolution of 25ha.
[20] Caragh – footbridge downstream of Owenroe River confluence, Blackstones Bridge and 1.2km upstream of Caragh Bridge; Blackwater – Gearha Bridge and southwest of Old Dromore House.
[21] Declines were recorded between the monitoring periods of 2010-15 and 2013-18.

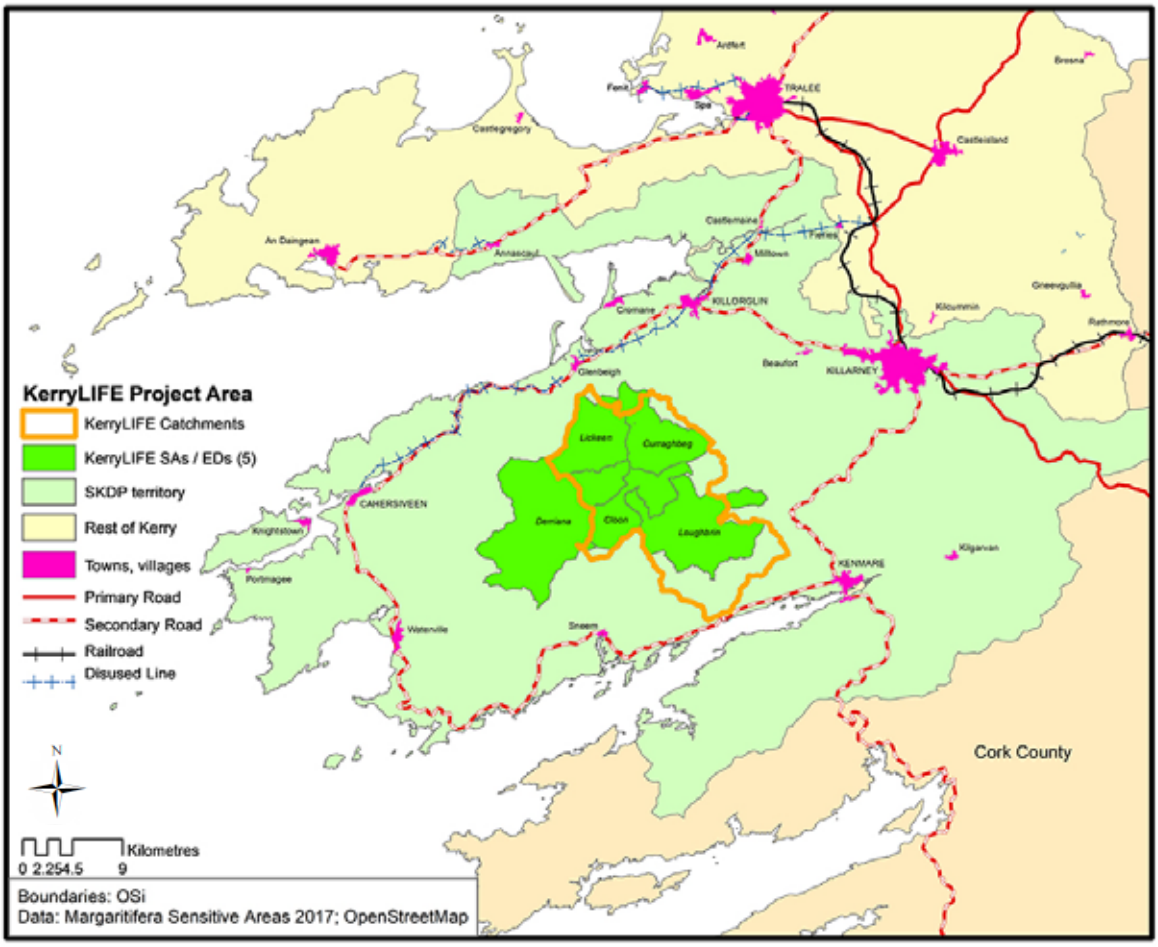


***Figure 5.2**: KerryLIFE Project Area.*

***Figure 5.3**: Topography of the Iveragh peninsula. Source: https://www.google.com/maps.*

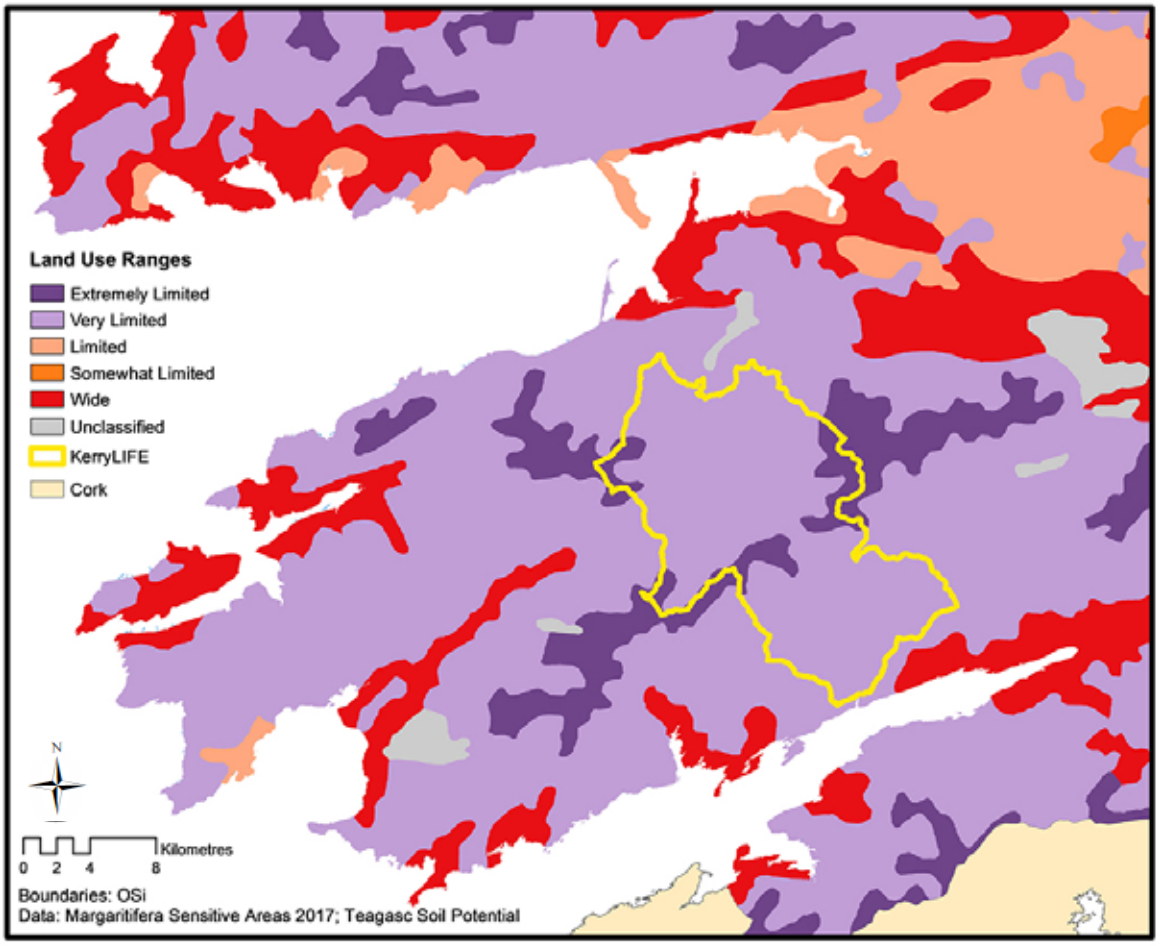


***Figure 5.4**: Land use potential on the Iveragh peninsula.*

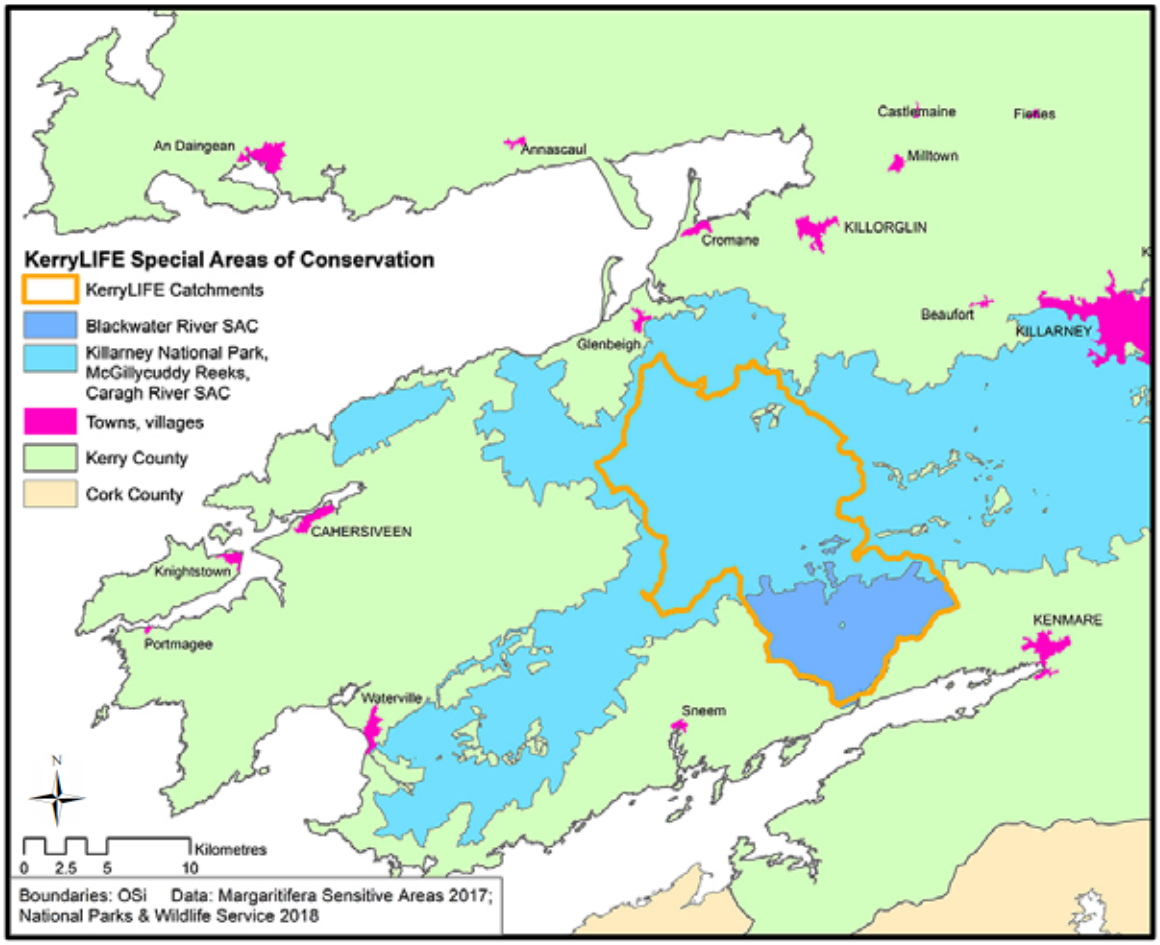


***Figure 5.5**: KerryLIFE's Special Area of Conservation.*

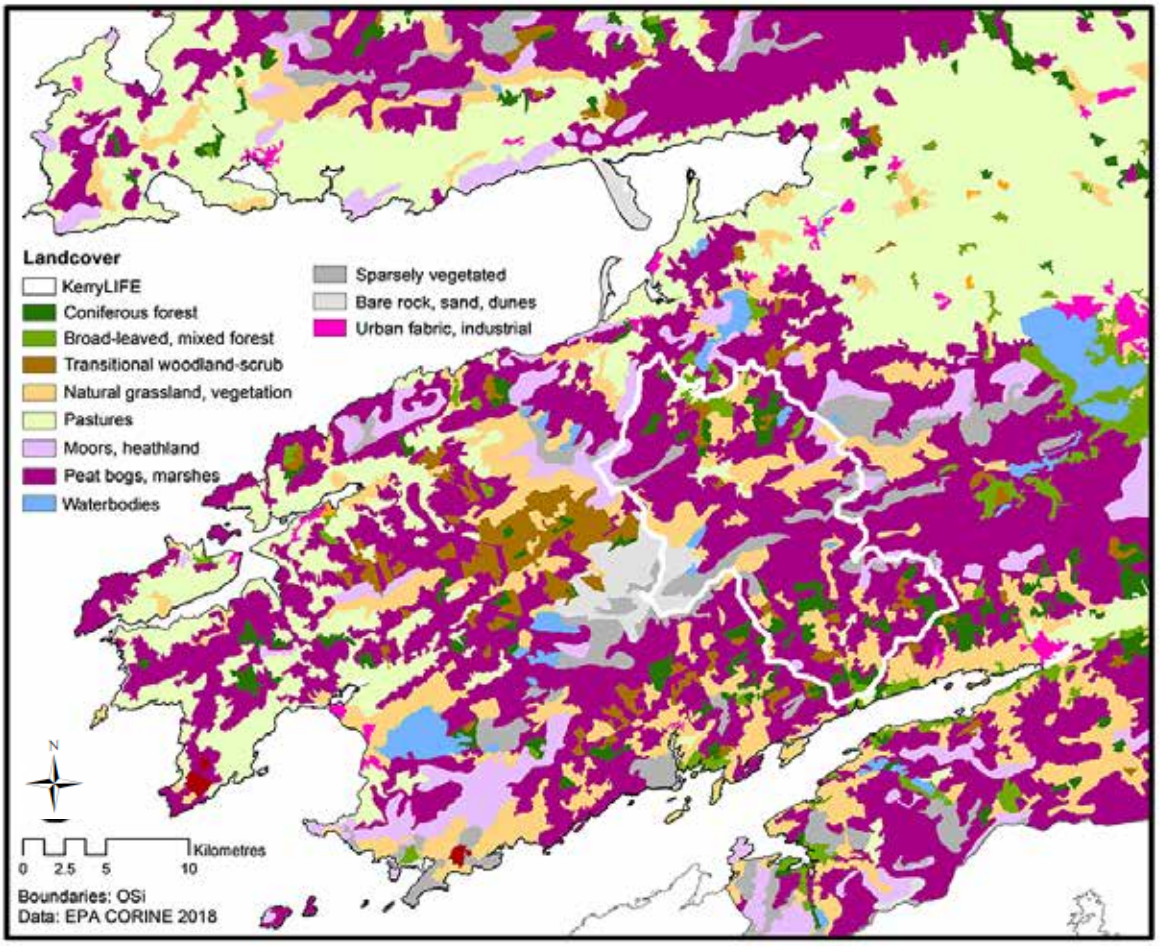


***Figure 5.6**: Landcover and vegetation types.*

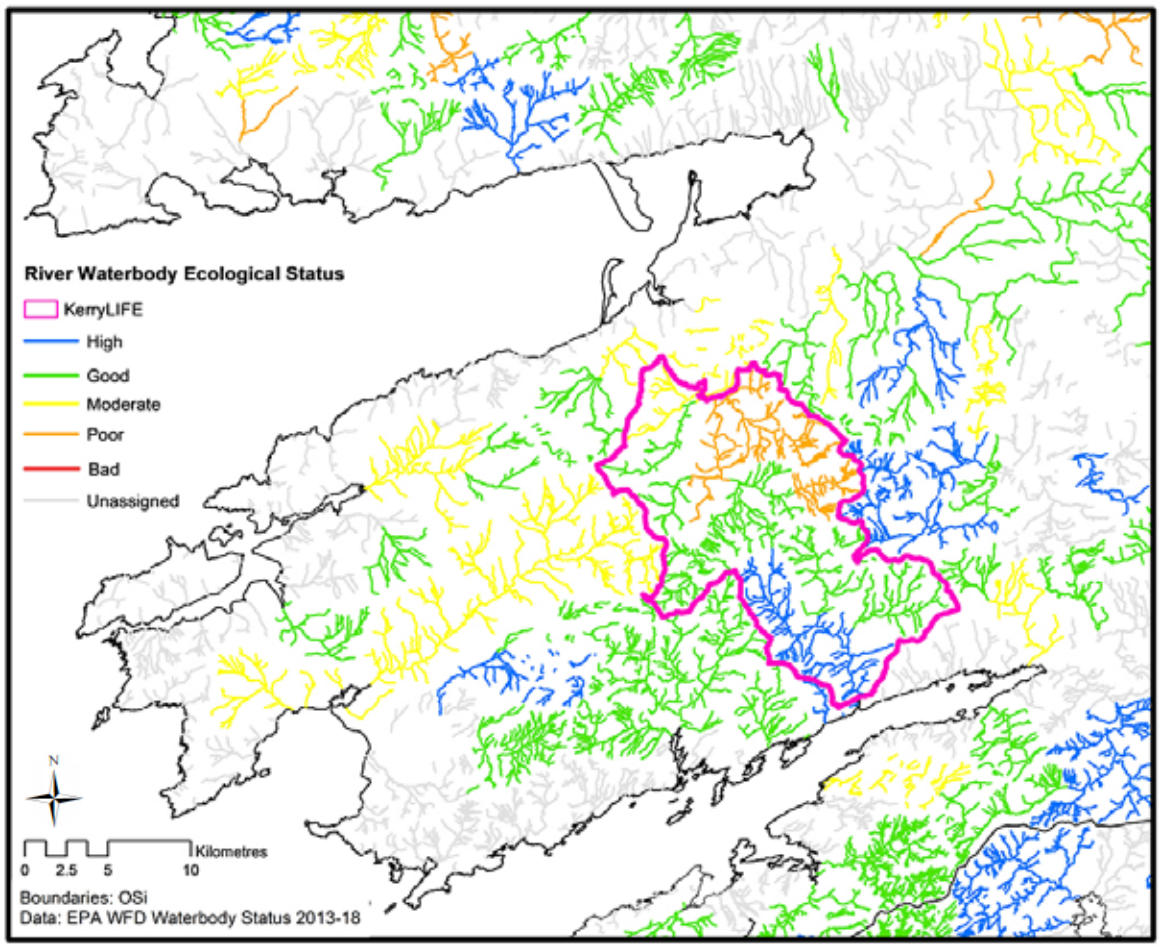


***Figure 5.7**: Surface water quality.*

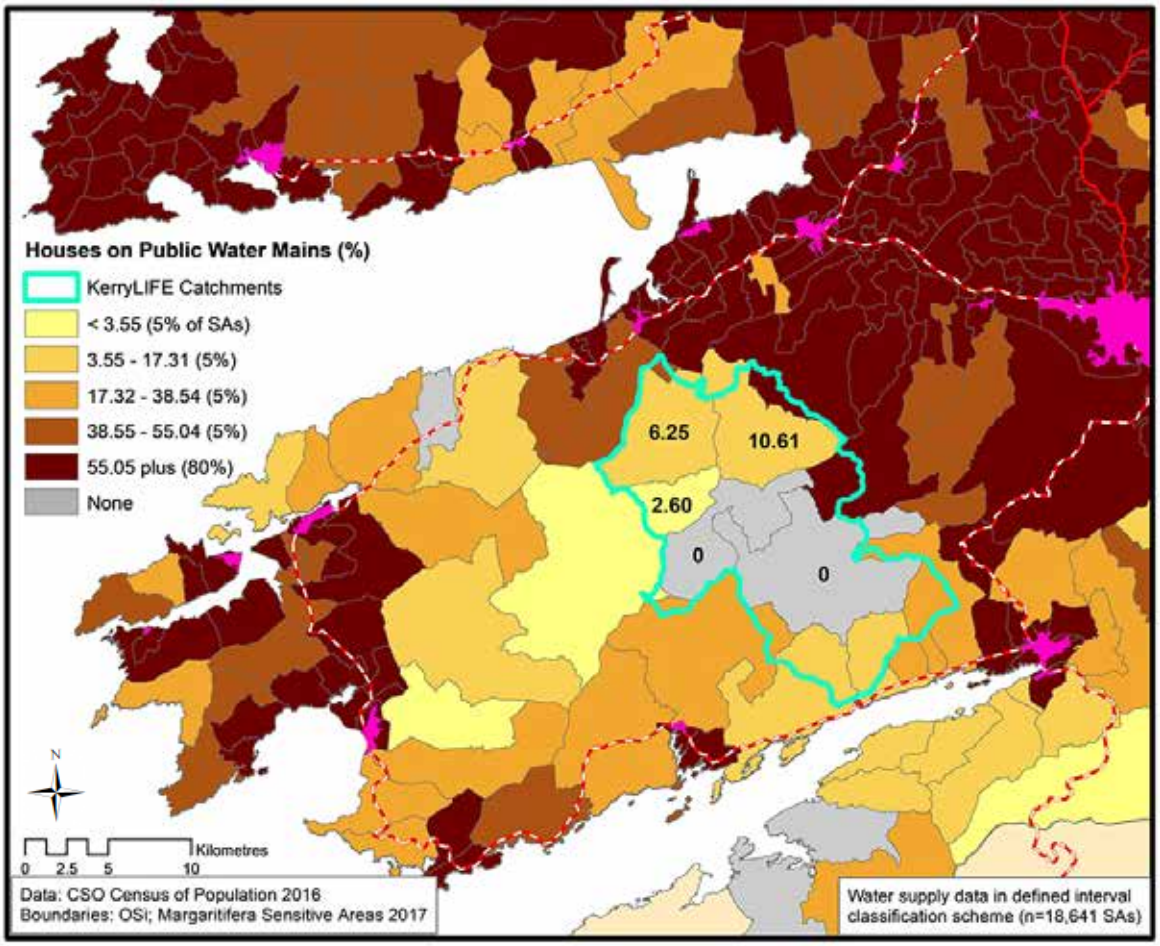


***Figure 5.8**: Houses with a public water supply.*

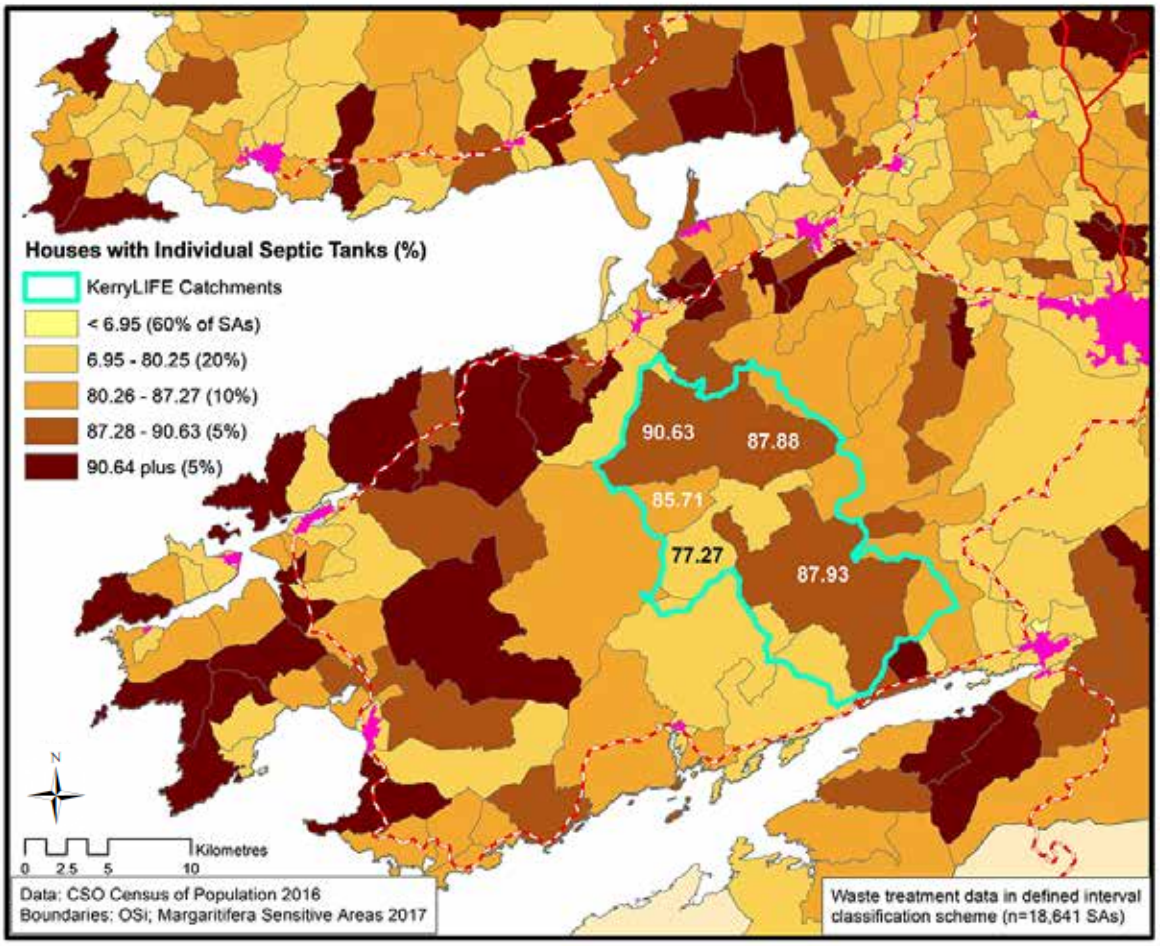


***Figure 5.9**: Houses treating waste with septic tanks.*

While farms and forests, including those not in the KerryLIFE project, are key constituents of its resource systems and related ecosystems, so too are other private lands in the river catchments. The vast majority of homes in the KerryLIFE area do not receive freshwater from a public supply (Figure 5.8) while three-quarters or more of households use individual septic tanks to manage their waste (Figure 5.9).

Homeowners drill wells for their own drinking water supply. They are also responsible for maintaining and desludging their waste treatment units with periodic inspections by Kerry County Council. This type of household water supply and waste treatment infrastructure in the region creates very intimate connections between residents and their environment, especially in terms of their drinking water. It also creates connections among residents themselves because shared groundwater supplies, along with surface water supplies that flow from upstream to downstream settlements, mean that neighbours rely on one another to manage their own domestic water and waste infrastructure responsibly. This gives the wider community a stake in KerryLIFE actions to improve water quality in the area.

5.2.2: Socio-cultural and Economic Settings of KerryLIFE SES

The next section turns to other key elements in KerryLIFE's social-ecological system, namely the local and regional socio-cultural and economic context in which KerryLIFE farmers and other community stakeholders live and work. It explores patterns of human settlement and economic activities in the KerryLIFE project area and its wider region to aid understanding of the factors impacting on the territory.

5.2.2.1: A Snapshot of Cultural History

The KerryLIFE area has been lived in for millennia (Crowley and Sheehan, 2009; Kramm *et al.*, 2010). This is evidenced by its range of archaeological monuments extending back through the late medieval Gaelic period (e.g. ringfort farmsteads), early medieval (e.g. Ogham stone marked with the Celtic tree alphabet) and early Christian (e.g. 'leacht' religious markers) to the bronze age (evidenced by 'fulacht fia' cooking mounds and prehistoric rock art) and megalithic period (e.g. standing stones to denote territorial boundaries) (Figure 5.10).

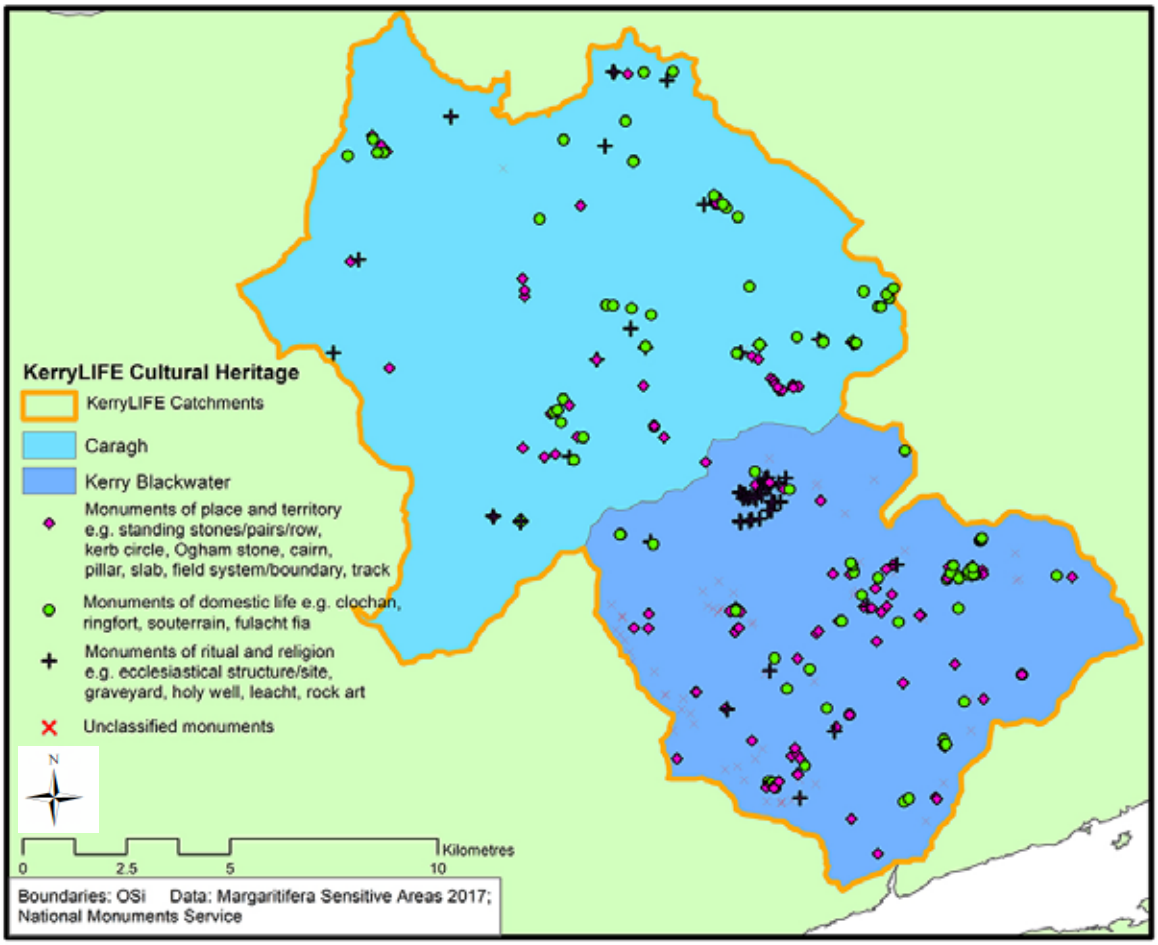


***Figure 5.10**: Cultural heritage.*

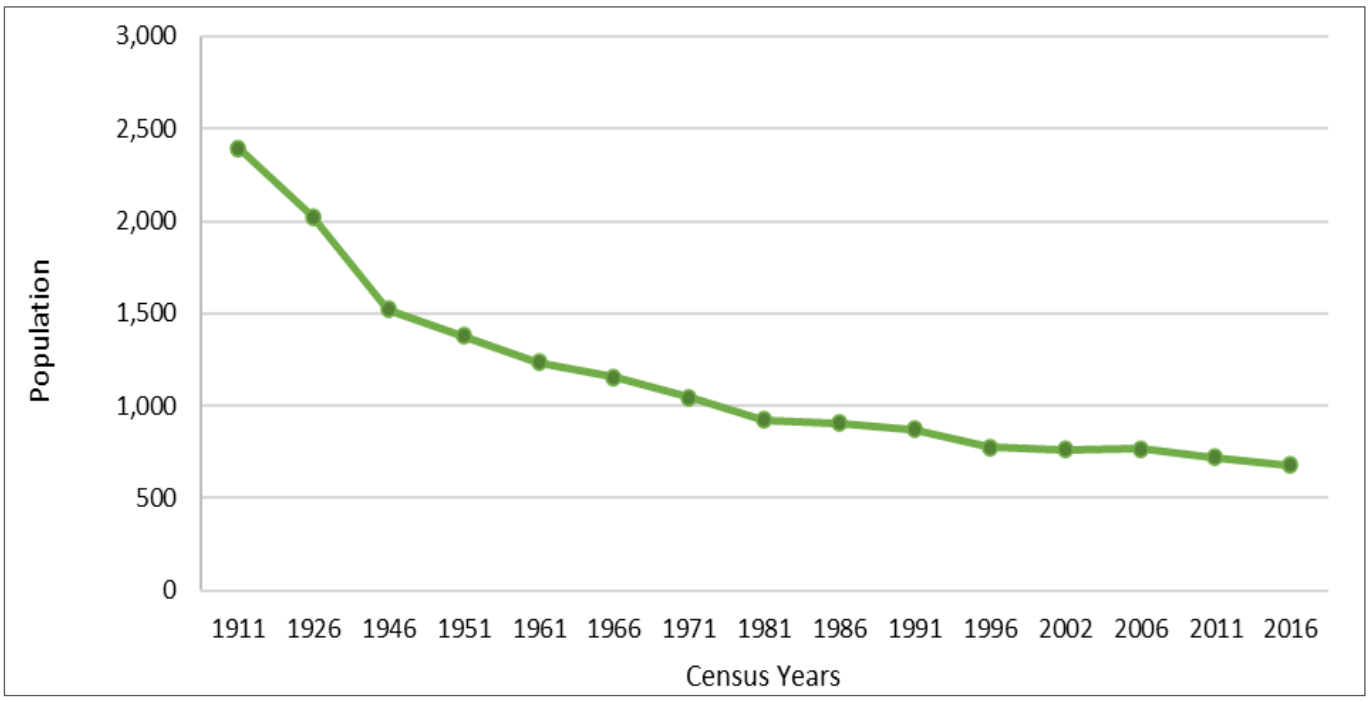


***Figure 5.11**: Population of the KerryLIFE Area, 1911 – 2016.*

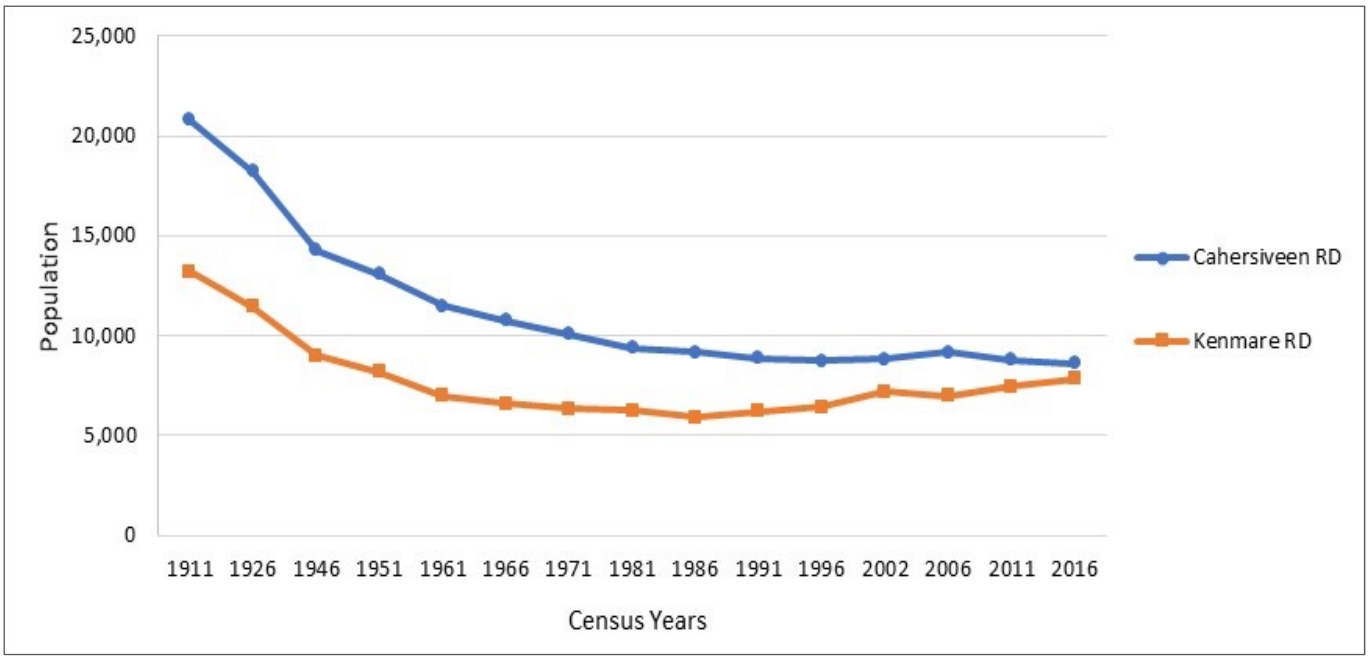


***Figure 5.12**: Population of the Cahersiveen and Kenmare Rural Districts, 1911 – 2016.*

Thus, in spite of the challenging biophysical conditions outlined earlier, indigenous people have lived in this landscape, and been sustained by it, for as much as six thousand years (e.g. Guidera, 2004). This indicates that people in the local communities of the Caragh and Blackwater river catchments are contemporary farmers and settlers in a long line of generations and they embody deep human-landscape connections on the western edge of Europe. The next set of maps provide a snapshot of the current population.

While the local population has demonstrated resilience, over time, it has experienced considerable decline since the mid nineteenth century. As Figure 5.11 shows, the population of the KerryLIFE catchment area – based on the five EDs of Cloon, Curraghbeg, Derriana, Lickeen and Loughbrin – has declined by 67% since 1926. Over the same period of time, the population of County Kerry (as a whole) declined up to the early 1970s, but has since recovered to the level at which it stood in 1926. Meanwhile, the population of the State increased by fifty percent (Walsh and Ó Caoimh, 2020).

The area's demographic decline is indicative of a wider downward trajectory across the Iveragh peninsula, as Figure 5.12 shows.

Population decline is a significant cause of concern to the people of Iveragh (O'Keeffe, 2015), and was one of the motivating factors behind the establishment of *Tascfhórsa Uíbh Ráthaigh* – an inter-agency taskforce charged with overseeing the implementation of a five-year strategic plan for *Gaeltacht Uíbh Ráthaigh – the communities immediately west of Glencar (from* Bealach Oisín to Baile an Sceilg and Cathair Dónall).

5.2.2.2: Population Structure and Attributes

Rural areas such as inland Iveragh tend to be characterised by the outmigration of young adults, leaving behind an ageing population (O'Keeffe and Crowley, 2019). This migration pattern is captured in the population structure of the KerryLIFE area, where there are below-average proportions of adults in their twenties (Figure 5.13), combined with generally below-average youth dependency (Figure 5.14) and above-average elderly dependency ratios (Figure 5.15). These kind of population movements, dictated by economic realities, predominantly affect community renewal and vibrancy. For example, one-third of households across the Blackwater catchment and parts of the Caragh catchment are occupied by just one person (Figure 5.16). These above-average rates of lone occupancy in inland rural communities like the Iveragh peninsula may be indicative of bachelor farmers without obvious successors and elderly residents, both of whom face a high risk of isolation. While some local people leave and are replaced by those attracted to the area for a range of reasons, the resident population tends to be less multi-national than those of more urban or coastal areas. Consequently, people in the KerryLIFE area and other inland communities on the Iveragh peninsula of South Kerry are much more likely to have been born in Ireland or the United Kingdom (Figure 5.17). This is characteristic of many upland areas across the island.

A brief assessment of housing stock in the region confirms that the KerryLIFE area is characterised by below-average levels of new home building (Figure 5.18) and very high levels of empty or derelict and otherwise uninhabitable dwellings (in the top quintile of values in the State, Figure 5.19). This corresponds to a place that is losing young working adults to areas with more job opportunities, where elderly residents who have relocated to a nursing home in town leave behind empty houses, and where inheritors of bachelor-run farms rent out the land while the farmhouse lies empty. This is not the 'living countryside' of the 1996 Cork Declaration's vision for sustainable rural development (European Commission, 1997).

The consultations undertaken as part of this review noted significant local concerns regarding a perceived restrictive approach to rural housing. These concerns are reflected in the data, which, as the following graph (Figure 5.20) shows, indicate a relative lack of house-building in the KerryLIFE area over the past twenty years. Over half the housing stock in the KerryLIFE EDs dates from before 1981. Only one-fifth was constructed between 2002 and 2016, while the corresponding figure in County Kerry is 30%.

Reflecting the area's rurality and older population structure, formal educational attainment levels tend to be below average and characterised by early school-leaving (Figure 5.21) and low levels of college education among residents (Figure 5.22). While this indicates comparatively low human capital in terms of institution-based knowledge, it reflects the area's ageing population and the fact that free second-level schooling has only been provided in Ireland since 1967, while more affordable third-level education was introduced in 1996. What census data does not measure is the tacit knowledge of older generations and other local residents that comes from growing up, raising families and making livelihoods in the challenging socio-economic and environmental conditions of such a rural locale. It is that local, tacit knowledge that has informed most of human settlement and farming in the KerryLIFE project area over millennia. Such social history and collective memory include field-level knowledge of farmland, experience-based understanding of land carrying capacity and life-long memories of climatic patterns from flooding to drought. It also includes the human and social capital that comes from more intimate living and working relationships with nature and other members of one's community characteristic of rural areas, and the need for self-sufficiency and problem-solving at community level that comes from living in remote areas in particular, at a distance from public services.

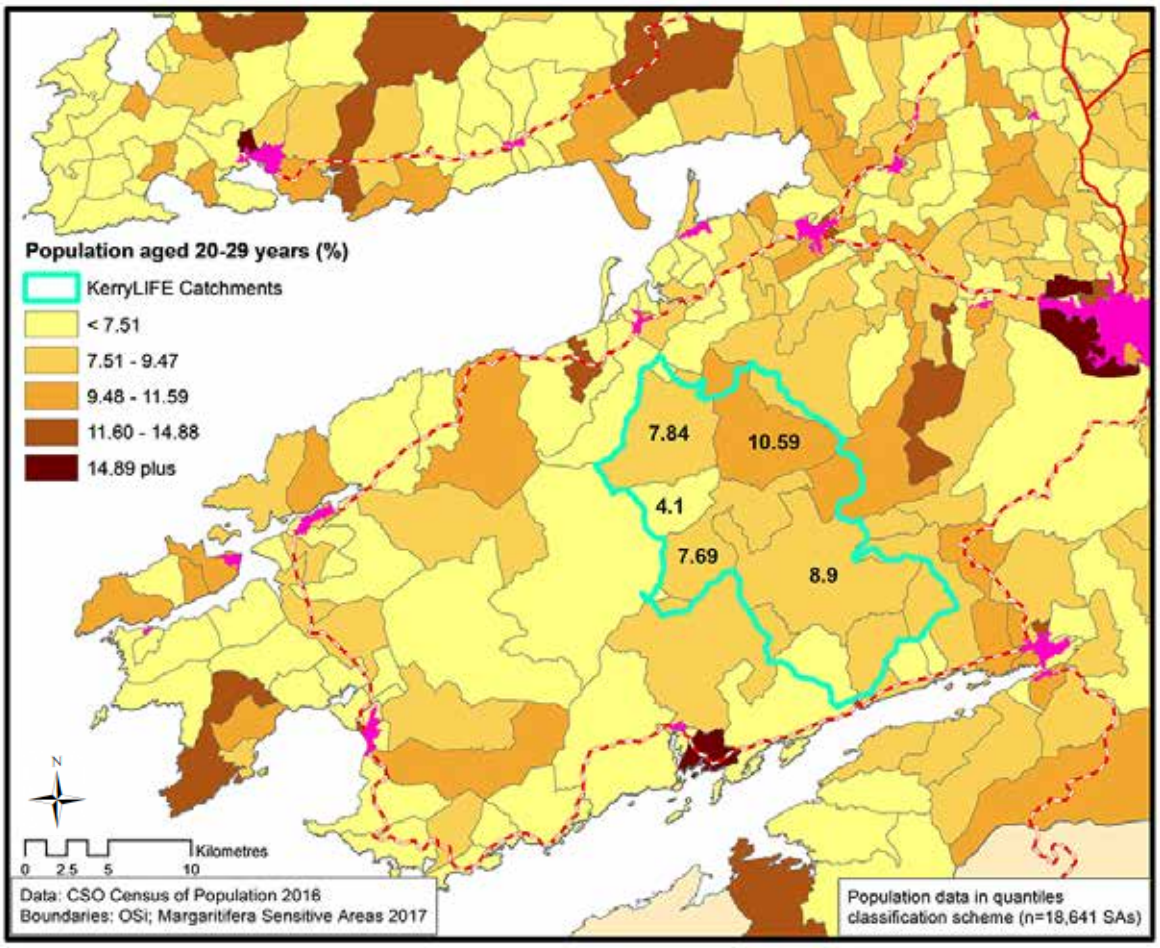


***Figure 5.13**: Young adult population.*

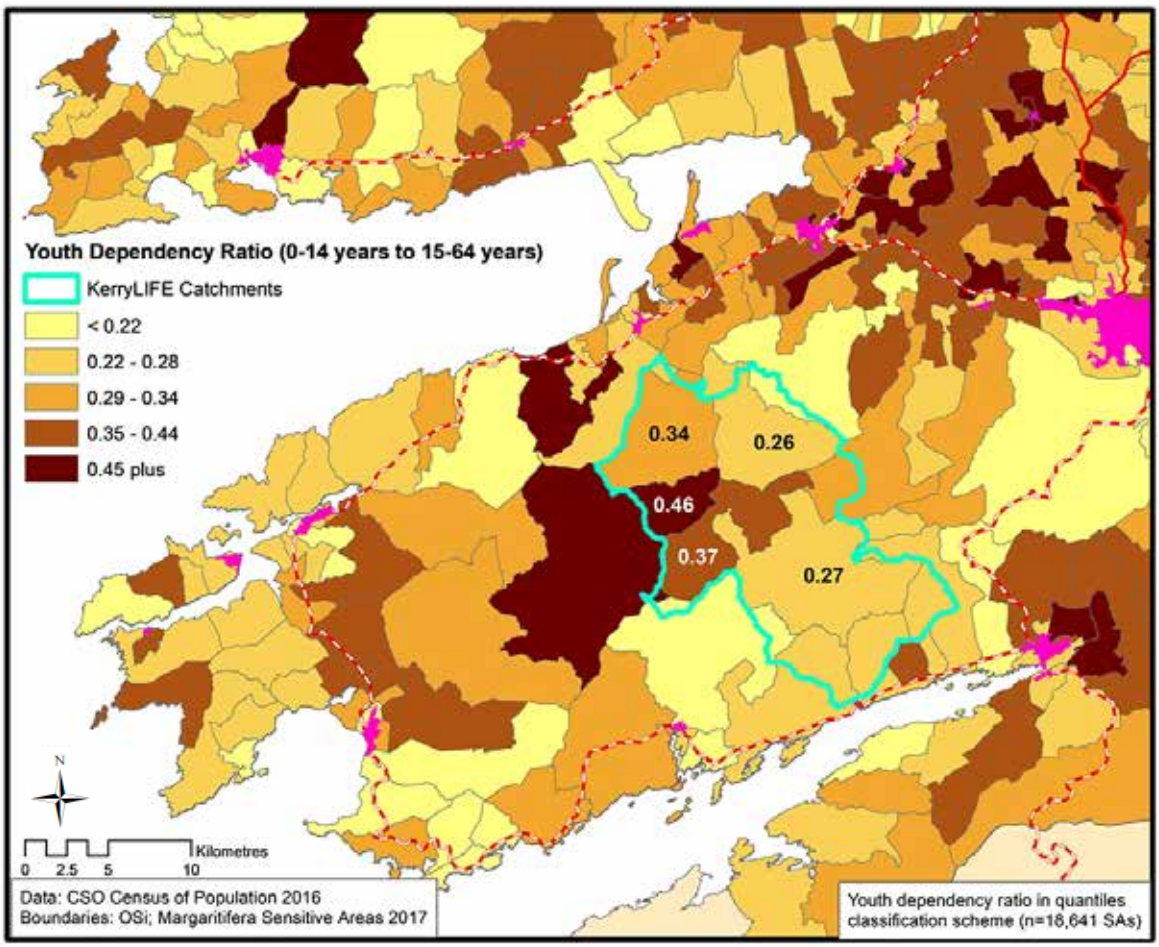


***Figure 5.14**: Youth dependency.*

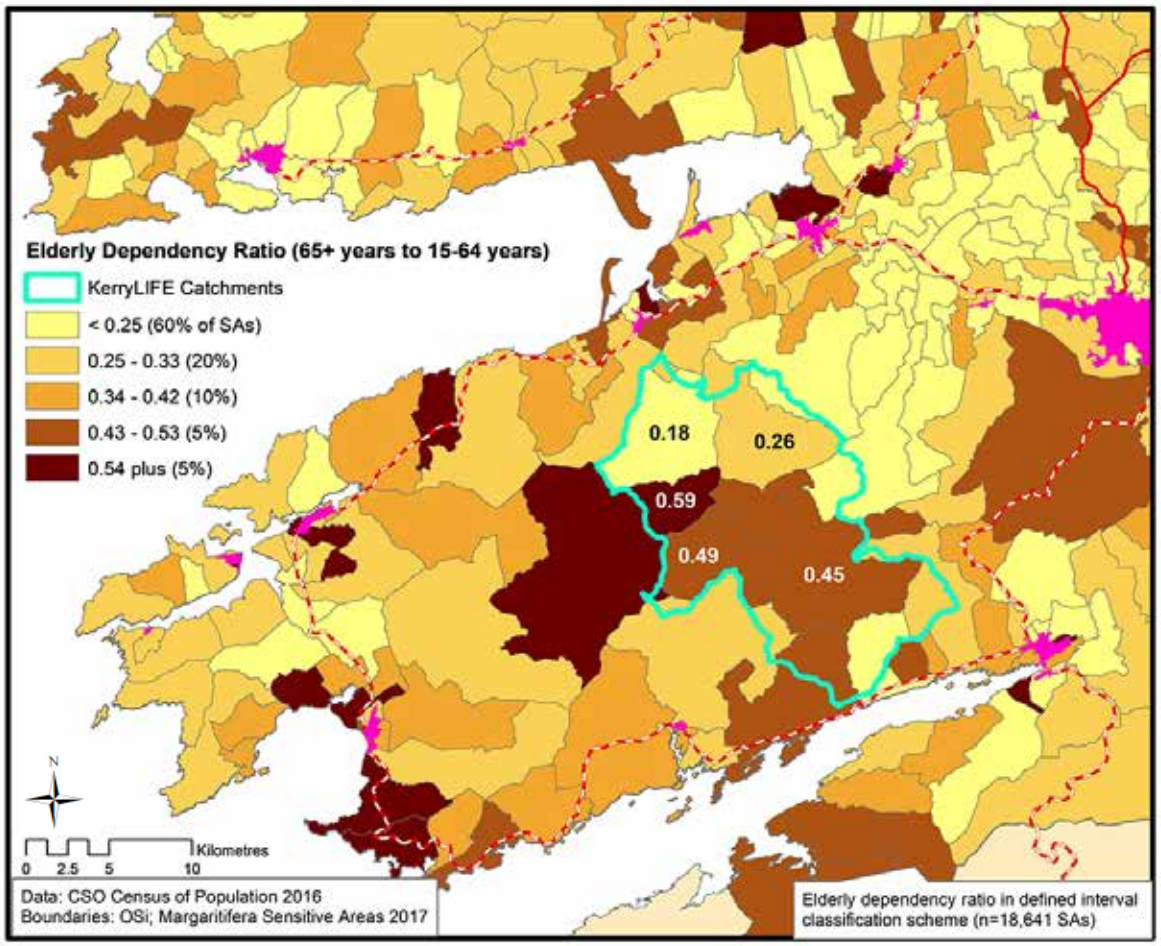


***Figure 5.15**: Elderly dependency.*

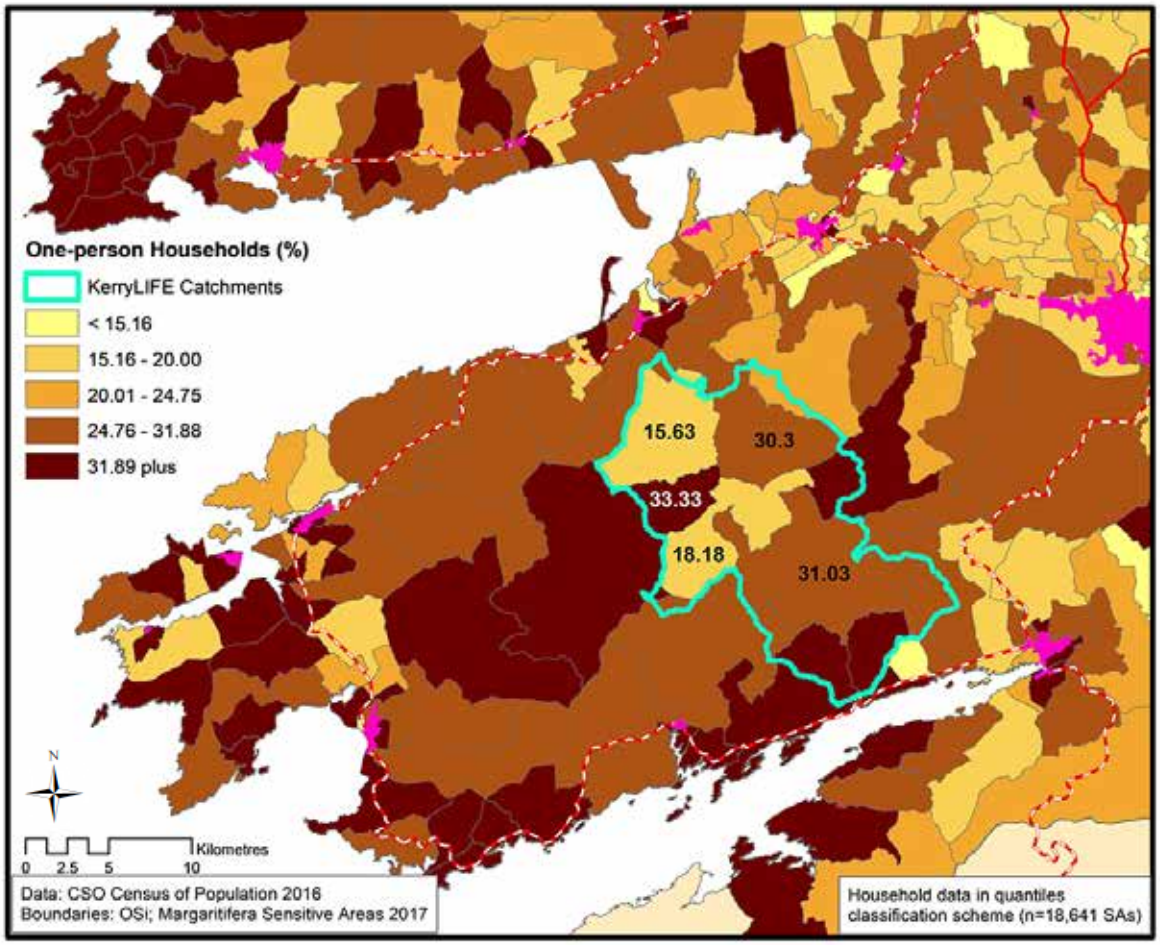


***Figure 5.16**: Lone-occupant households.*

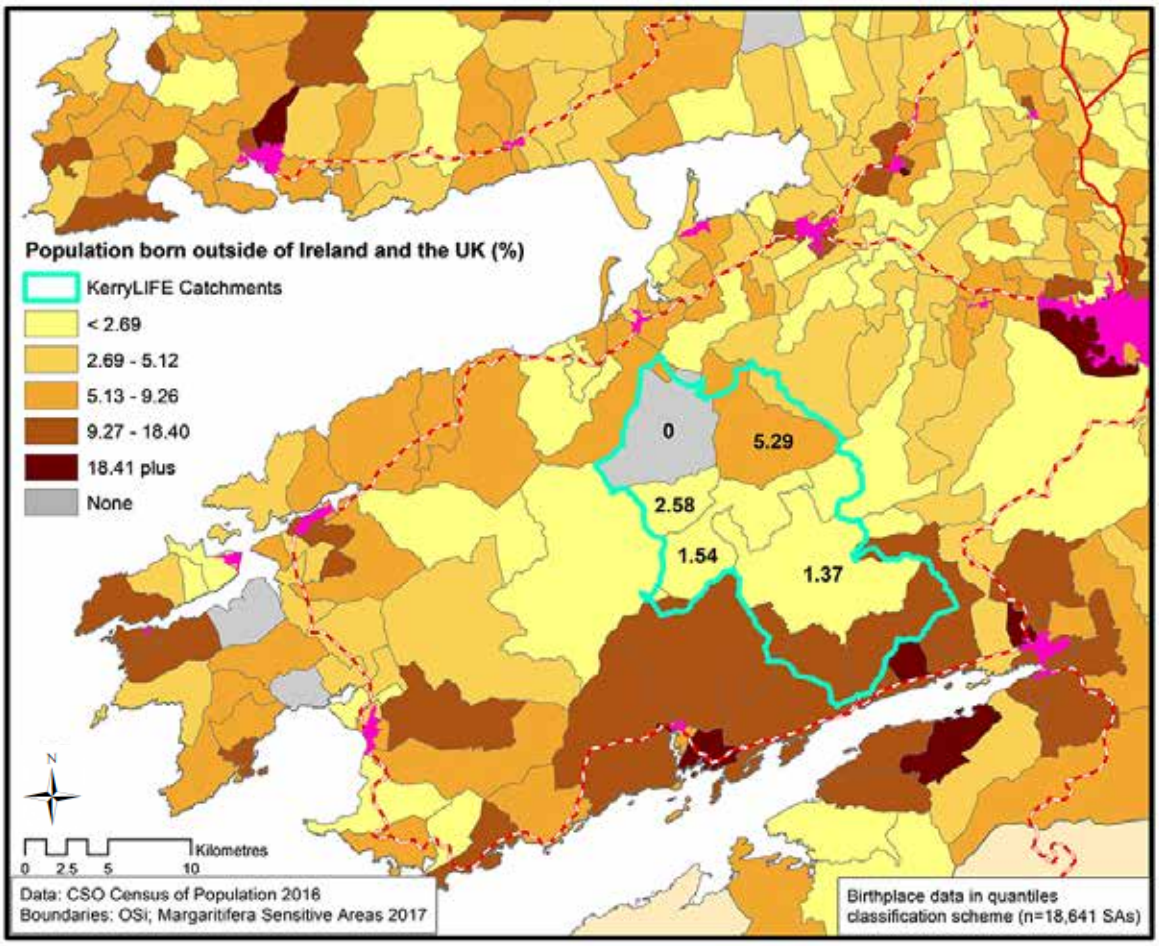


***Figure 5.17**: Residents outside of Ireland and UK.*

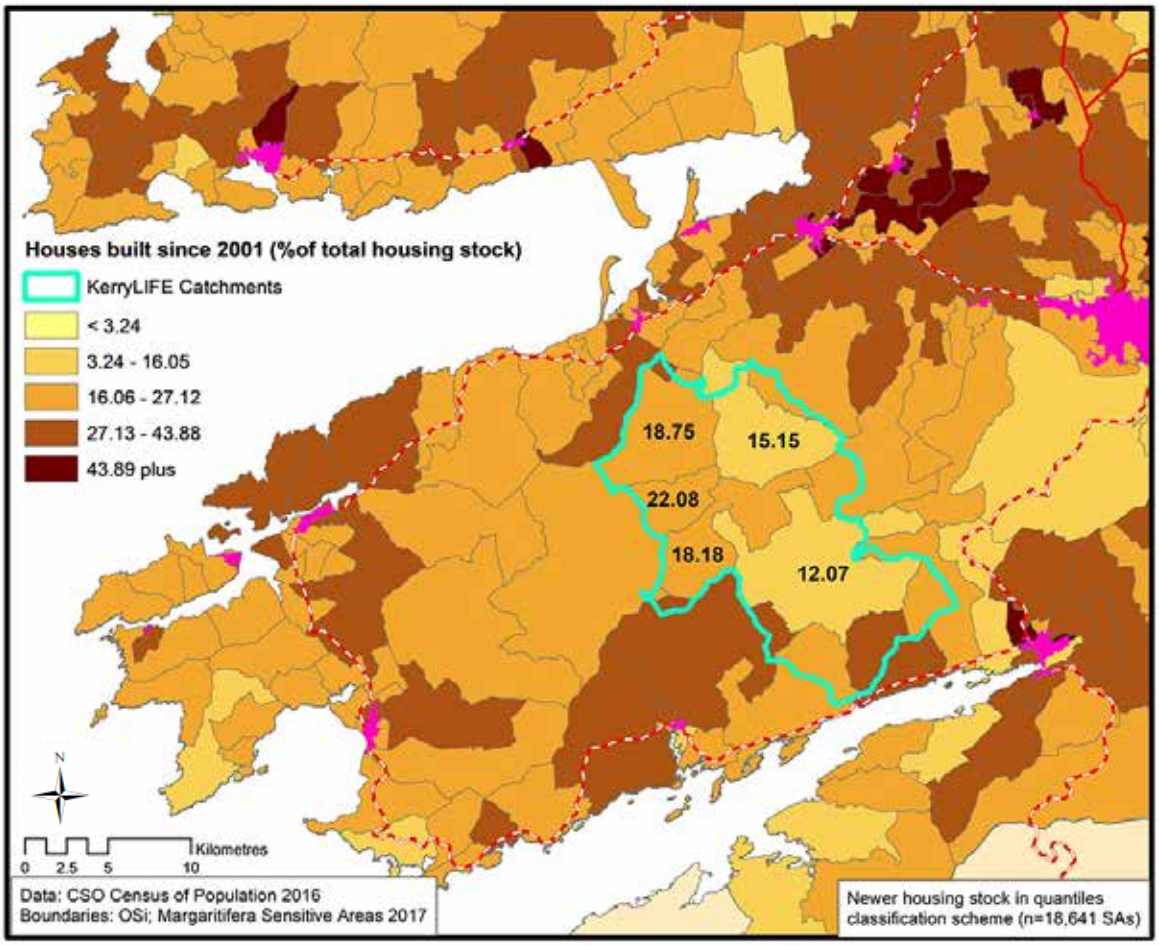


***Figure 5.18**: Recent house building activity.*

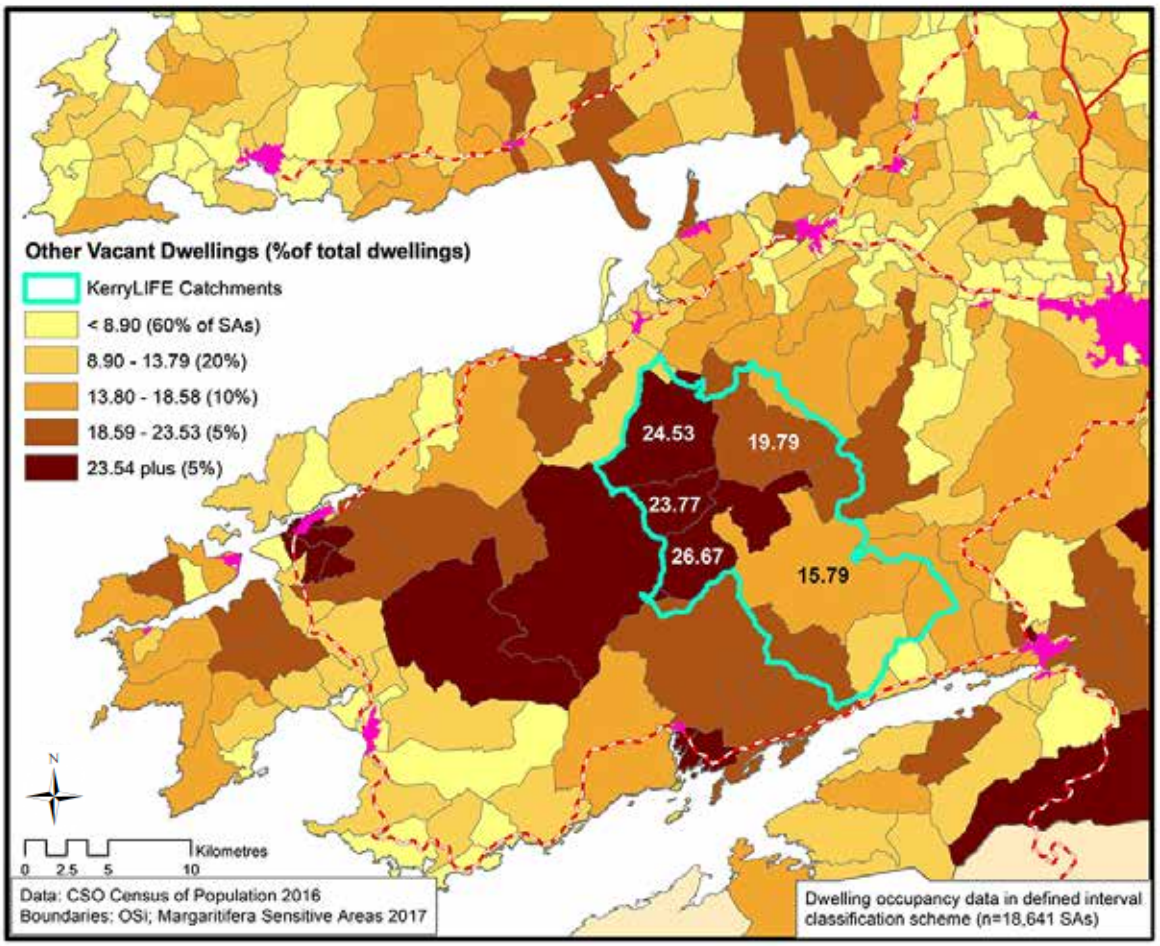


***Figure 5.19**: Empty dwellings (excluding holiday homes or temporarily vacated residences).*

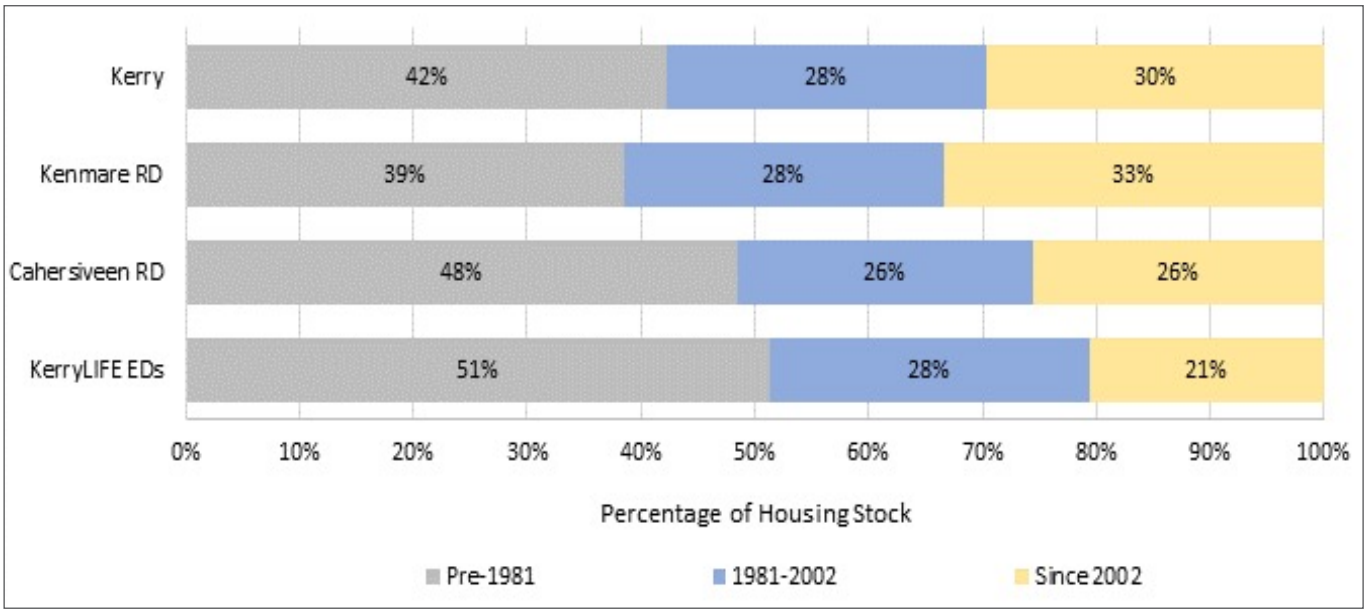


***Figure 5.20**: Percentage of houses built during defined periods, in comparative contexts*

5.2.2.3: Accessibility and Connectivity

Access to nearby urban areas and cities further afield is an important factor in terms of access to services (including secondary and higher-level education) and to employment opportunities. The next two maps show that residents of the KerryLIFE area are much less likely to have a short commute to school, college or work (Figure 5.23) and more likely to have to travel more than an hour (Figure 5.24), compared with their counterparts elsewhere in the country.

In addition, households in the KerryLIFE area are in the lowest 10% in the country for broadband connectivity (Figure 5.25). Therefore, the local population's relatively poor physical accessibility to services and work is compounded by householders' even poorer digital connectivity to the online society and economy.

5.2.2.4: Economic Status and Activities

Turning the focus on the working-age population and its activities, female labour force participation is low across the KerryLIFE area (Figure 5.26) and much of the Iveragh peninsula, especially inland. Rates of less than 50% suggest the persistence of traditional gender roles, where females tend to shoulder more responsibility for caring for family, such as raising children and looking after elderly relatives. The impact of gender-based work division on reducing opportunities for local women in particular is only likely to be compounded by poorer access to services related to the tertiary road infrastructure and poor rates of digital connectivity locally combined with public service contraction in rural areas generally.

The pattern of male labour force participation is mixed with above-average rates in the Caragh catchment (Figure 5.27).

The higher levels of elderly dependency in the Blackwater catchment shown earlier could be drawing working-age males as well as females into caring roles, e.g., bachelor farmers. Unemployment rates are also higher in the northern part of the KerryLIFE area, suggesting that the working-age population there is more actively engaged with the workforce, either in or seeking employment (Figure 5.28).

The primary sector (agriculture, forestry and quarrying / mining) remains a significant employer in the KerryLIFE territory accounting for up to nearly 40% of workers in some areas. This is characteristic of inland parts of the Iveragh peninsula and those further from settlements (Figure 5.29). Values lie in the top 5% of rates nationally, highlighting the continued importance of the sector for local livelihoods. Figure 5.30 bears this out and reveals that farming is the key driver of the primary sector locally with one-third to a half of all households in the territory headed by a farmer or farm worker. Such high levels of farming employment are unexpected based on the low quality of the area's local land resources and it indicates the limited availability of work in more lucrative sectors and the likelihood that at least some farm households may fit the description of 'working poor'.

By comparison, the local workforce's rates of engagement in the secondary and tertiary sectors are generally below average in the KerryLIFE territory, except for areas closer to the coastline (Figure 5.31 and Figure 5.32). Those dependent on jobs associated with the tourism and hospitality sector of nearby Killarney, Kenmare and the Ring of Kerry are more common in the Blackwater catchment (Figure 5.33). Such workers tend to be in jobs that are seasonal or they work on a contract basis as part of this sector's insecure 'gig' economy. Killorglin is a significant industrial base, and firms there provide employment for people in the Caragh catchment.

The graphs (Figures 5.34 and 5.35) illustrate the significance of agricultural employment in the KerryLIFE area, particularly among males.

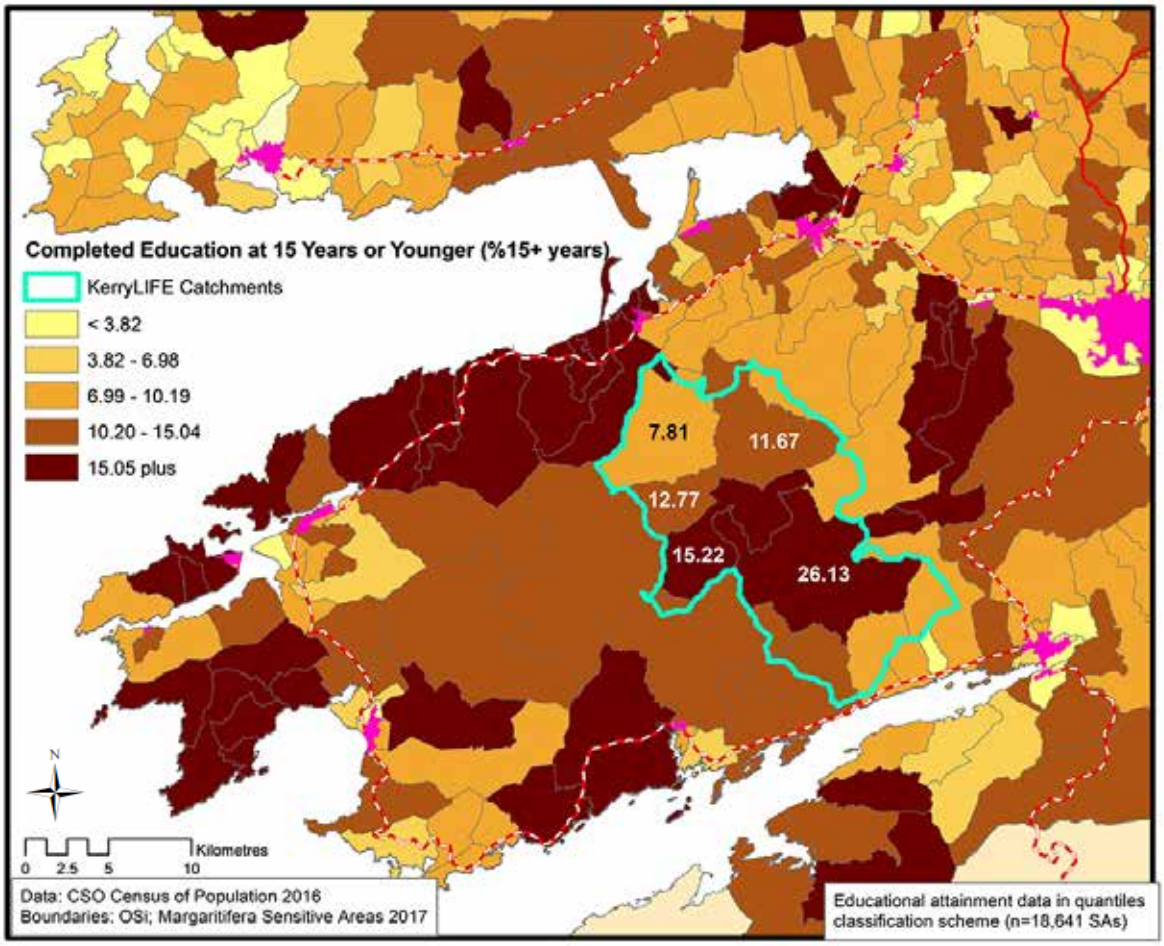


***Figure 5.21**: Early school leaving.*

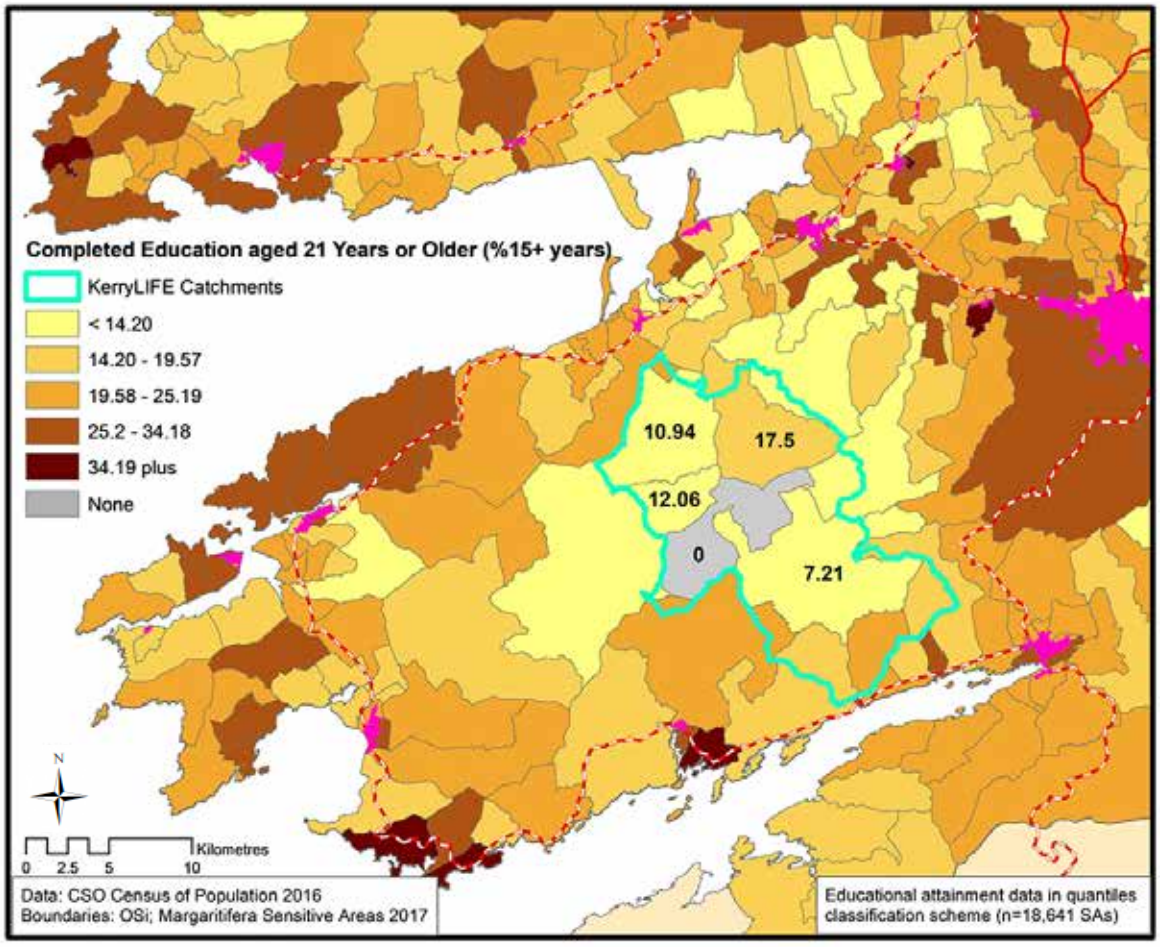


***Figure 5.22**: College education.*

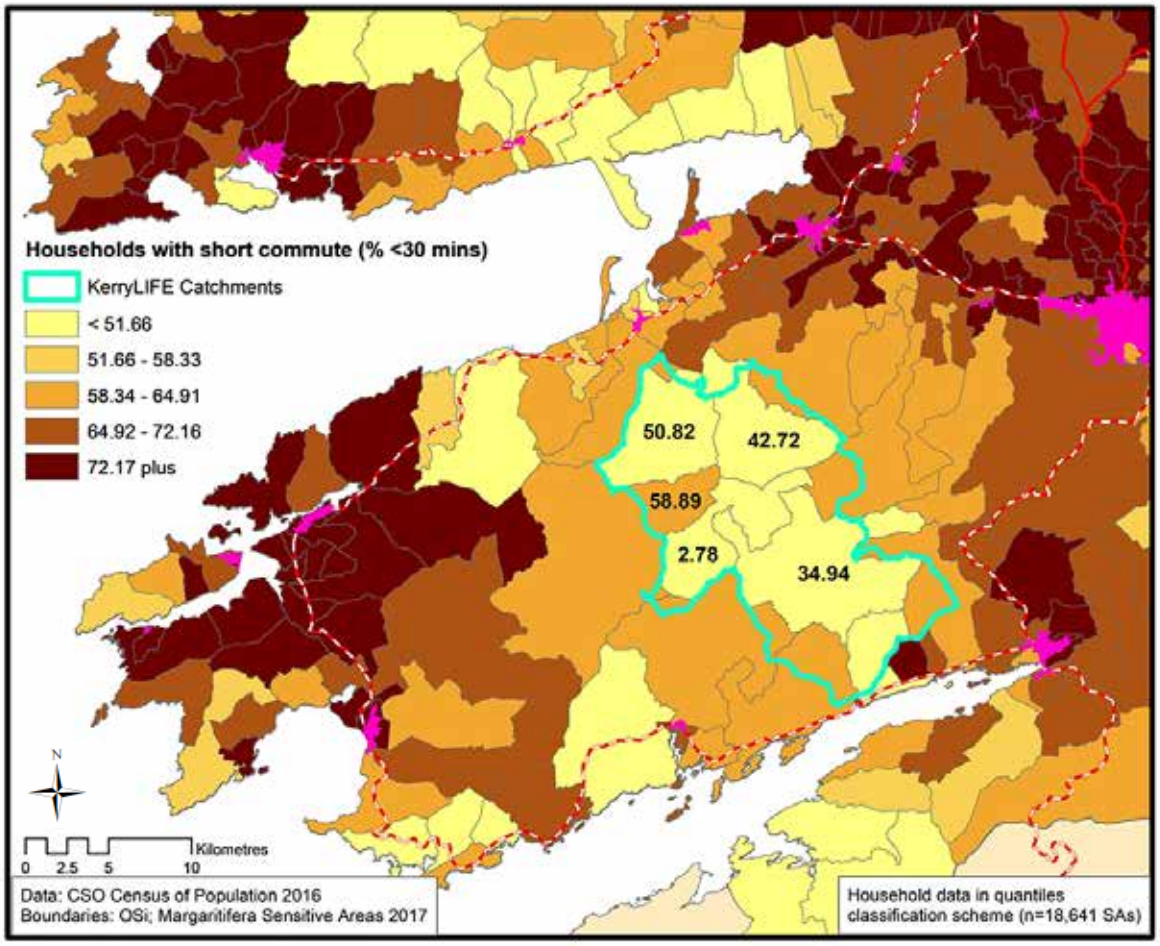


***Figure 5.23**: Short commutes to education and employment.*

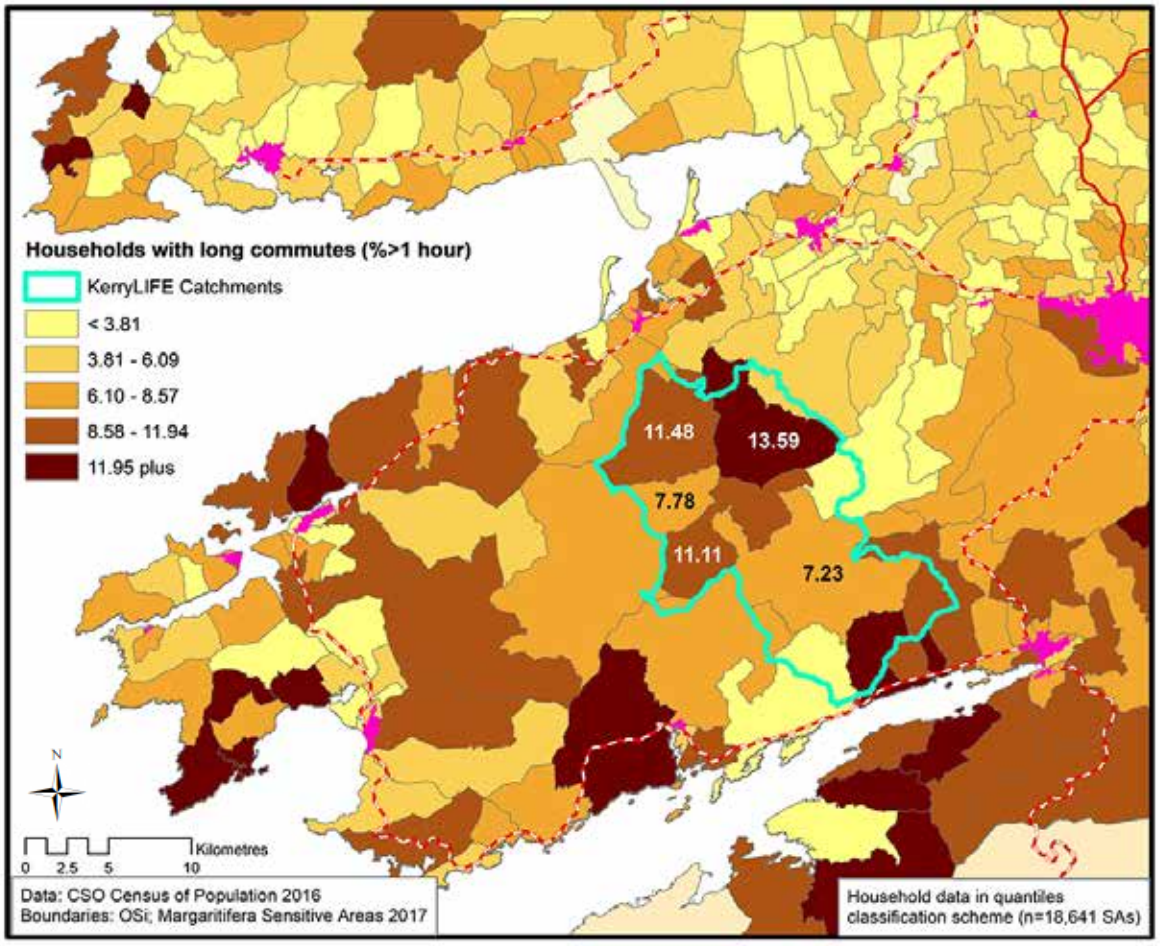


***Figure 5.24**: Long commutes to education and employment.*

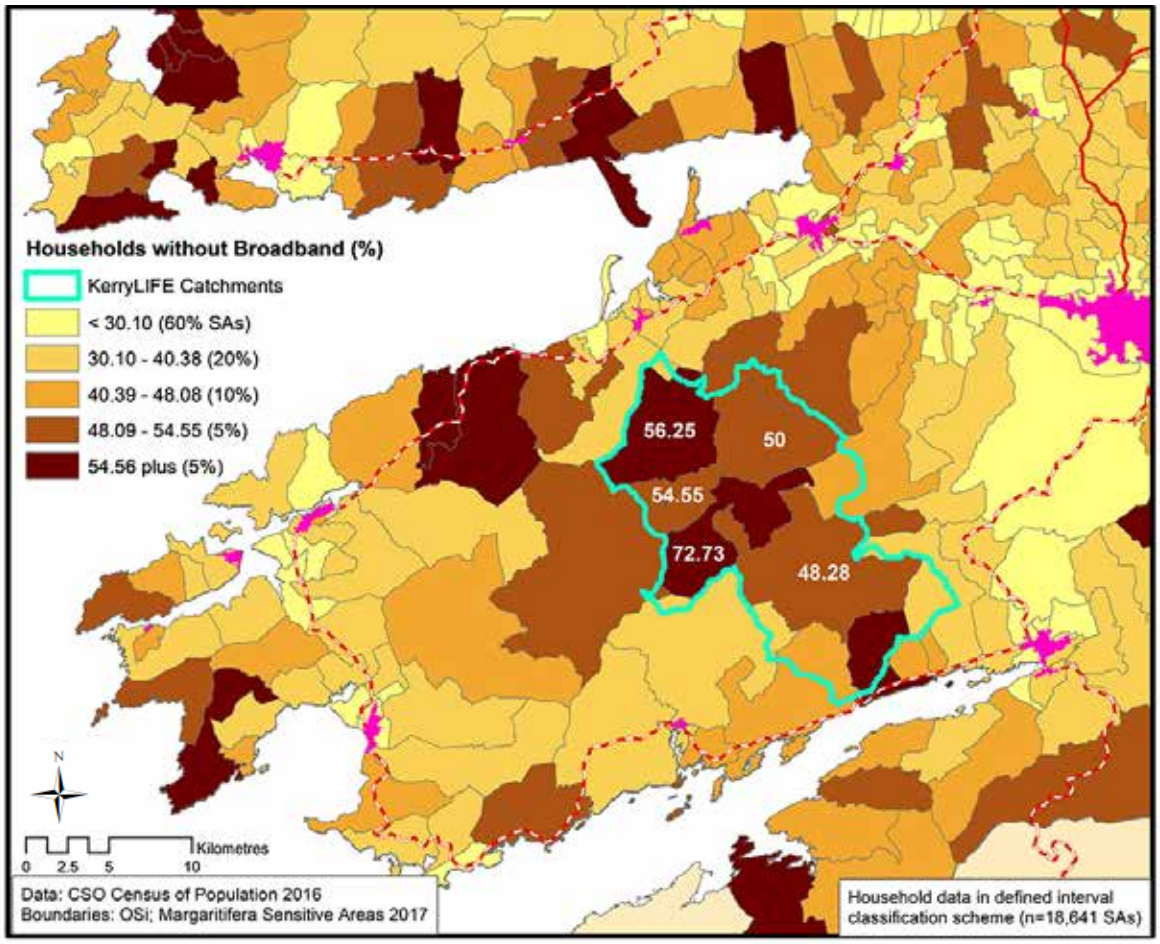


***Figure 5.25**: Houses without broadband.*

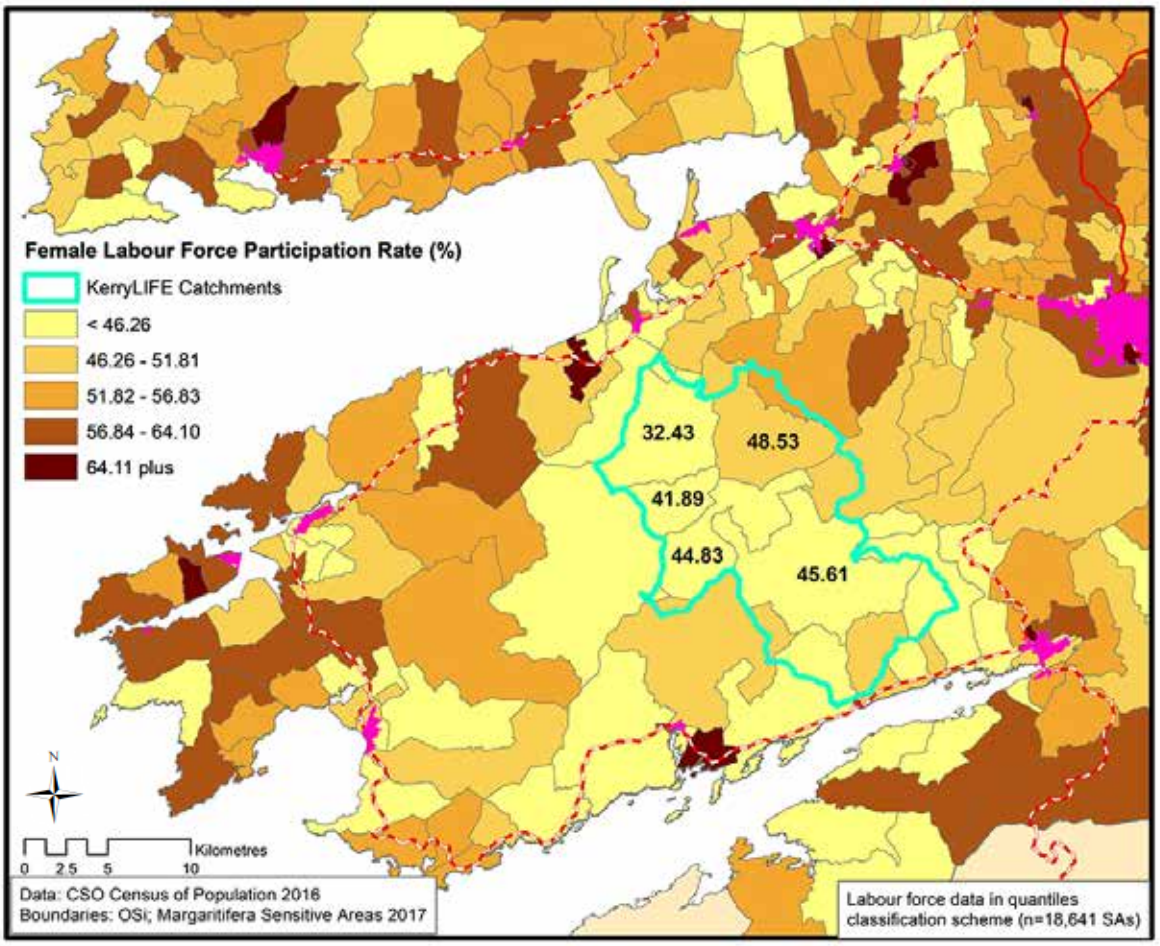


***Figure 5.26**: Females in the labour force.*

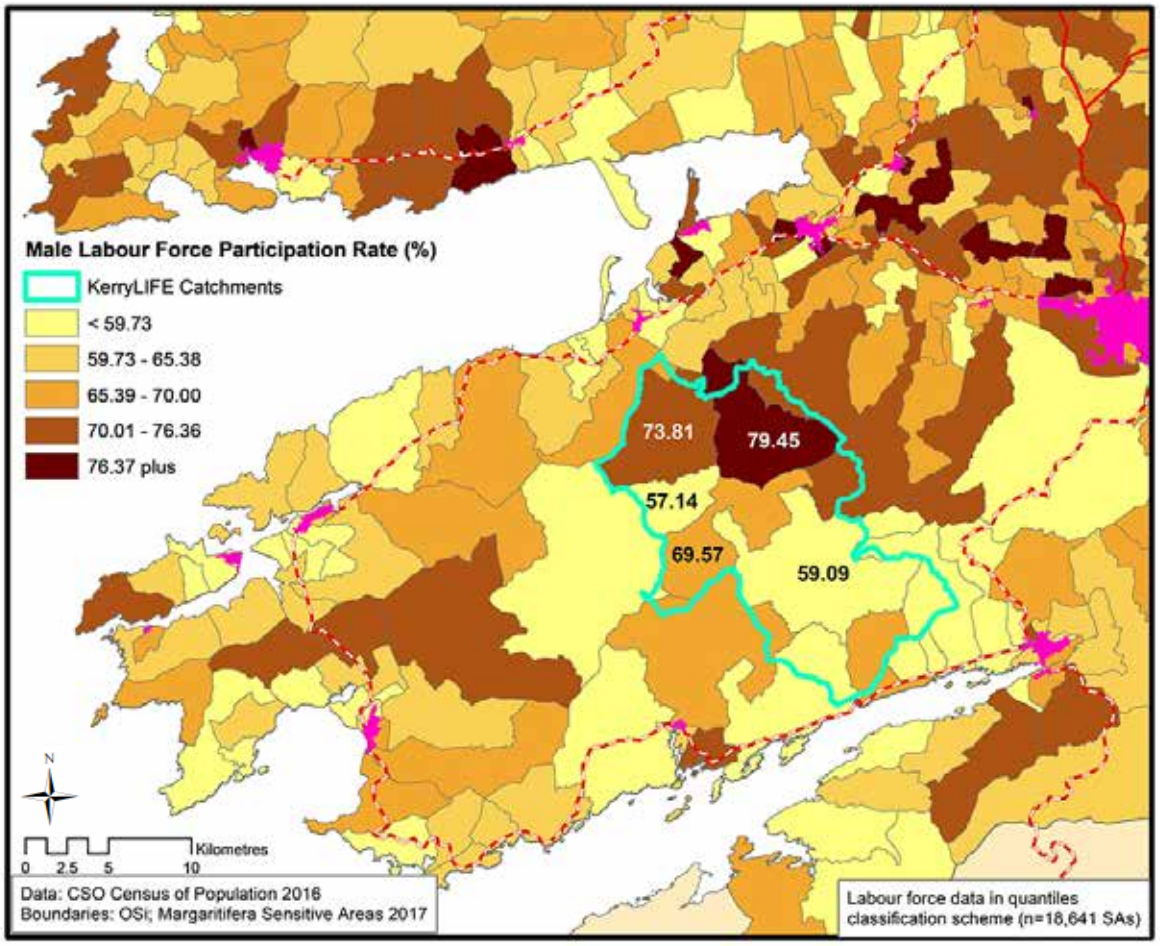


***Figure 5.27**: Males in the labour force*

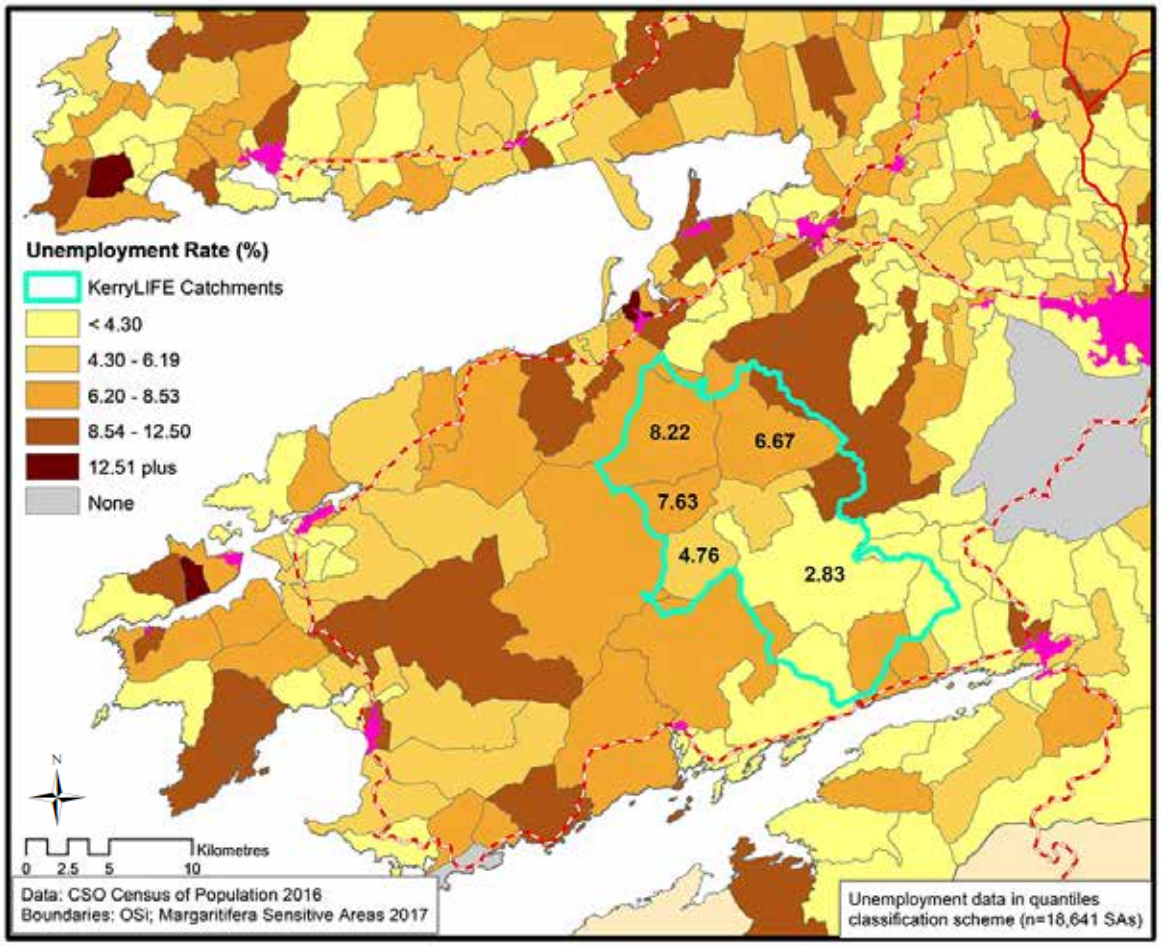


***Figure 5.28**: Job seekers*

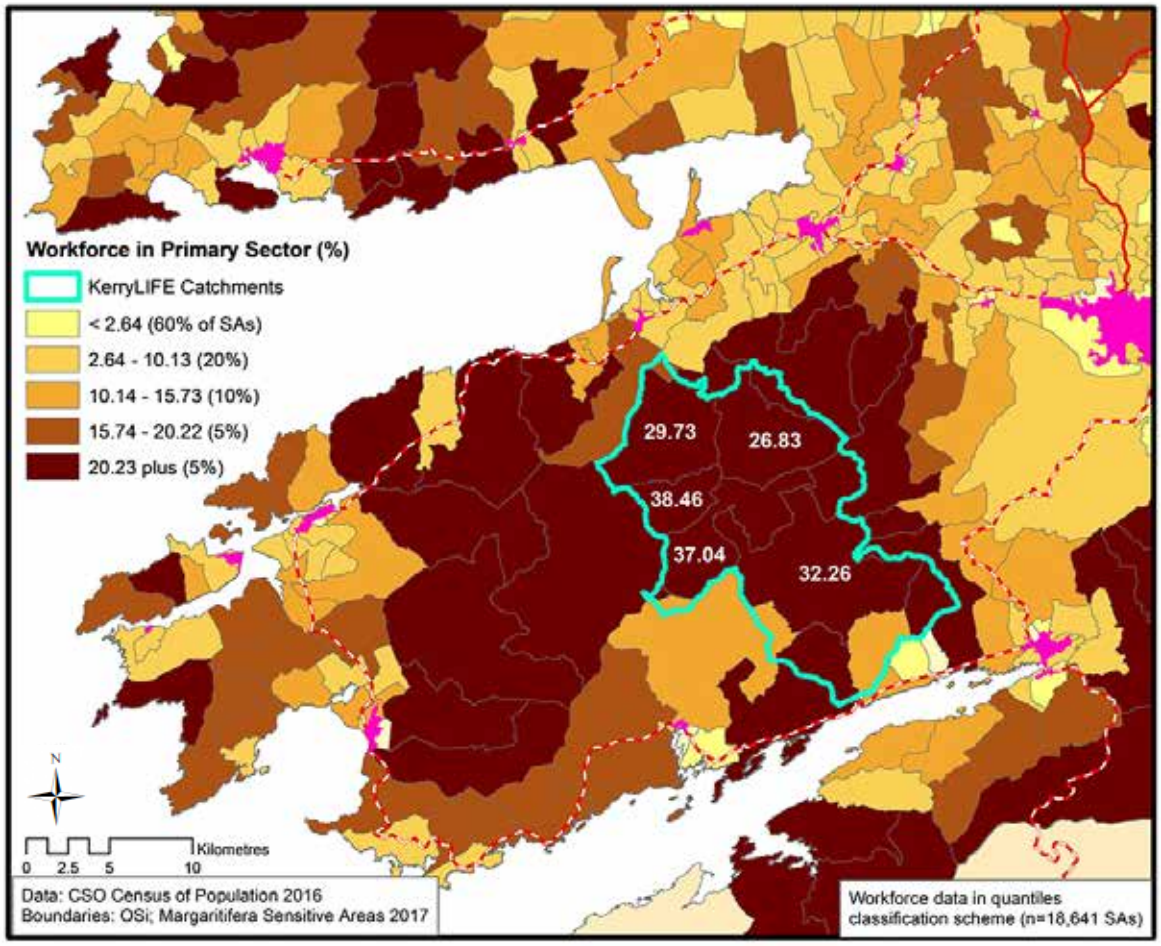


***Figure 5.29**: Primary production workers.*

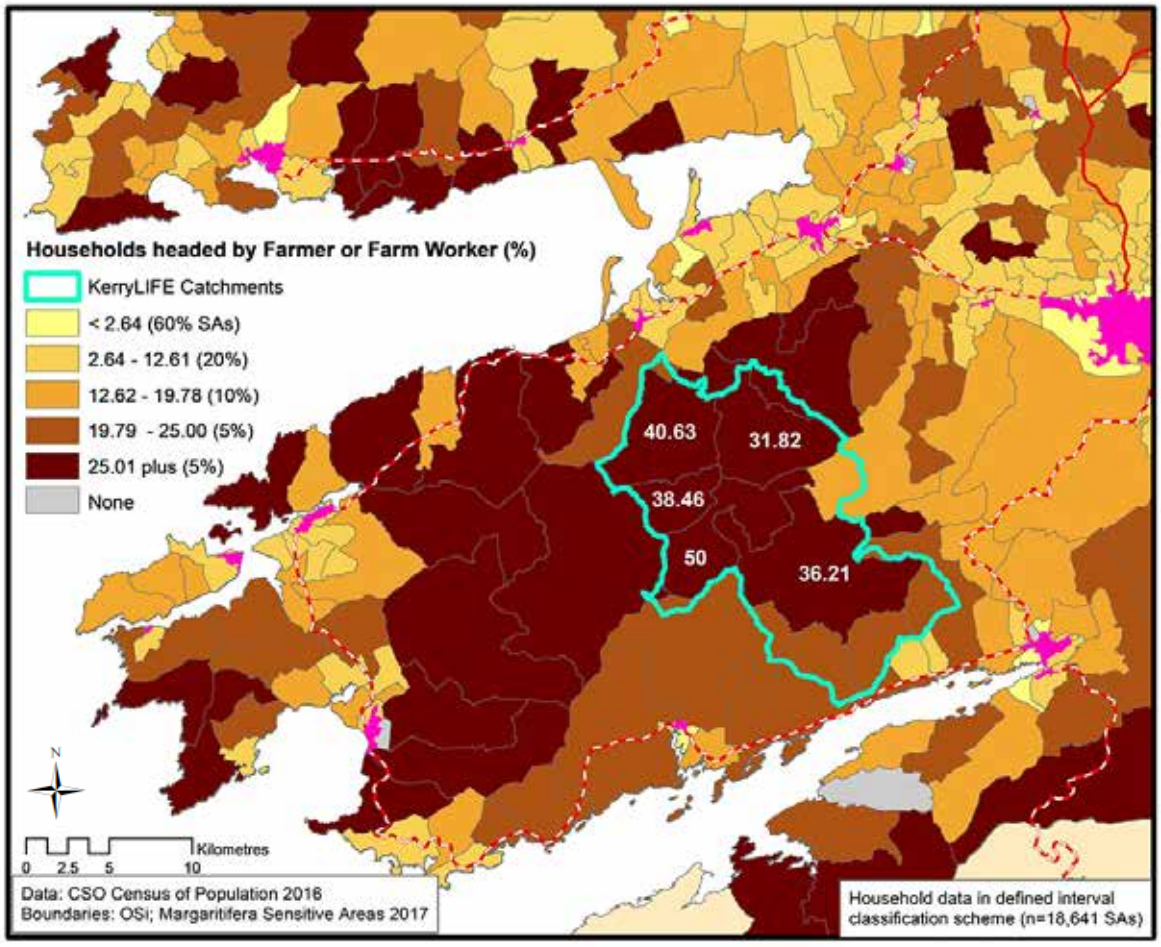


***Figure 5.30**: Farming households.*

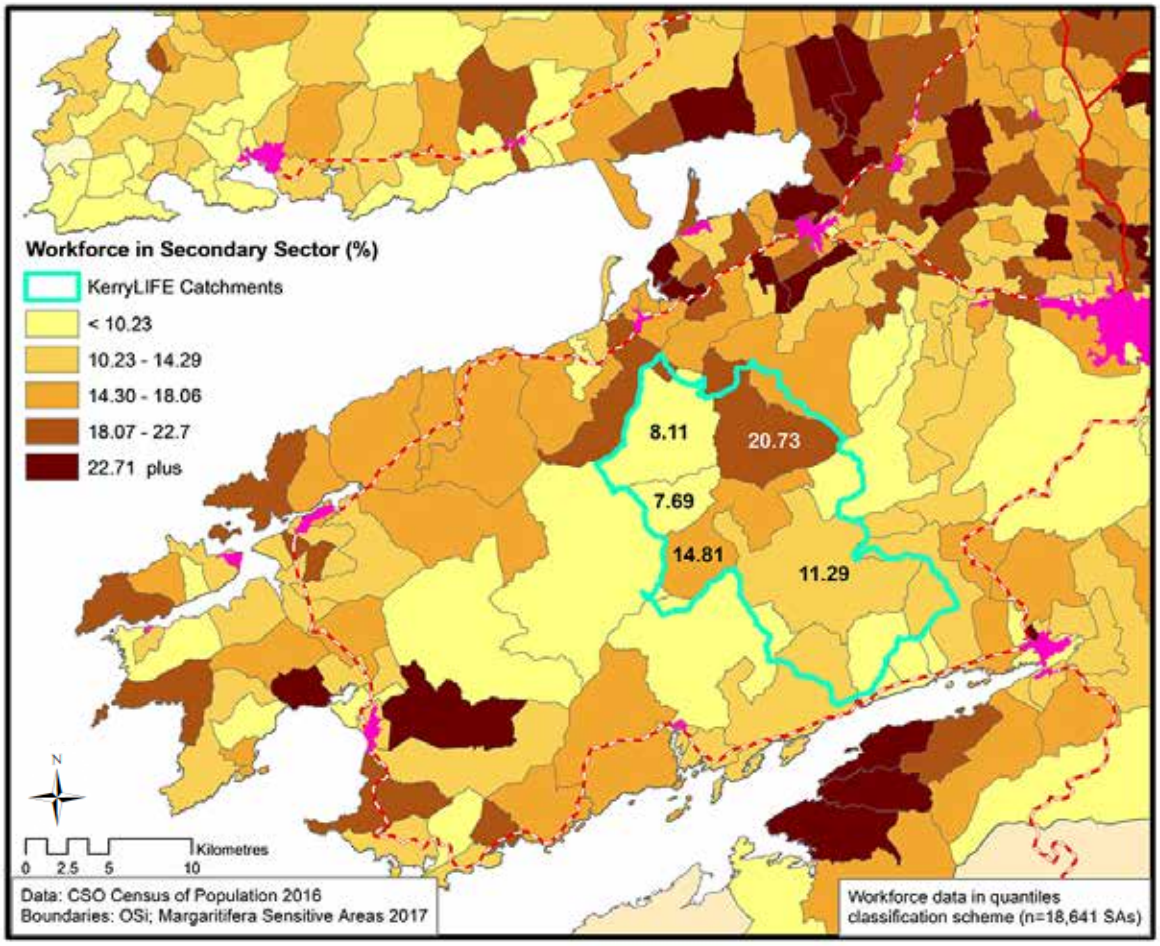


***Figure 5.31**: Manufacturing and construction workers.*

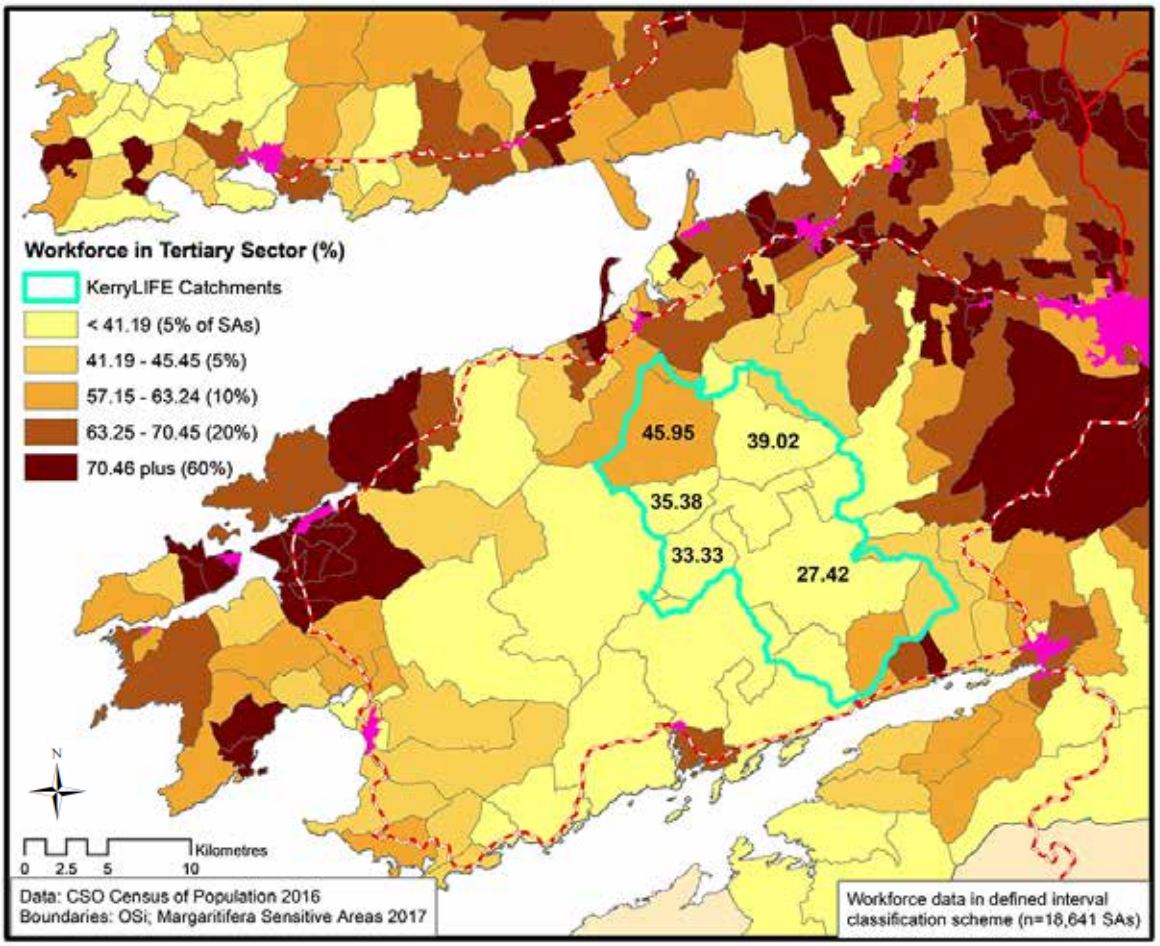


***Figure 5.32**: Service workers.*

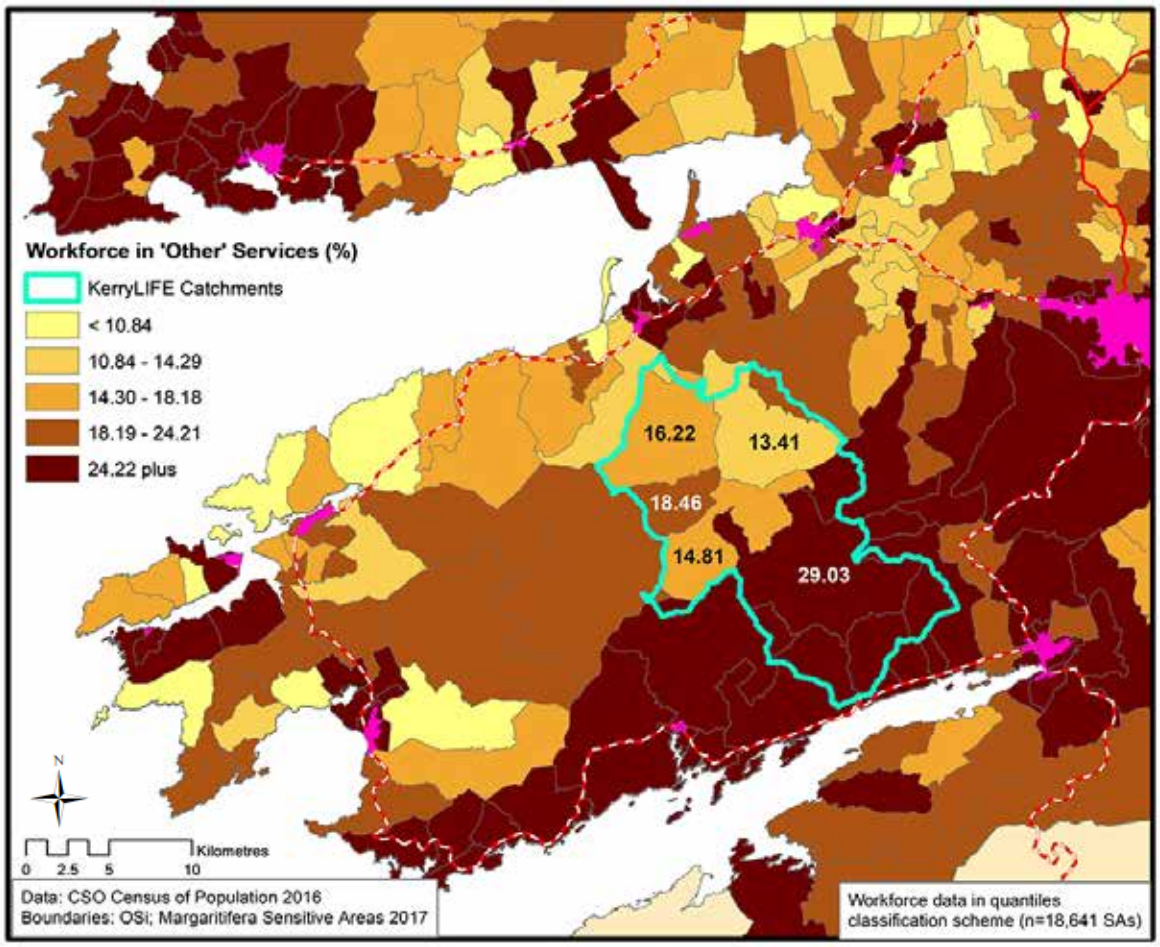


***Figure 5.33**: Seasonal and contract workers.*

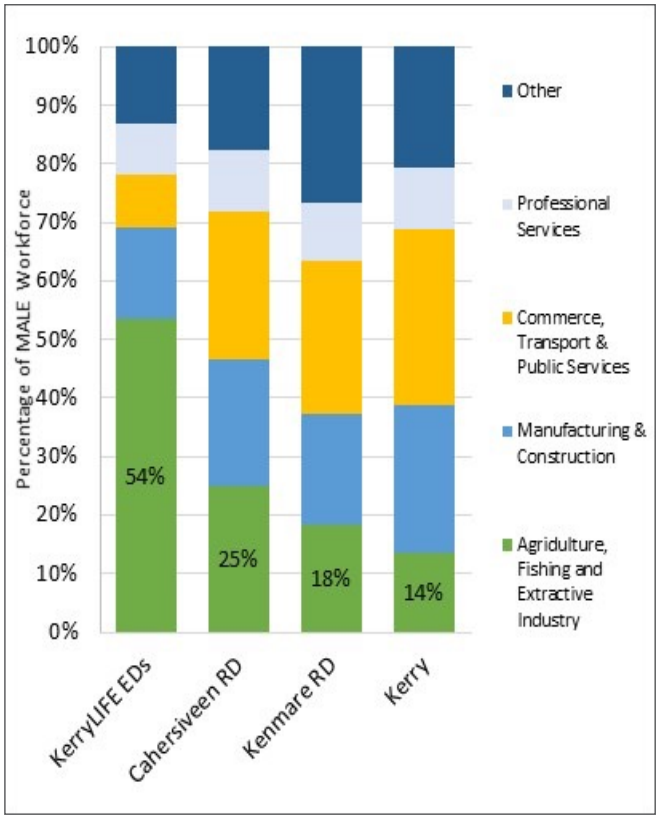


***Figure 5.34**: Sectoral composition of the male workforce, 2016, in comparative context.*

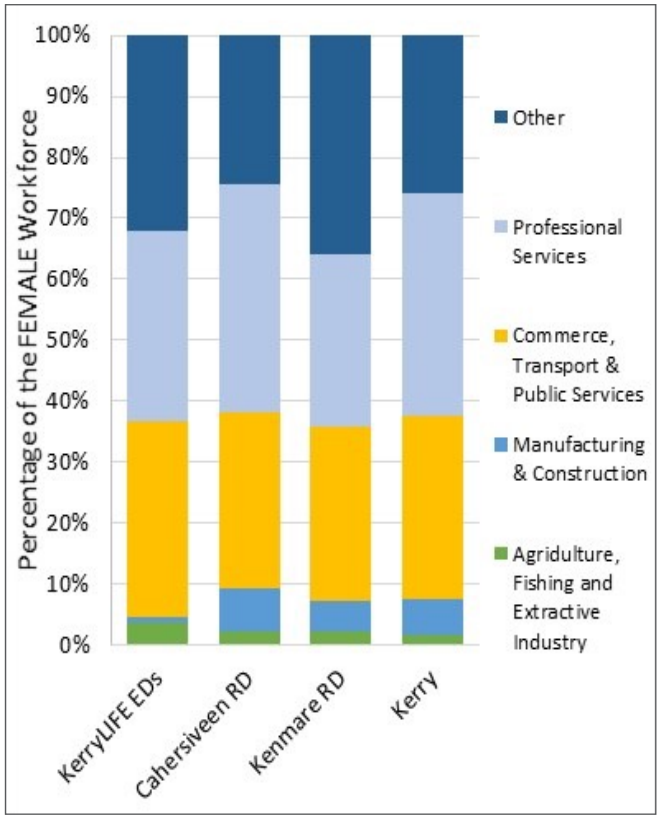


***Figure 5.35**: Sectoral composition of the female workforce, 2016, in comparative context.*

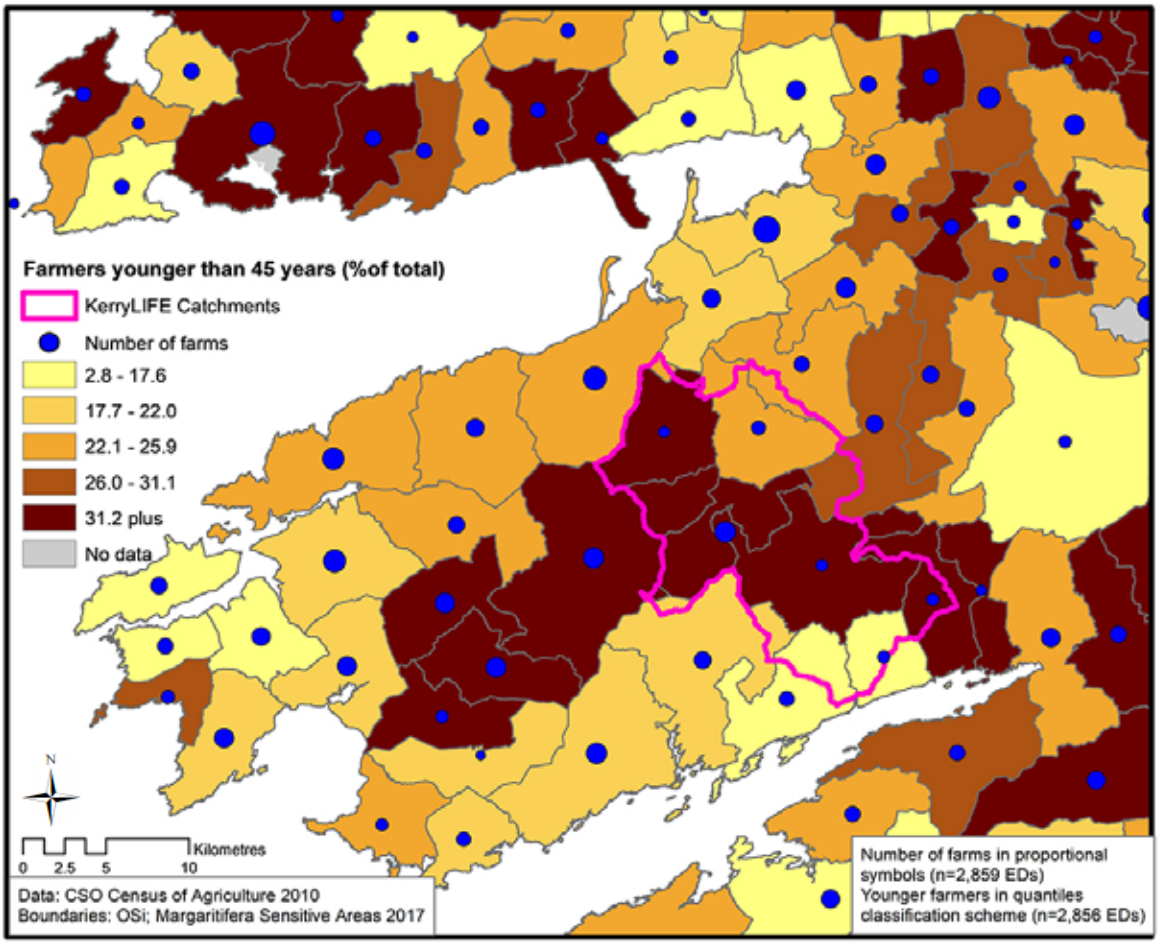


***Figure 5.36**: Young farmers.*

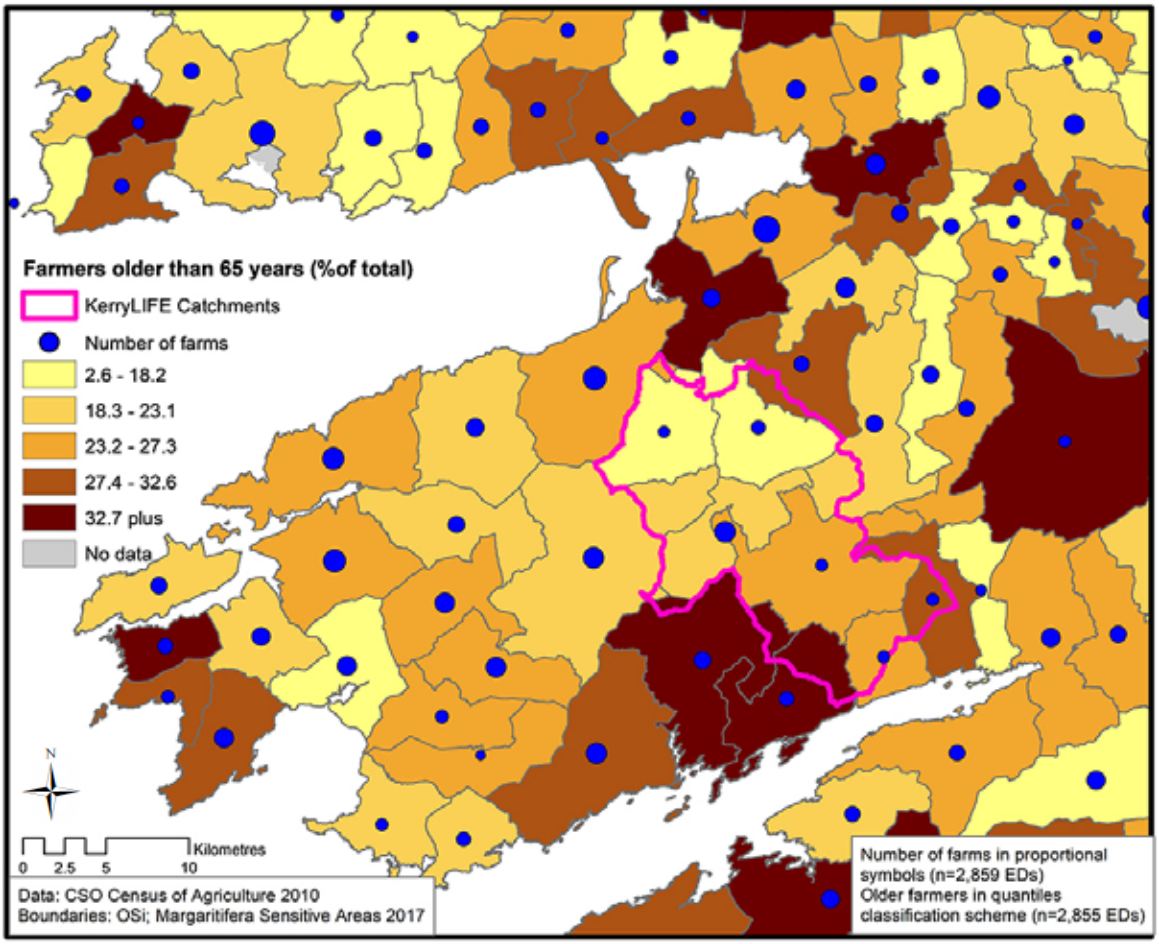


***Figure 5.37**: Elderly farmers.*

5.2.3: Focus on Farming

The last part of the area profile focuses on farming, the sector of interest in KerryLIFE. As already seen, farming remains a significant employer in the territory (and the wider region) in spite of poor-quality land resources. The following maps reveal key characteristics about local farmers, their farms and farming systems. They tell a story about the socio-economic context of local farming (i.e. part of the broader setting of KerryLIFE's SES) that is important in any project that seeks to understand and influence the behaviour of KerryLIFE farmers (key actors).

5.2.3.1: Farmer Characteristics

The largest number of farms persist in the most inland part of the KerryLIFE territory suggesting a continued tradition of small holdings in its more remote reaches. Far from indicating senescence in local farming, Figure 5.36 reveals how the last farming census of 2010 found a third or more of farmers in most of the area were younger than 45 years. These values are in the highest quintile (20%) in the State.

Similarly, below-average rates of ageing farmers continuing to farm beyond the age of retirement were found in the Caragh catchment, with average rates in the Blackwater area (Figure 5.37). The persistence of farms run by young farmers offers some hope for the future of farming in the area, but a positive future will call for well-designed and joined-up policies to meet both the higher quality-of-life expectations of upcoming generations and the challenges they face in trying to achieve them in the twenty-first century.

The mixed picture of farming qualifications in the KerryLIFE territory reflects that of the wider region. While rates of technical education tend to be lower in the uplands, the rates of farmers with an agricultural degree are generally above average (Figure 5.38), and is a positive indicator for human capital in the sector locally in terms of global scientific knowledge.

5.2.3.2: Farm Structures

Turning next to farm structures, the KerryLIFE territory is characterised by large farms – in terms of surface area (Figure 5.39), but below-average enterprises[22] (Figure 5.40). This combination of large farms with low turnovers reflects the area's low soil potential and upland topography.

The next set of maps shows that while local farmers achieve average levels of return on their labour (Figure 5.41), they do this in spite of having farmland productivity in the lowest 4% recorded across the State in 2010 (Figure 5.42). This is evidence of their human capital in pursuing farming strategies that seem to optimise their returns at ED-level.

5.2.3.3: Farming Systems and Land Uses

The final set of farming maps shows the ways in which farmers in the KerryLIFE territory are making a livelihood from the land. Figure 5.43 shows that very high proportions of farmland in the area remain under rough grazing, an indicator of more natural vegetation. In fact, the values lie in the top 3% of those found anywhere in the State. Furthermore, stocking density rates in the area are in the lowest 5% of values in the country (Figure 5.44). Taken together, the maps record the pursuit of extensive livestock production that is characteristic of High Nature Value farming (HNVf).

This kind of farming has income implications for farmers as it highlights how unsuitable the productivist model of agriculture that promotes ongoing farming intensification is for an area like this. Figure 5.45 reveals that farms in the area are more likely to have woodland, another indicator of more natural vegetation, and that farm households in parts of the Caragh and Blackwater catchments have relatively high rates of farm diversification. The latter indicates both the need by farmers to supplement their farming incomes and the human capital that exists in farm households to innovate and pursue alternative income-generating ideas.

The main farming systems in the territory are specialist sheep farming and specialist cattle farming, followed by a mix of the two systems (mixed grazing livestock). Figure 5.46 shows above-average rates of sheep farming across the two catchments, especially in more inland areas, while Figure 5.47 reveals that higher rates of cattle farming are found in the lower reaches of the KerryLIFE territory.

These spatial patterns not only capture the influence of land resources but may also indicate the effect of the wider economy as combining farming with an off-farm job is more typical among cattle farmers. The latter trend has environmental implications as farmers with an off-farm job simplify their management practices by intensifying production into the more accessible low-lying parts of their farms (O'Rourke *et al.*, 2012).

[22] The scale of farm enterprises is represented as standard output of their agricultural products (crops or livestock) calculated from the average monetary value of agricultural outputs at farm-gate prices.

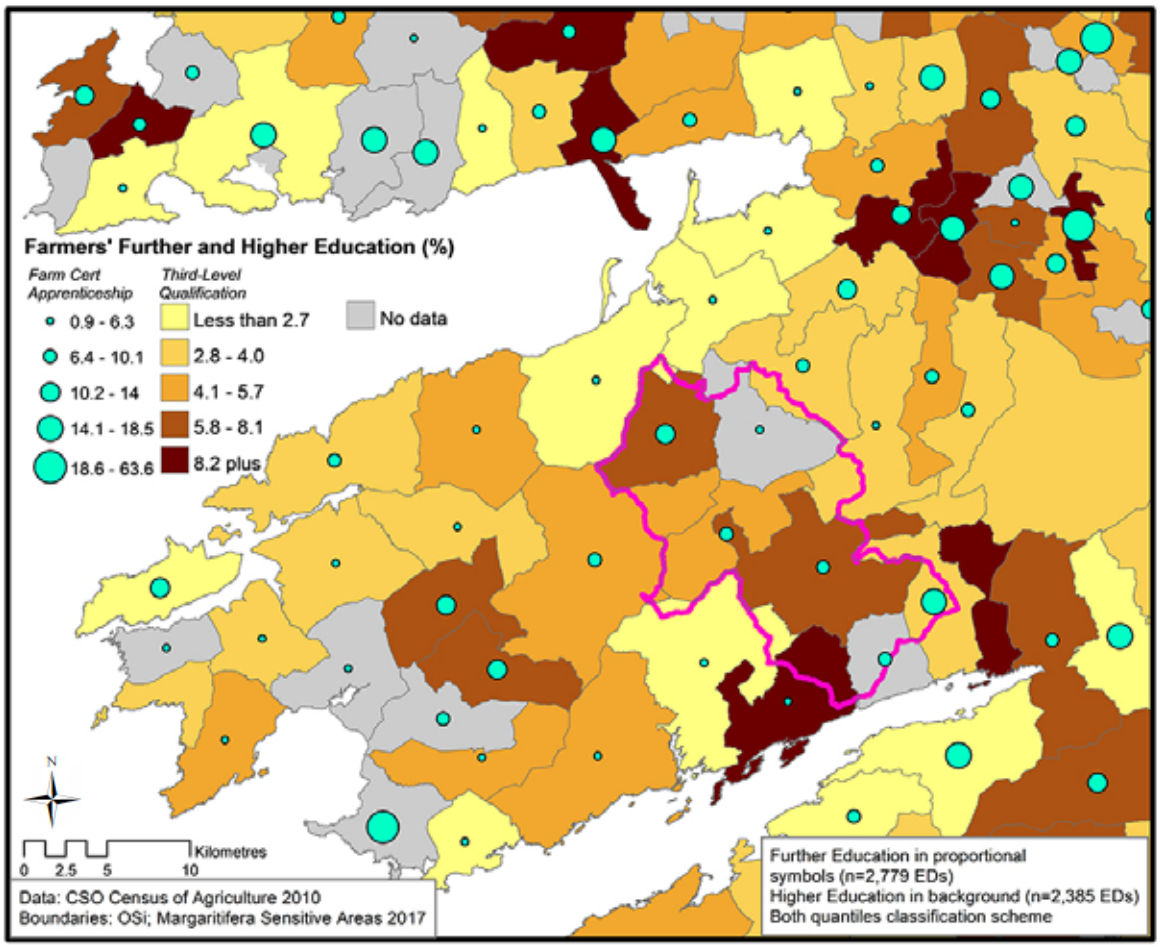


***Figure 5.38**: Agricultural qualifications.*

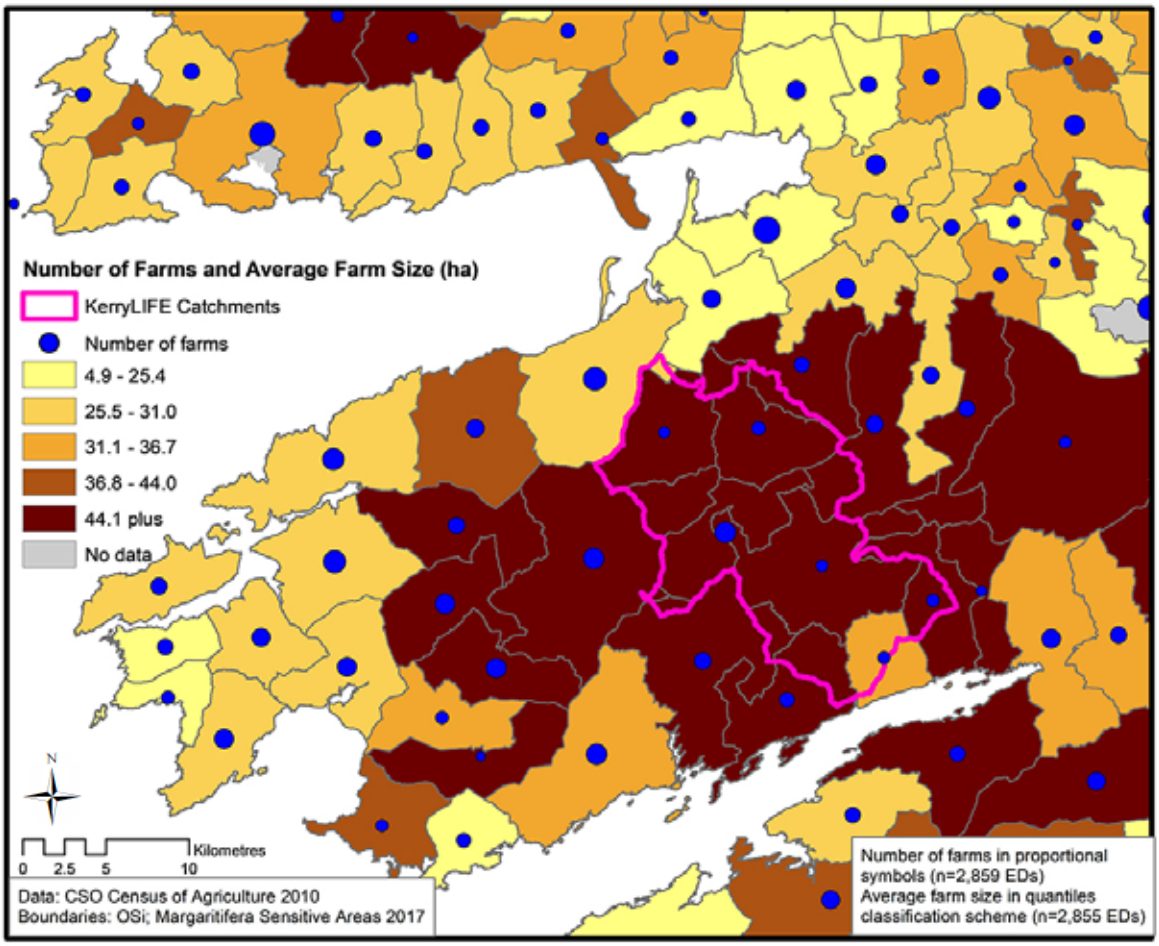


***Figure 5.39**: Farm size.*

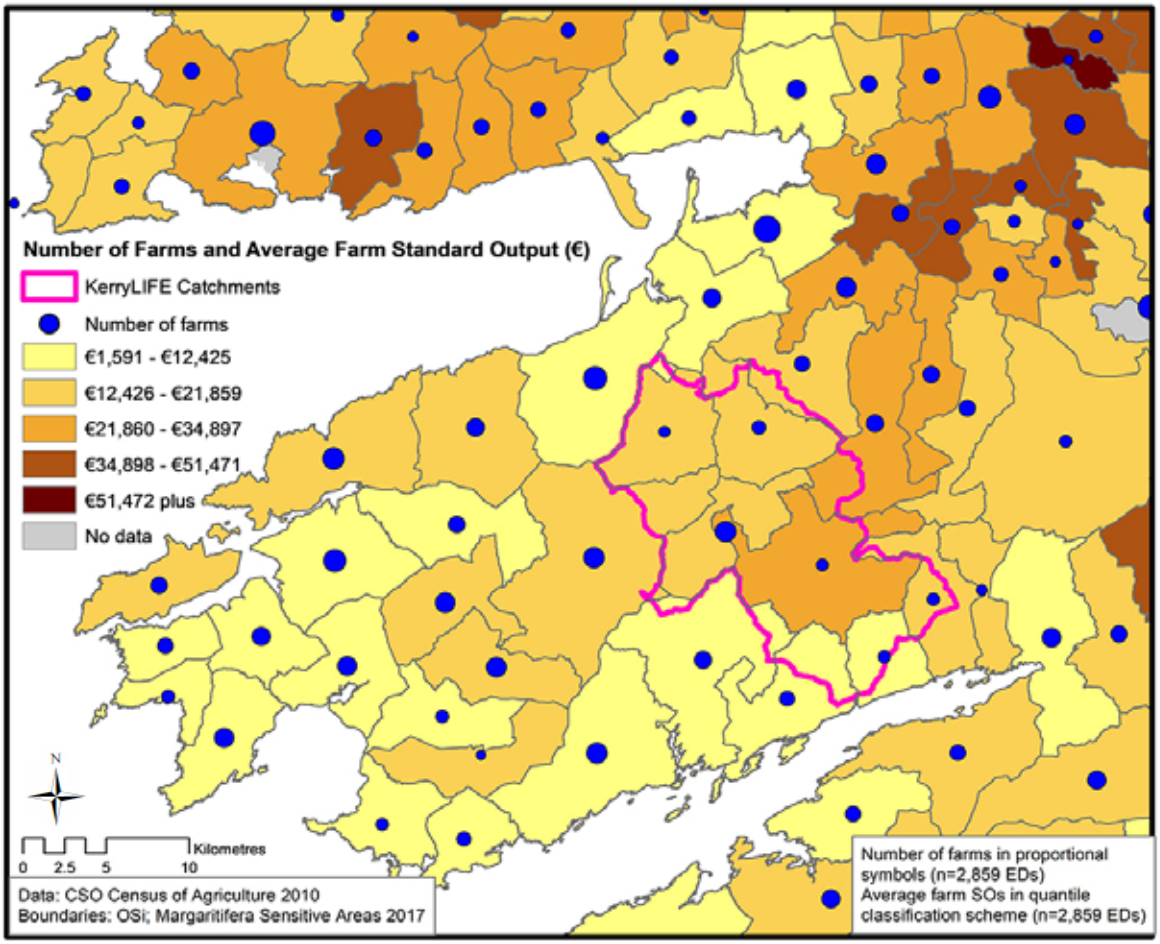


***Figure 5.40**: Farm business scale.*

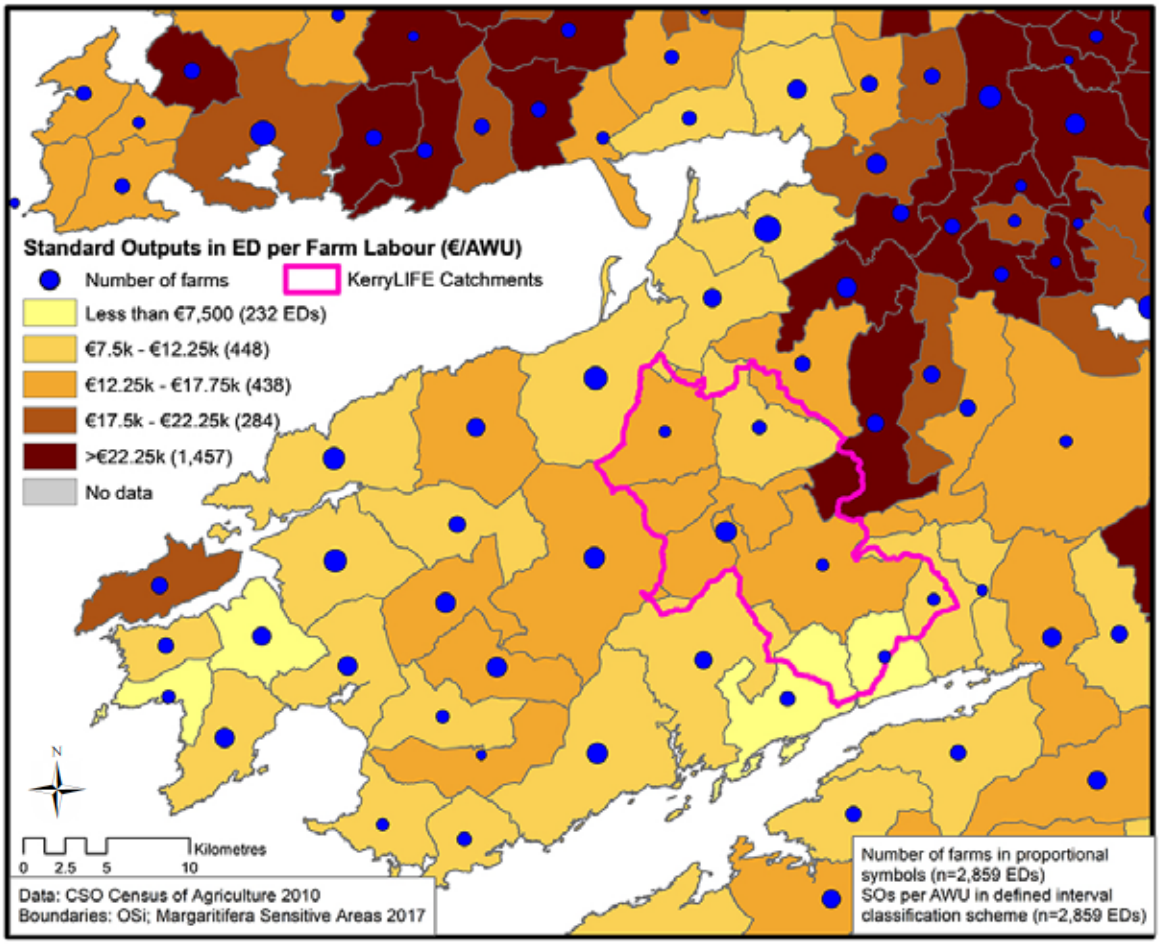


***Figure 5.41**: Labour productivity.*

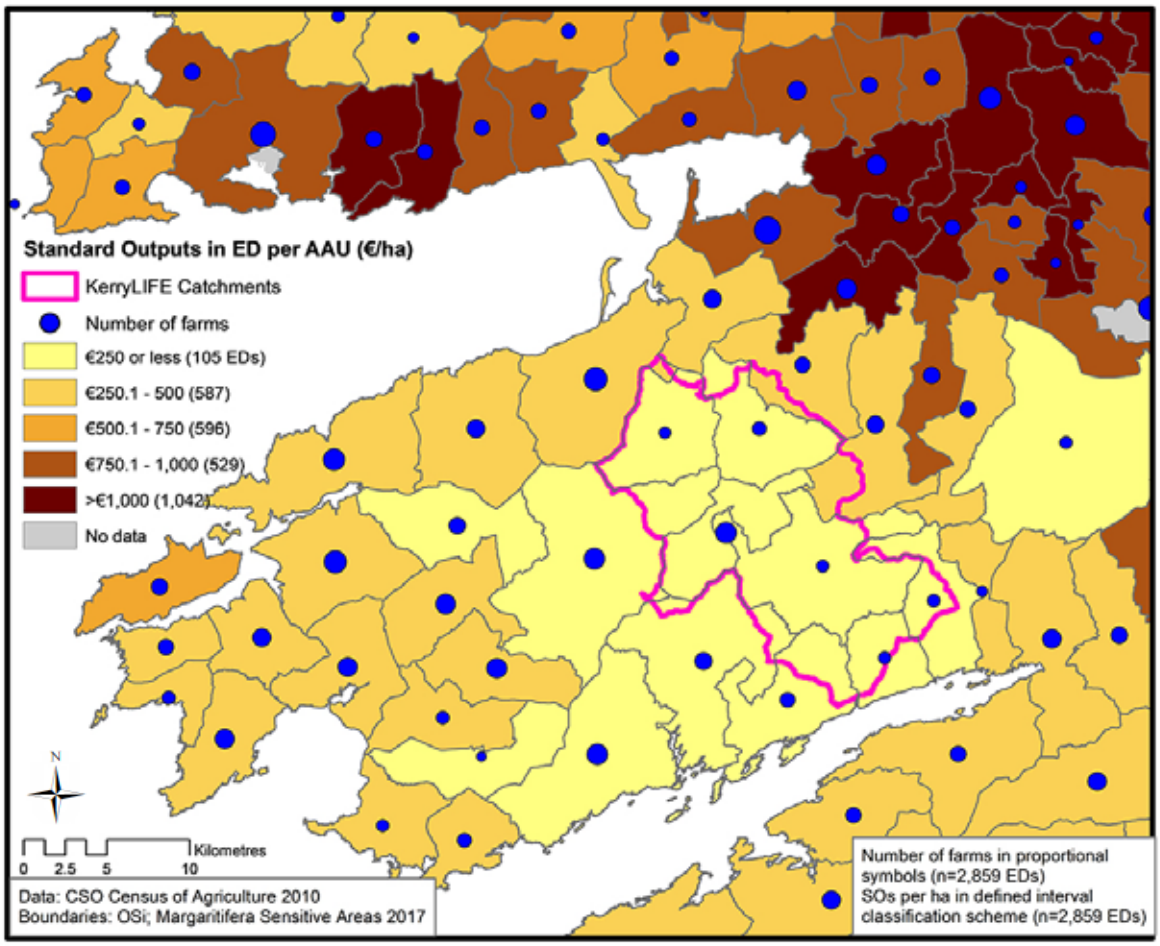


***Figure 5.42**: Land productivity.*

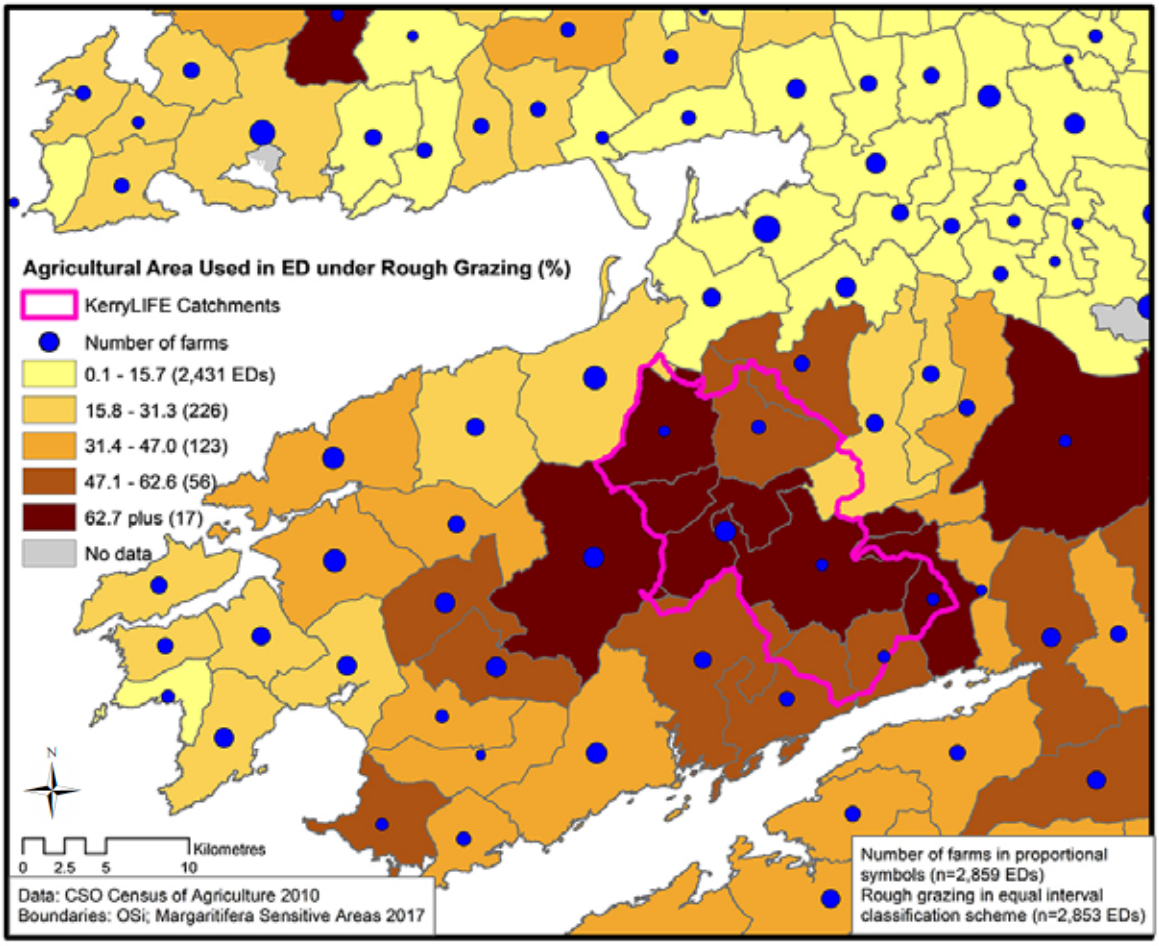


***Figure 5.43**: More natural farm vegetation.*

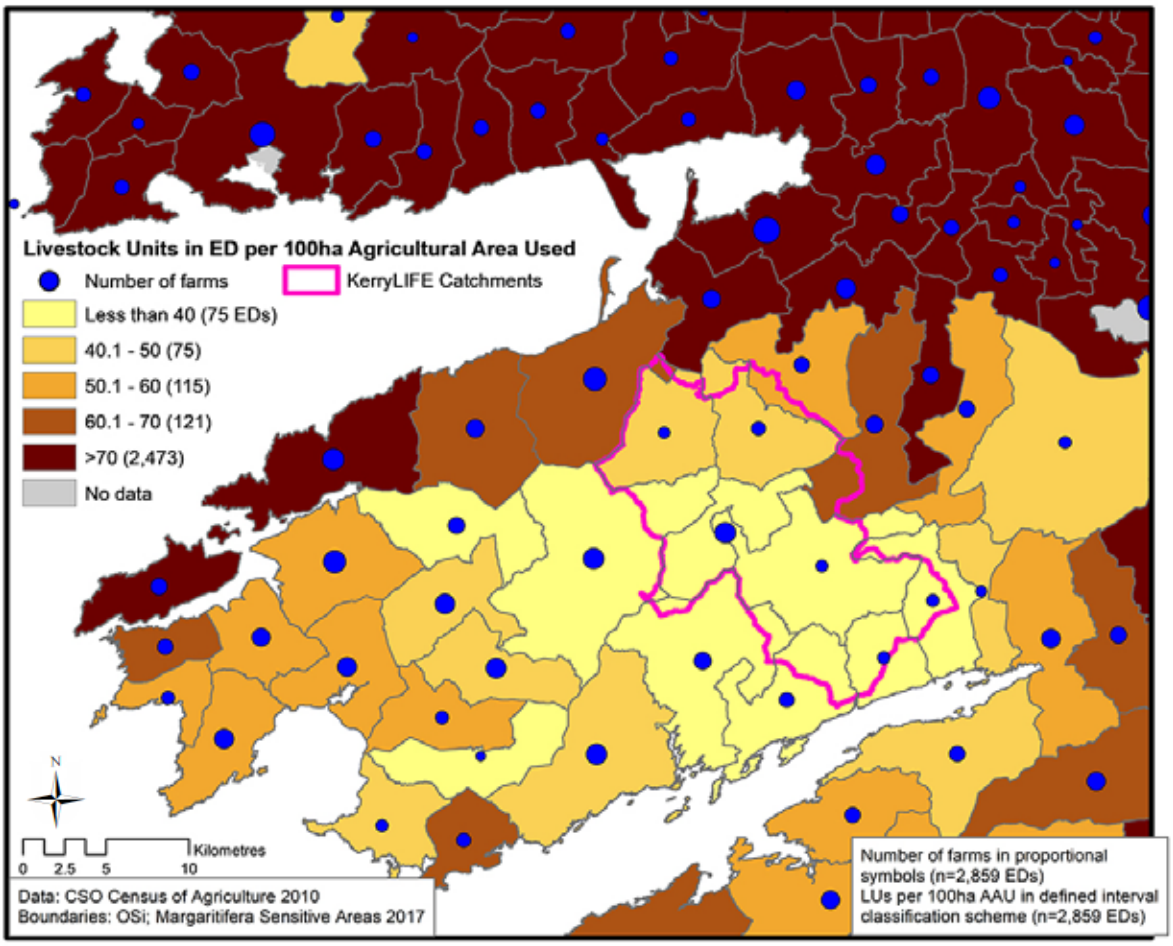


***Figure 5.44**: Extensive livestock farming.*

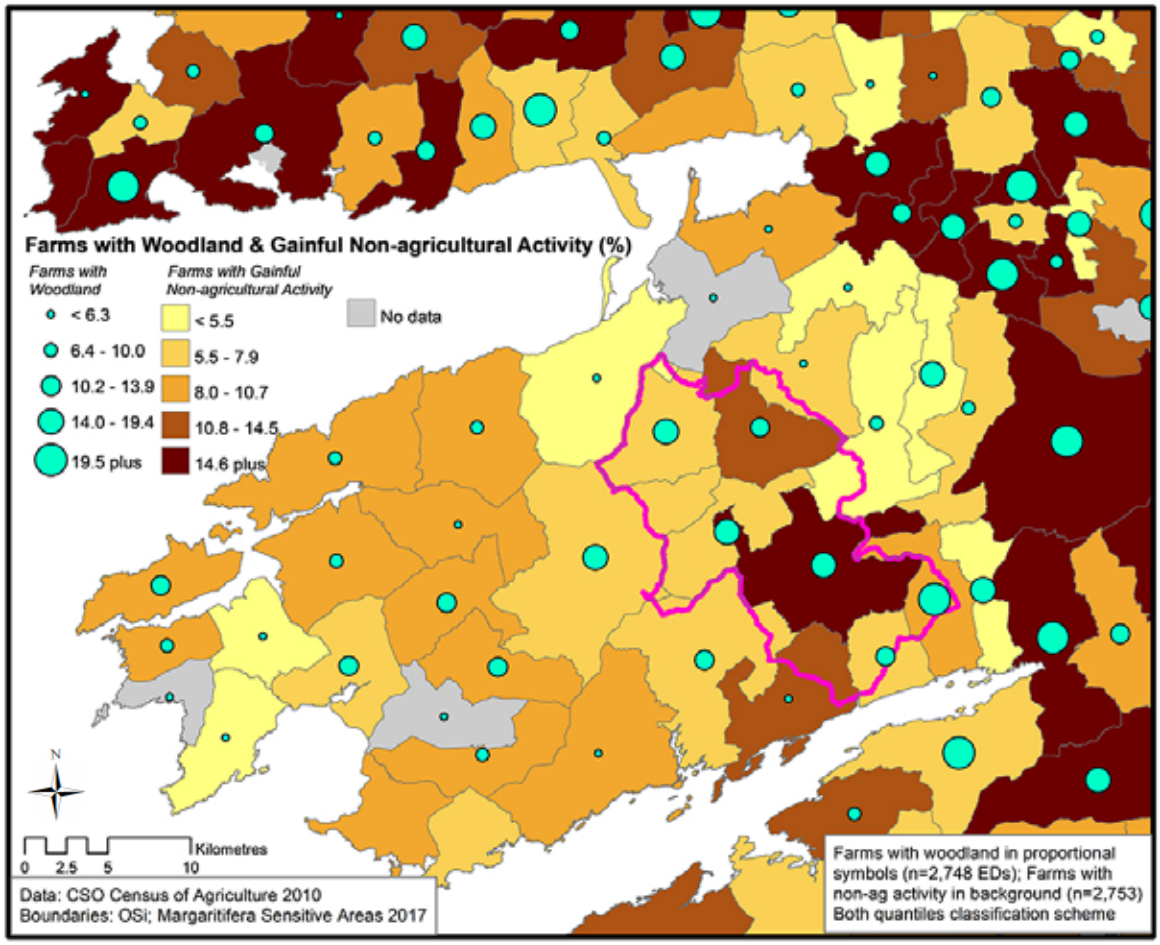


***Figure 5.45**: Farm woodlands and diversification.*

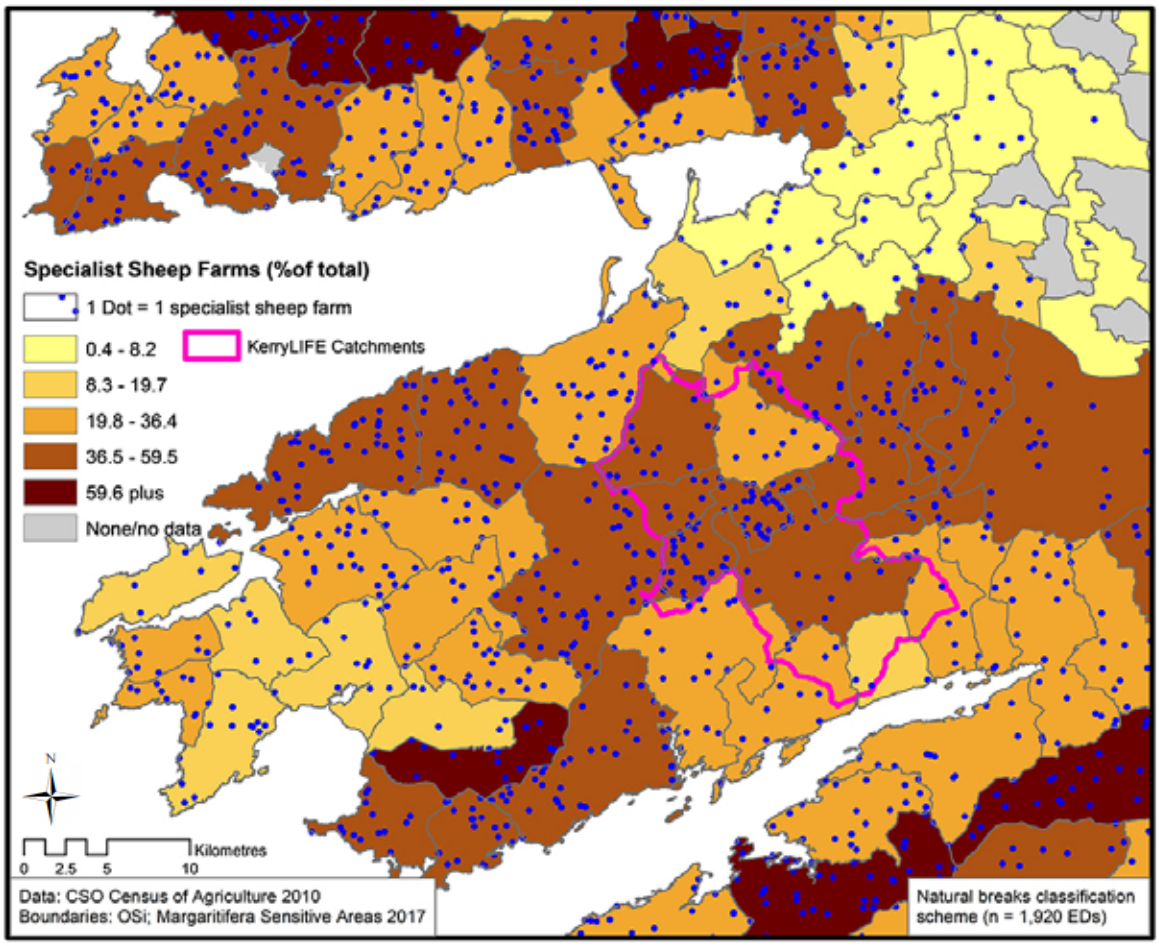


***Figure 5.46**: Sheep farming.*

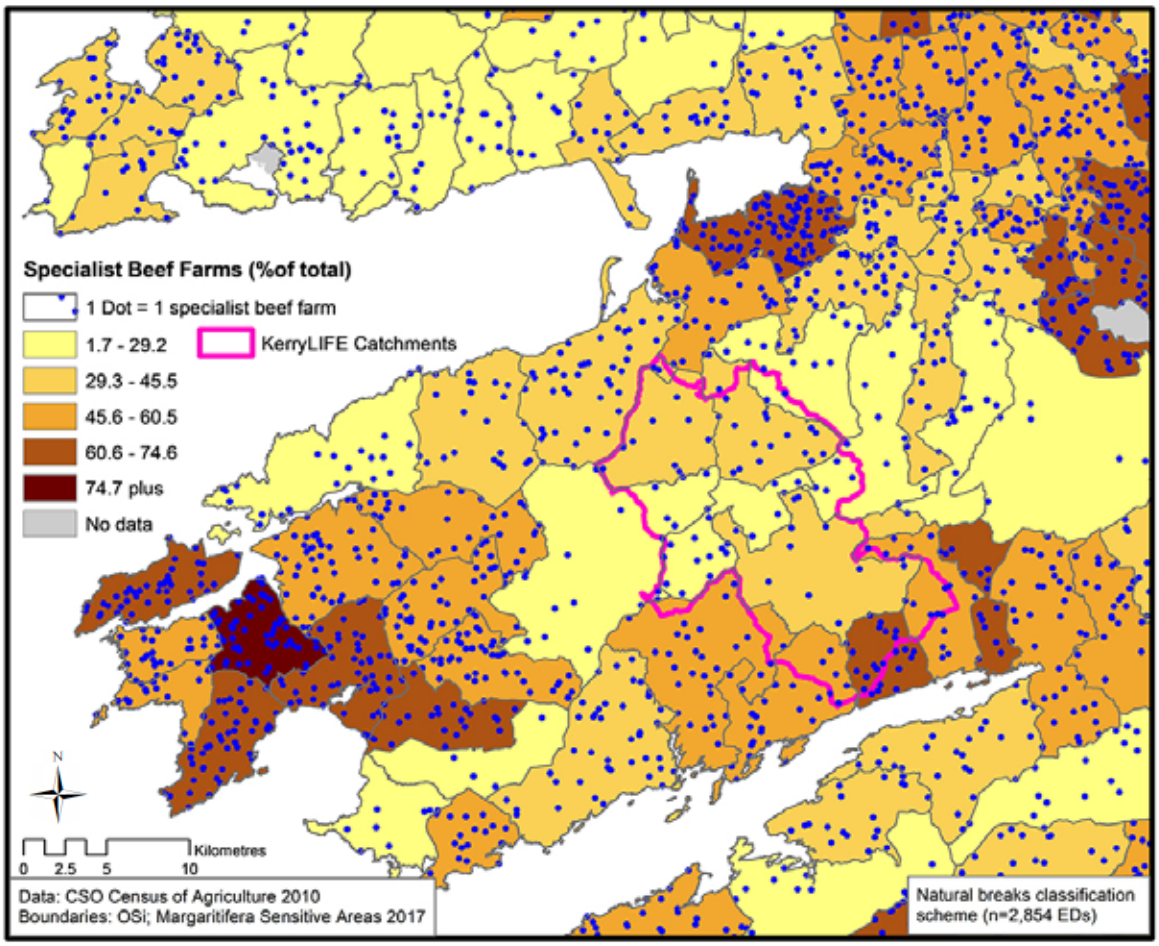


***Figure 5.47**: Cattle farming.*

5.2.4: Summary

This section presents a rich and complex picture of the area in which the KerryLIFE project was implemented and helps to illuminate the broader settings of the KerryLIFE social-ecological system. Following millennia of human habitation and agrarian activity, a rapid period of agricultural and rural restructuring that began in the second half of the last century has affected this remote part of the south-west of Ireland as it has other parts of the EU. The continuation of long-term trends of rural depopulation and ageing demographics indicate relatively poor employment opportunities in the area and low levels of rural vibrancy in terms of generational renewal. In spite of the poor-quality land resources and low farming incomes associated with the area's cattle and sheep farming systems, farming remains a significant employer. Relatively high proportions of young farmers provide a positive note for local farming futures, but not necessarily for HNV farming. The economic realities of farming on the Iveragh peninsula, within a policy framework that disproportionately invests in the productivist model of agriculture, mean that upcoming generations of farmers will have to make difficult choices with regard to farming practices to accommodate the off-farm jobs that are essential for their livelihoods and families. Simplification of farm management practices e.g. through specialist cattle farming and concentrating livestock rearing in lowlands, which are not optimal for ecosystem service provision, looks set to continue unless a strong rural development alternative can be developed for HNV farming locations including the KerryLIFE project area. The fact that farm families create the cultural landscape for which this international tourist destination is renowned and that most non-farming residents themselves have a high stake in local water quality provides a strong foundation for an integrated and collaborative rural development strategy that includes HNVf. The next two sections address and analyse the other dimensions of the SES framework, namely stakeholder perspectives and actor interfaces (including governance) – locally and with broader institutional and other contexts.

5.3: KerryLIFE Farming Community Stakeholder Perspectives

Farmers were key actors in the KerryLIFE project, as were their wider farm households. This section presents farmers' evaluation of KerryLIFE. It provides a summary of their experiences and perceptions - including the aspects that worked well and those that could have been better. This section also articulates farmers' recommendations in respect of improving agri-environmental practices and policies. The data and analysis presented here are drawn from the survey responses, face-to-face meetings, farm visits and other conversations with farmers. When the term 'farmer' is used here, it can refer to any member of a farming household.

5.3.1: Motivations for joining KerryLIFE

Farmers were asked about the factors that motivated them to join KerryLIFE. The questionnaire presented them with a list of potential factors, including income, on-farm practices, knowledge acquisition and social considerations. They were asked if these were either 'very', 'somewhat' or 'not' important in motivating them to participate. As Figure 5.48 shows, income was the primary motivating factor. Over two-thirds of respondents stated that this was very important, while the remaining third stated that it was somewhat important.

Over half (53%) of farmers stated that it was very important, for them, to farm in a more environmentally friendly manner. Just under half (46%) felt that improving farming practices was very important in motivating them to join KerryLIFE. As the graph also shows, farmers were generally not motivated by social considerations, such as the decisions made by other farmers / neighbours.

When asked about motivating factors, interviewees stated that the payment from KerryLIFE was significant. They described it as a welcome boost to household income, and they stressed that remuneration ought to be a central component of (any future) approaches to the agri-environment. The survey findings also indicate some differences between farmers' motivations in the two catchments, as the following graph illustrates. Income was a stronger determinant in Blackwater (relative to Caragh), while environmental and social factors were stronger determinants in Caragh.

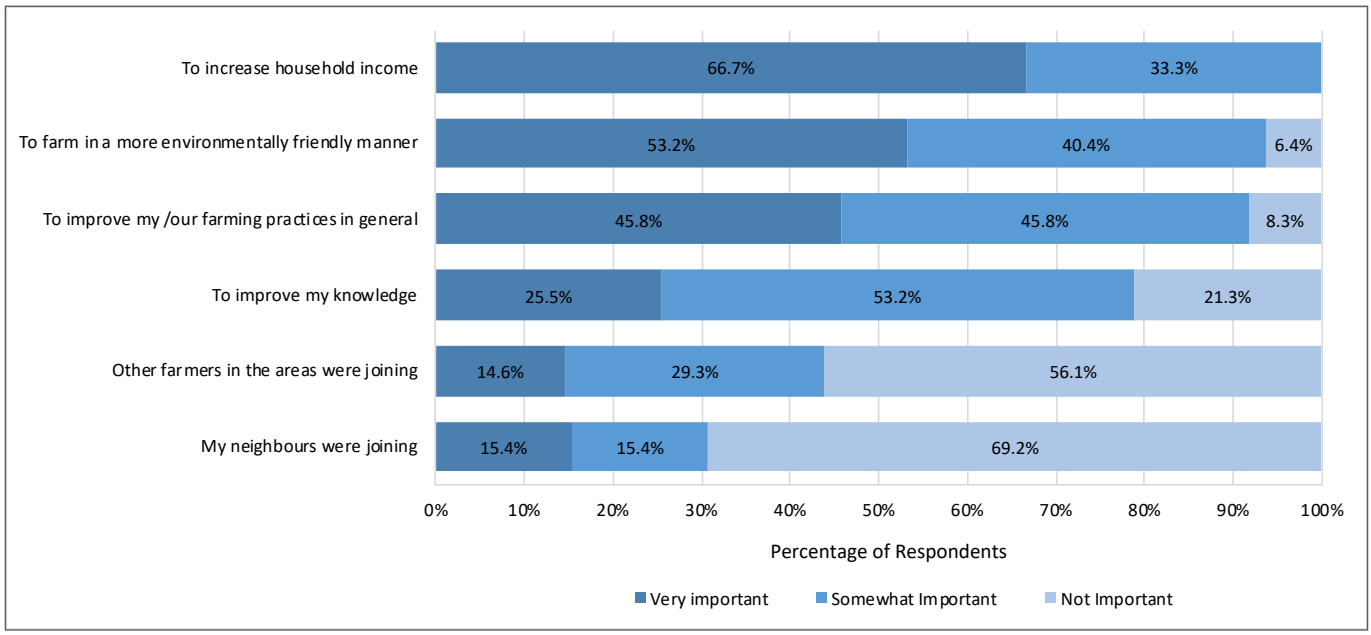


***Figure 5.48**: Factors that encouraged farmers to join KerryLIFE.*

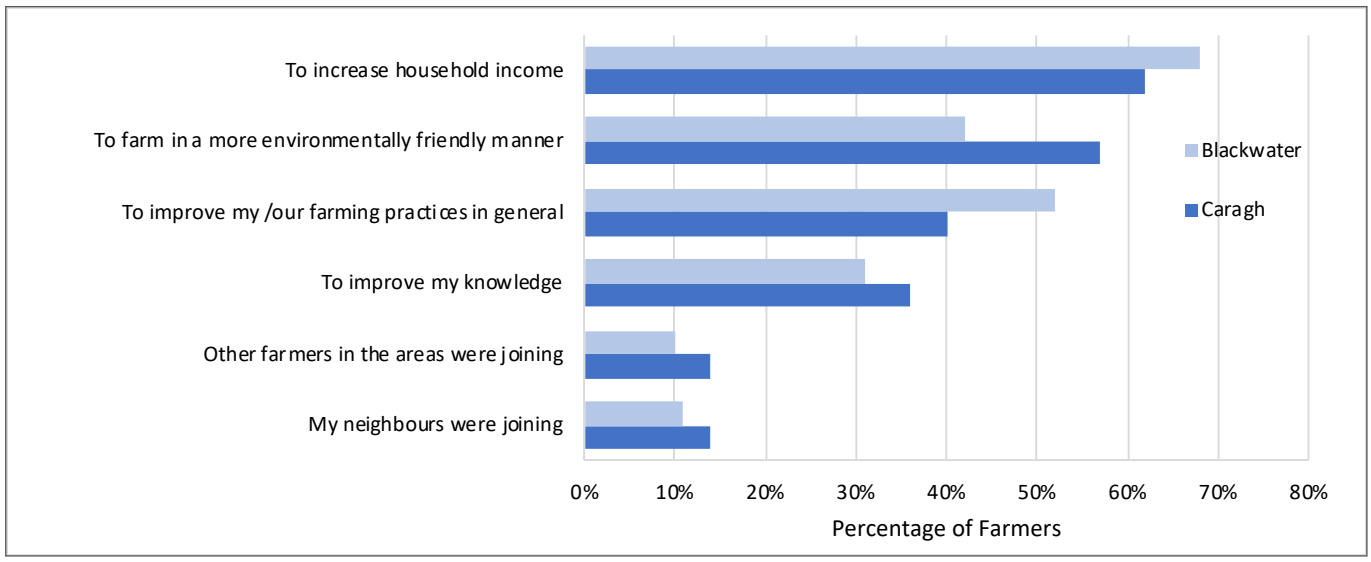


***Figure 5.49**: Factors that encouraged farmers to join KerryLIFE by catchment.*

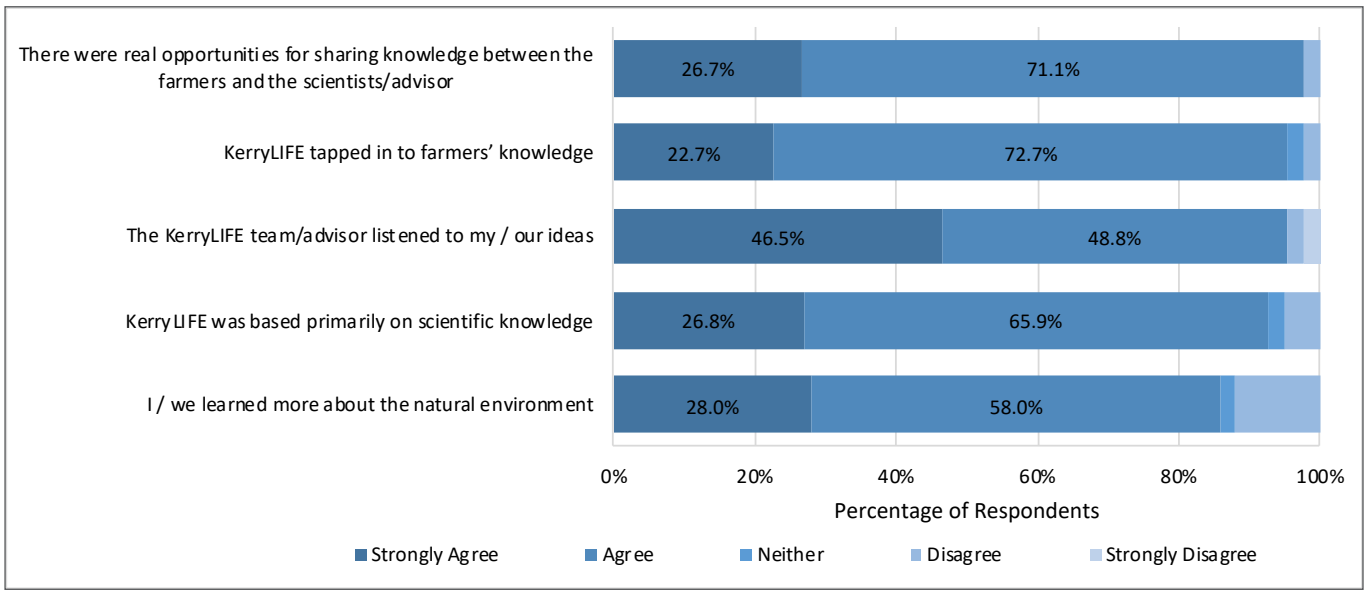


***Figure 5.50**: Farmers' perceptions of KerryLIFE processes and engagements.*

5.3.2: Experiences and perceptions of KerryLIFE

Farmers were asked a series of questions about what it was like to participate in the programme. These dealt with their relationships and interactions with the KerryLIFE team, the dynamics of KerryLIFE events and its appropriateness, or otherwise, to the locality. The survey questionnaire invited participants to respond to a series of statements, using a Likert scale. Figure 5.50 illustrates their responses.

As the data show, almost all farmers (98%) agreed with the statement that there were real opportunities for sharing knowledge between farmers and scientists. A similar proportion (96%) agreed that the advisors listened to farmers' ideas. When asked about this, farming interviewees paid tribute to the KerryLIFE staff for the manner in which they engaged with farmers. They described them as '*approachable*', '*good listeners*', '*friendly*', and '*down-to-earth*'. Farmers pointed out that they did not always agree with the scientific advice they received, but that they were able to find compromises and solutions. As one farmer stated, "*they had a way of getting around us, a nice way, and we always agreed on the way ahead*". Another farmer reported,

> *"[KerryLIFE staff member] never promised anything that couldn't be delivered. If there was a problem, he would raise it with the Department and push things along. With [KerryLIFE staff member], you could negotiate what would be in and out of a conservation area. He would make his suggestions, but he would always listen to you, and we would always come to an agreement."*

Some farmers stated that they would have preferred more flexibility, as the following quote indicates:

> *"It's difficult to touch the land. In KerryLIFE, they don't want you to use a machine. I had to take everything (fencing posts, wire) on my back. They wouldn't allow me to take my neighbour's quad [bike]. I wanted to do a passage, just 3 metres wide, but they wouldn't hear of it. They can make things too complicated. They are not practical farmers, and I found them a bit awkward to work with. They stick too much to their high horse. They need to realise the maintenance involved, and not to obstruct us in the minimum developments."*

As the graph also shows, the vast majority (96%) of farmers agreed that KerryLIFE tapped into their knowledge. Through their interviews, farmers revealed that this happened in the preparation and implementation of farm plans to a greater extent than during the farm walks / discussion groups. They also reported that KerryLIFE advisors made efforts to engage with, and to listen to, younger household members, including potential farm successors.

The majority (93%) of farmers agreed that KerryLIFE was based primarily on scientific knowledge – mainly in relation to water quality and the relationship between farming practices and water quality. According to farmers, the associated interventions, particularly keeping cattle out of watercourses, 'made sense' and were 'logical'. They also reported that KerryLIFE was predicated on data relating to water quality, and that the presence of the freshwater pearl mussel was an indicator of high-water quality. But some feedback displayed a lack of understanding of the deeper values underpinning biodiversity conservation. One farmer summed up these views as follows:

> *"… prior to KerryLIFE, people didn't take much notice of the mussels. They were just always there in the river. We know that pearl mussels are important. They are a sign of clean water, but what is their importance? What is their significance? What do they actually do? Nobody has ever explained that to us."*

The majority (86%) of farmers agreed that, through KerryLIFE, they learned more about the natural environment. They referred specifically, in interviews, to the impacts of stocking levels on the aquatic environment and the need for reduced agricultural inputs (particularly slurry and artificial fertilisers). Some farmers stated that they would like to have received more output / impact data, and they recommend giving farmers access to longitudinal data on the impacts of KerryLIFE on water quality in both river catchments. Farmers anticipate that NPWS and other statutory bodies will, over time, provide them with more information on the stocks of freshwater pearl mussels in the local rivers.

5.3.3: Outputs

Farmers were asked to assess KerryLIFE's outputs, specifically its economic, environmental and practice deliverables. Figure 5.51 illustrates their responses in respect of three output indicators. The findings show that the majority (81%) believe the payments were good. A larger proportion (93%) believe that their farms provide a better home for wildlife. Over two-thirds (67%) agree that KerryLIFE has helped them to become better farmers.

When these findings were teased out with farmers, they reported that the monies they received from KerryLIFE completely covered the costs of any purchases (wire, stakes, troughs). Some stated that outlays in the first year caused some financial strain, but that this was addressed in subsequent years. A number of farmers commented on the absence of an itemised financial statement to accompany payments, which they noted differed from the approach taken by marts and cooperatives.

When asked about improved wildlife habitats, farmers referred to flora more than fauna. They spoke about the re-emergence of bog-cotton and orchids, particularly in riparian zones. They noted that it will take time for birds and animals to re-inhabit their farms, although some reported observing more birdlife, particularly swallows and songbirds, in 2020. The following are emblematic observations:

"There's one half acre. There's a pile of flowers growing there now. There's great cover."

"I have a double row of whitethorns around those three fields. Once the haws come on, the birds will have food."

"Getting back to KerryLIFE, you're helping your own place, you're helping the environment, it's good for the environment, lots of new trees planted around here: whitethorns especially. It's all green money we'll be getting from now on. We have to adapt."

Several farmers questioned the long-term environmental impacts of KerryLIFE interventions, and in particular the fencing of watercourses. Some presented and others referenced historical photos of the local landscape, in which riparian zones were devoid of trees / shrubbery. They claimed an association between a treeless landscape and an abundance of freshwater pearl mussels. They also questioned if the growth of vegetation will lead to rivers becoming clogged-up and too dark to sustain aquatic life. As one farmer stated:

"The sallies [willows], the birches and the alders have completely taken over. They are causing a mat on the river. Alder is not native to here. Coillte brought it in in the 1970s, and it has gone out of control. I have a photo of Glencar Community Centre, taken in 1957. There isn't a tree to be seen. Back then, cattle were wandering around, and eating them. Now, trees are blocking the rivers, and I worry about how that is affecting water quality. This place could become like Killarney – taken over by rhododendron[23]".

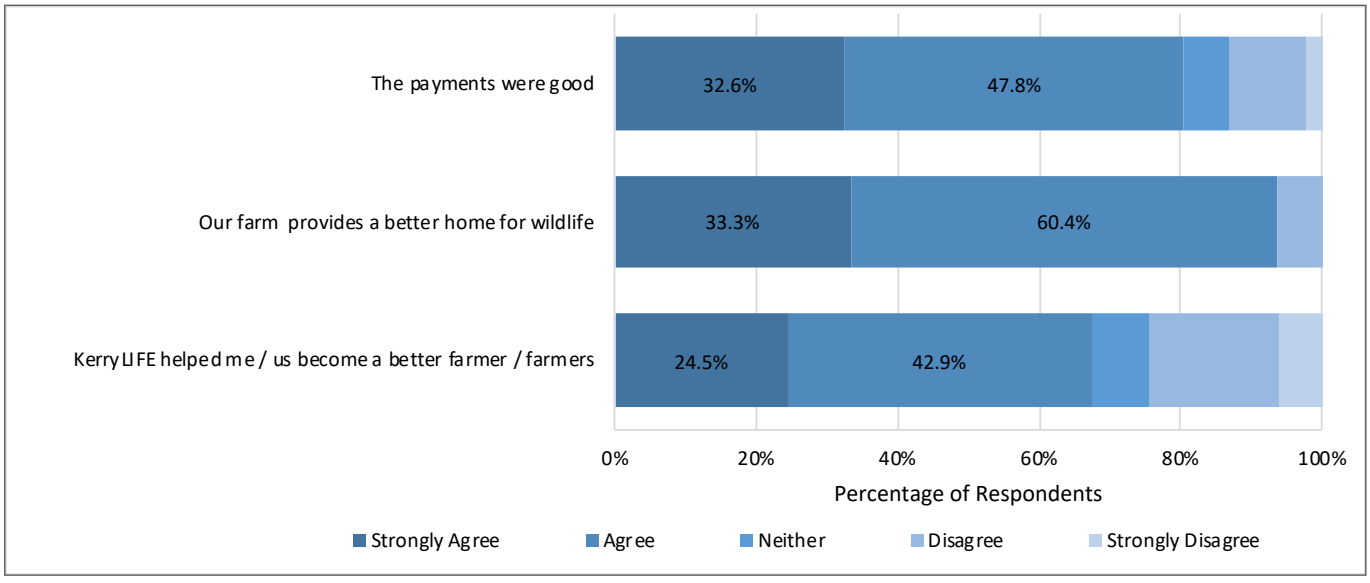


***Figure 5.51**: Farmers' perceptions of indicative KerryLIFE outputs.*

Another farmer raised a similar conundrum, stating:

> *"It's all a question of balance – for example if the sallies [willows] in the river are too big, their roots will smother the mussels, but if there are no sallies, the flow will wash the mussels away."*

While most farmers agree that KerryLIFE has enabled them to become better farmers, the notion of a '*good farmer*' is a contested, if not emotional one, especially in this era of productivism that is unsuited to the majority of local land resources (e.g., Cusworth, 2020). The survey responses indicate that most farmers believe that the future of farming, particularly in Iveragh, lies in a more ecological / environmental approach. However, this can be counter cultural, as under productivism farmers were, since the 1960s, advised by government and the farming industry to produce more. As one farmer stated,

> *"they convinced us we would make land out of the mountain … fair enough, but they didn't do the sums. It suited the banks and the contractors to be peddling those yarns".*

It is also counter cultural in terms of local social history because as another farmer reported,

> *"if the old people came back and saw us blocking up the drains they dug out with their bare hands, they would think we were all gone mad".*

In order for farming and nature to co-exist, farmers explained the need for 'give and take' for example,

> *"if we don't open some drains (not all drains, but the correct number), this place will be a complete fecking swamp. You need a constant run of water to keep the land around here any way dry, especially now with climate change and the volume of rainfall."*

Several farmers noted how public policy (at EU and Irish Government levels) has engrained productivist mindsets among farmers and is responsible for creating attitudes that moved farmers away from appreciating the natural environment. One remarked,

> *"the suckler cow premium and the ewe premium, and other premiums - all those crazy schemes, over the years, drove up [livestock] numbers, and people haven't gotten over that mindset yet."*

Understandably, the subsequent introduction of agri-environmental measures causes confusion among farmers. As one KerryLIFE participant stated:

> *"Go back to REPS 1. They told me to build a slatted shed. Could you imagine that and the ground around here? Once I built the slatted shed, I had to make ground, make fields, so I could spread slurry. Now, under KerryLIFE, those fields are planted (native woodland scheme). It's a total contradiction."*

5.3.4: Costs and savings

Farmers were asked if KerryLIFE had resulted in any unexpected costs or savings for them. In response, just under one-quarter (24%) stated that they had experienced unexpected costs. The most frequently cited costs were sheep (and cattle) falling into drains that had become overgrown, as they could not be opened. Subsequent discussions with the KerryLIFE team suggested that this had not been reported to the same extent during the lifetime of the project, as was the case during the evaluation (data collection phase). Half (50%) of farmers stated that KerryLIFE had brought about unexpected savings, while a smaller proportion (38%) stated that it had not. The following comments are representative of farmers' experiences:

> *"I didn't put out any fertilizer for three years. This was the first time I shook a few bags. I spread about twenty bags. In the past, I would have put out between forty and sixty bags. I would prefer not to put out any, but to be truthful, I have more grass this year than I had this time last year. I can see enough up to Christmas anyway."*

This questioning of the financial aspects of KerryLIFE opened up discussions with farmers on the merits and demerits of agri-environmental farming relative to productivist farming. Several farmers stated that the agri-environmental approach is more profitable, but they reported that some farmers do not keep full accounts or have not had access to independent financial advice. As a result, they have not had the opportunity to make an evidence-based decision about their farming practices and trajectory.

[23] An invasive alien plant species in the region.

5.3.5: Environmental attitudes and behaviours

Farmers were asked about their attitudes and behaviours (specifically farming practices) before and after KerryLIFE. They were invited to compare their current attitudes and behaviours with those that pertained prior to their participation in KerryLIFE. Figure 5.52 synthesises their responses – the extent to which their attitudes and behaviours have changed ('more' or 'less') or not (remained the 'same'). The findings show that over three-quarters (77%) currently think 'more' about the next generation and their need for a healthy environment. Over two-thirds (67%) think 'more' about how farming affects nature, while almost two-thirds (63%) think 'more' about how farming affects waterways. As one farmer remarked, *"You should have seen that place (pointing to an area of mixed grasses), that used to be black from the cattle… they would blacken it, but now it's thriving*". These findings represent notable environmental wins, and they indicate that the associated responsible ecological behaviours will continue post-KerryLIFE.

The survey findings also reveal that the majority of farmers are prouder of their farms, and that they think more about their farms' landscape, heritage and history. In their interviews, several older farmers spoke, in great detail, about the freshwater pearl mussels and their historical and heritage significance. They told stories about people coming from abroad, mainly from Scotland – in search of pearls. They recounted that the pearl is particularly associated with Mary Queen of Scots and Elizabeth I of England. Others told about walking barefoot, as children, and cutting their toes on the mussel shells. Some farmers claimed that mussels rising towards the surface of the river was a sign of impending heavy rain.

The farmers' survey reveal that most are not any more positive about their locality or their own farms. Thus, while there was a 'feel good' factor about KerryLIFE, other externalities, particularly falling beef prices, cause them to be less than optimistic about farming in their locality.

Only a minority of farmers, in both catchments, participated in KerryLIFE. The programme was oversubscribed; it received three times more applications than the number of places that were available. While this is understandable from a resource allocation perspective, one of the consequences is that participating farmers perceive that their 'good practices' can be undermined by conventional practices on adjoining farms. As one

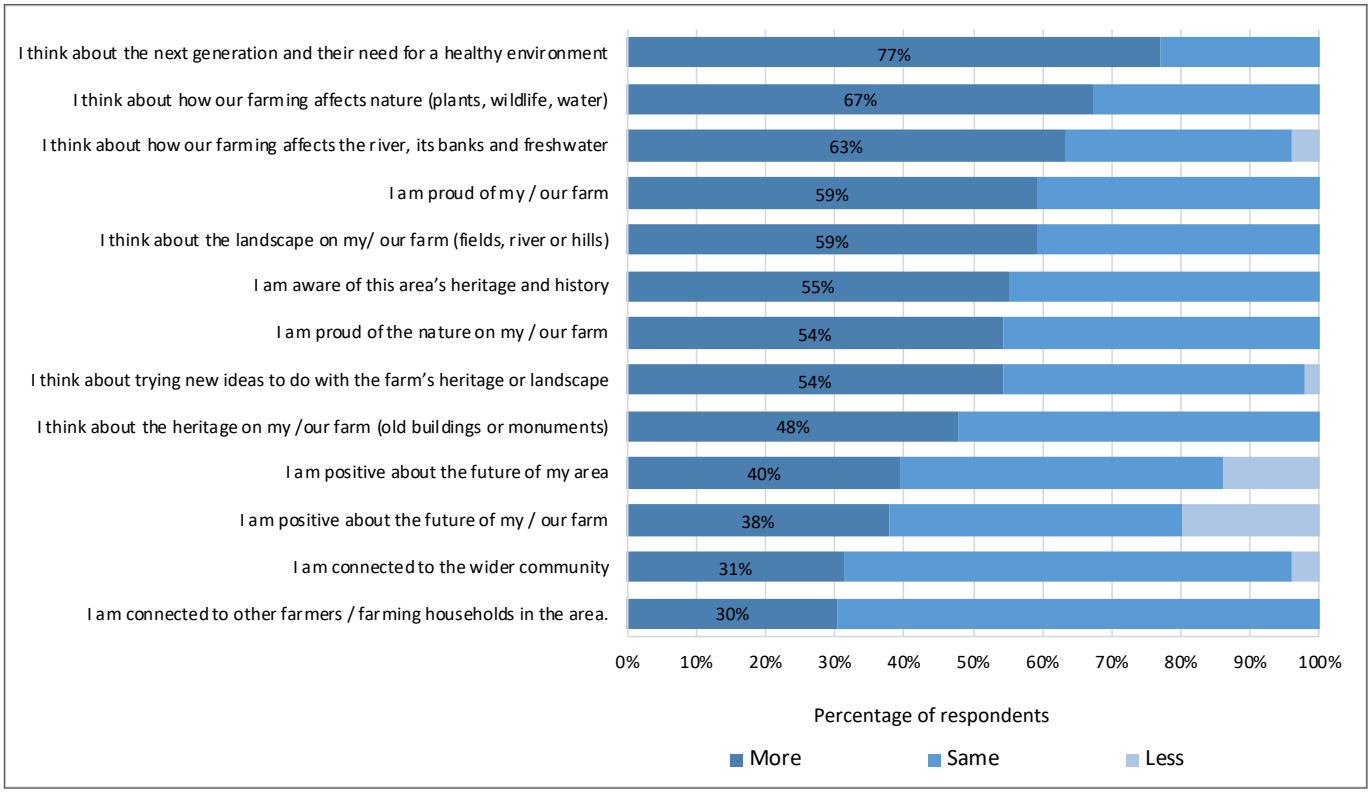


***Figure 5.52**: Farmers' perceptions of their 'before' (KerryLIFE) and 'after' attitudes and behaviours.*

farmer observed, *"the more that's in a scheme the better. No point me being in it and having a lovely farm, if you are next door to me leaving all kinds of stuff into the river."*

Farmers also perceive a need to address fears and concerns about the potential impacts of other EU and State policies, particularly any policies that may impose 'restrictions on farming'. The following quotation effectively captures these sentiments:

> *"You are asking me if I am optimistic about the future of the area, well that depends. It depends on what will come. Will there be more restrictions on farming and living in the countryside? Will there be a biosphere? Will Parks & Wildlife [NPWS] take over? They have their foot in the door … The way the State authorities are going is 'close the gate'. Places are going wild, and that's not ideal for the environment."*

5.3.6 Social and community perceptions

While KerryLIFE was primarily focused on the environment and the economy, the dimensions of sustainable development also include the socio-cultural. Therefore, it is important to factor socio-cultural indicators into the review. Over the course of the initiative, there were a number of community-based activities, such as a football tournament and nature walks (including with the children of Boheshill National School). Farmers were invited to participate in farm walks, and to work with, and share information with, neighbouring farmers.

Figure 5.53, on the following page, shows that the overwhelming majority of farmers felt they were part of a team. Almost all agreed that women were actively involved, while smaller proportions perceived that young people and non-farming households in the catchments participated in KerryLIFE.

Farmers acknowledged and valued the social and community-based activities promoted by KerryLIFE. These served to increase the visibility of agri-environmental approaches, and they fostered and consolidated elements of local social capital (particularly bonding capital). Farmers also reported that investments in fencing, which reduced instances of trespass, helped to eliminate conflicts between farmers. The general sentiment among farmers (as is the case among other local stakeholders), however, is that KerryLIFE was not designed to deal with the locality's socio-economic issues. Thus, while it was appropriate to the area's physical landscape and farming systems, its reach and approach did not map onto the local human geography landscape. As noted earlier in this review report, both catchments have severe demographic and socio-economic weaknesses associated with rural restructuring, depopulation, an ageing population and poor public service provision.

The predominant view among farmers is that KerryLIFE ought to have made more significant inroads into understanding and addressing the impacts of unchecked rural restructuring, so that its investments and outputs would have had wider and more sustainable implications. The gaps noted by farmers are captured in the following sentiments:

> *"This is a forgotten area… Killarney is completely taking South Kerry for a ride. It's like that for years. They market Killarney with pictures of South Kerry. Then, they bring them here and tell them to look at the Ring of Kerry out the window of a bus, but to spend their money in Killarney only... Apart from Germans and the few Irish who do their homework, you wouldn't see a soul up here, and we are surrounded by the Ring of Kerry. What's the point talking about farming, if there is nothing else happening."*

> *"KerryLIFE is a great scheme, but it's like the little Dutch boy with his finger in the dyke. The difference is that the help doesn't come the next morning."*

Farmers (among others) note the need to address the catchments' structural weaknesses, particularly depopulation. They noted that people have been living and working in the local landscape for millennia.

As one farmer stated, *"at one point, there were 4,000 people living in the Caragh Valley, and we had pristine waters"*, while another farmer recommended, *"it is more important to keep the young farmers in business, and to keep them going. It's no good for us to have a national park. If you don't have farmers living in the mountains, you have nothing."*

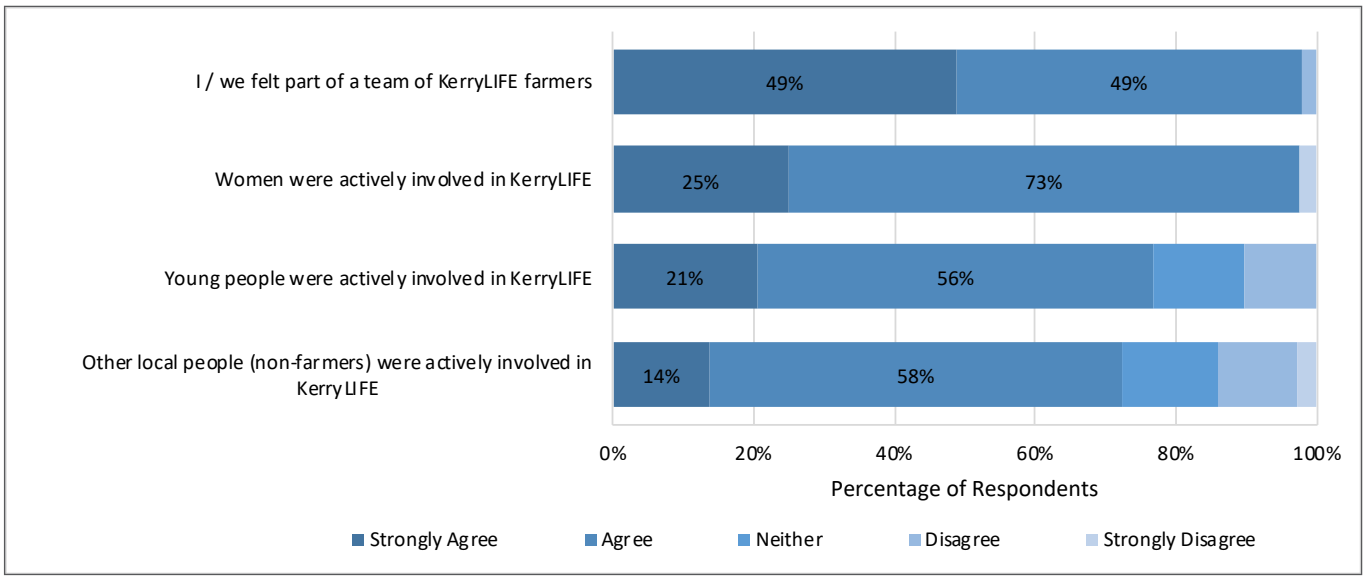


***Figure 5.53**: Farmers' experiences of the social and community aspects of KerryLIFE.*

The farm surveys also revealed concerns regarding the impacts of current and (possible) future landscape designations on the area's socio-economic conditions. These concerns manifest themselves through references to 'restrictions' on farming practices and the perceived inability to obtain planning permission to build a family home. Farmers commented, as follows: *"What will happen here if the whole of Glencar is designated an SPA? Will it be a nature reserve? Why aren't the local people asked for their views? … The EU is talking about SPA designation, and we have completely backed ourselves into a corner by saying the area is special. This is going to give us another layer of paperwork and a heap of restrictions."*

"The Department is running schemes to save the mussels, but nobody is running schemes to save the people. People in Glencar are a dying breed. The planners and Kerry County Council should have been on the steering group."

5.3.7: Succession

The survey data indicate that KerryLIFE has made farmers more optimistic about handing over their farms to their successors. When this was explored in conversation with farmers, it was suggested that the gradual shift towards agri-environmental approaches, rather than KerryLIFE on its own, is responsible for their increased optimism about the viability of farming in the Blackwater and Caragh Catchments. As Figure 5.54 indicates, KerryLIFE itself did not have a significant influence in farm succession planning.

5.3.8: Impacts and legacy

Among farmers, there are positive perceptions of KerryLIFE's economic and environmental impacts. The survey questionnaire presented them with a Likert scale (ranging from 'very positive' to 'very negative') and asked them to rate KerryLIFE's impacts on household income, the local economy, the community and the environment. As Figure 5.55 illustrates, most farmers reported 'very positive' and 'positive' perceptions. The vast majority (90%) of farmers reported that KerryLIFE has had a very positive or positive impact on the environment. To illustrate their views, they referenced:

- The fencing of watercourses and the installation of troughs, as these interventions have ensured that streams and rivers are cleaner
- The increase in natural vegetation, especially in areas that have been fenced off
- The native woodland scheme – including its carbon sequestration roles and
- Farmers' improved access to scientific knowledge that complements their own tacit / local knowledge of the environment.

A large majority of farmers (84%) reported that KerryLIFE has had a positive or very positive impact on household income. They reported that, from the second year of the programme onwards, payments were prompt and timely. They also acknowledged the role of the KerryLIFE team in dealing with the paperwork required to draw down payments, and they complimented the coordinator and his

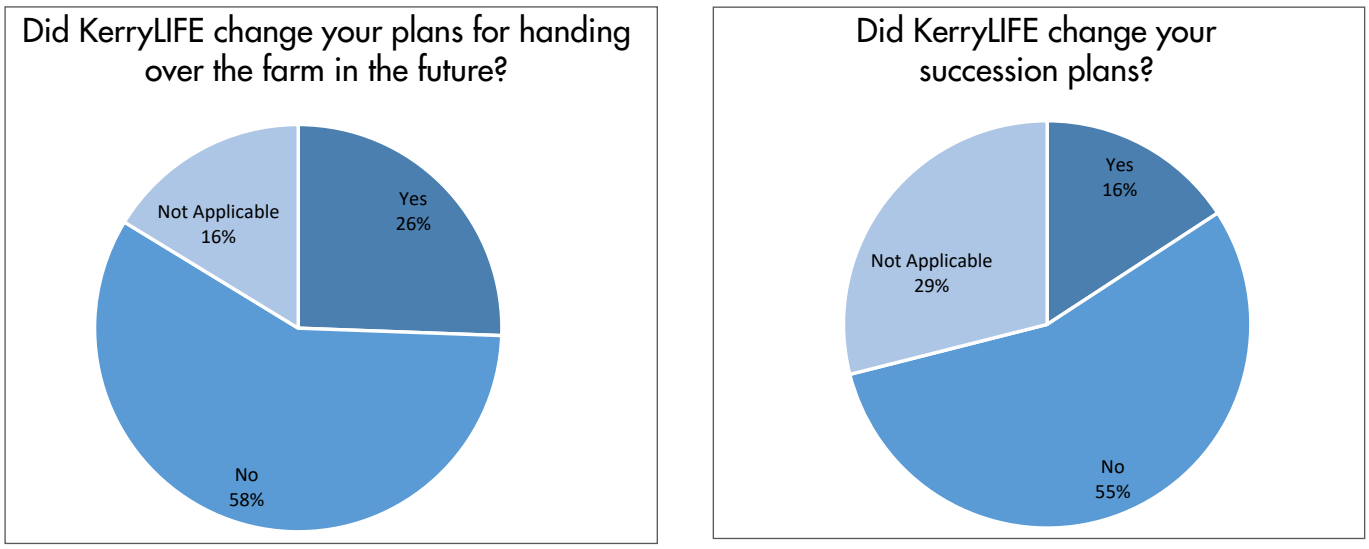


***Figure 5.54**: Succession planning on KerryLIFE farms.*

colleagues for their efficiency and for being clear when making requests of farmers.

The survey findings also show that a majority (albeit a smaller one relative to the previous variables) believe that KerryLIFE had a positive or very positive impact on the local community. They reported that while steps were taken to promote wider community engagement, KerryLIFE focused primarily on farmers and on agri-environmental issues rather than broader local socio-economic factors. The results reveal that more than four in five farmers believe that KerryLIFE has had a positive or very positive impact on the local farming community and the local economy. Local community stakeholders share this view (discussed in a later section under Professional and Community Stakeholders).

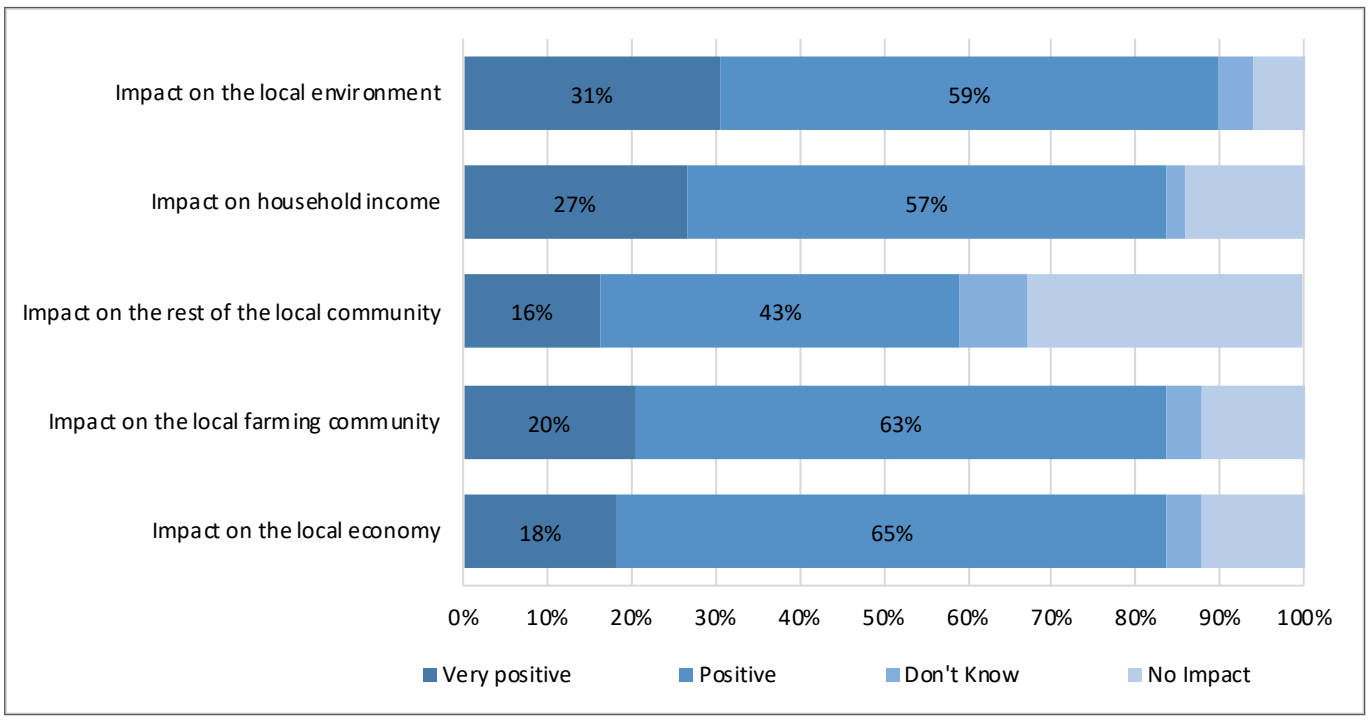


***Figure 5.55**: Farmers' perceived impacts of KerryLIFE.*

Farmers look forward to KerryLIFE's short-term impacts being sustained over time. In particular, they anticipate ongoing access to environmental data, and the interview findings indicate that there is considerable scope to promote citizen science in the locality. The following questions and recommendations, from one farmer, provide a useful summation:

> *"You have to ask as well about the salmon, with the salmon stocks declining. Is that impacting on the pearl mussel? We need to look at things in the round, not just pearl mussel and the farmer. There are other factors … What's its impact on the quality of the pearl mussel? We know it's probably too early to tell, but we expect that farmers will be kept in the loop."*

Other farmers were somewhat more critical in their articulation of the need for clearer impact data and for an approach to agri-environmental measures that takes more explicit account of demographic and socio-economic objectives, as the following quote indicates:

> *"KerryLIFE looks good on paper, but how effective is it? Are the rivers cleaner? Are there more mussels? Did the population increase by one? You are doing an evaluation now, but we were told that it will take years for us to see the impact of KerryLIFE."*

KerryLIFE operated for five years (up to September 2020), and it is evident, from the farmers' data alone, that it has conferred tangible economic and environmental benefits on the Caragh and Blackwater Catchments. There have also been social and community gains, and there is potential to build further on these. Almost all participating farmers had previously participated in agri-environmental schemes, and they questioned what they perceive to be the stop-and-start approach to agri-environmental measures. They stated that they would like to see policy and attitudinal shifts that would promote a more integrated and mainstream approach to the agri-environment. As one farmer articulated:

> *"KerryLIFE was a five-year programme, but farmers were only involved for three-and-a-half years. I was in REPS 1, REPS 2, GLAS, KerryLIFE … It's always short schemes. Five years go very quickly. Why do we have to have schemes that stop and start? Why not make it one continuous way?"*

Several farmers referred to perceived contradictions between KerryLIFE (as an agri-environmental measure) and other agricultural policies. Some reported that their single farm payments were reduced due to their having fenced-off watercourses to create wildlife corridors. One farmer reported:

> *"There's conflict between the schemes, between biodiversity and the single farm payment. Penalising people for having biodiversity … We were penalised because there was a shadow on our mountain. The satellite photograph was taken in the winter. We had to have a big row with the Department [of Agriculture]."*

A neighbouring farmer who had anticipated this problem recounted, *"I wasn't affected for my single farm payment of the area I fenced, because I kept a gate going into it; so I'd let the sheep in there for about two or three weeks a year, and that kept the Department happy."*

Farmers' experiences reveal that there are perceived disconnects and divergences between agri-environmental schemes and other strands of agriculture policy in the EU/Ireland. One farmer articulated this perception in direct language:

> *"The Department of Agriculture's default position is 'you must produce'. They only barely tolerate agri-environmental schemes and will constantly throw up roadblocks. The likes of KerryLIFE can't work. It won't work, unless there is real change at departmental level, and I don't see that happening."*

Another farmer summed-up farmers' sentiments as follows:

> *"The greening payment needs to be sorted out. It's like the Kerry LIFE and the other payment schemes are back-to-back. We are being hit a bit every year. The big issue is with putting in buffers. We want buffers, and nature wants buffers, but the Department – well one side of it anyways, don't want buffers. Taking a percentage off because you have scrub makes no sense in this day and age… One arm of the Department is hitting off the other, when the two need to be working together. They have sorted it out in other European countries, but not in Ireland."*

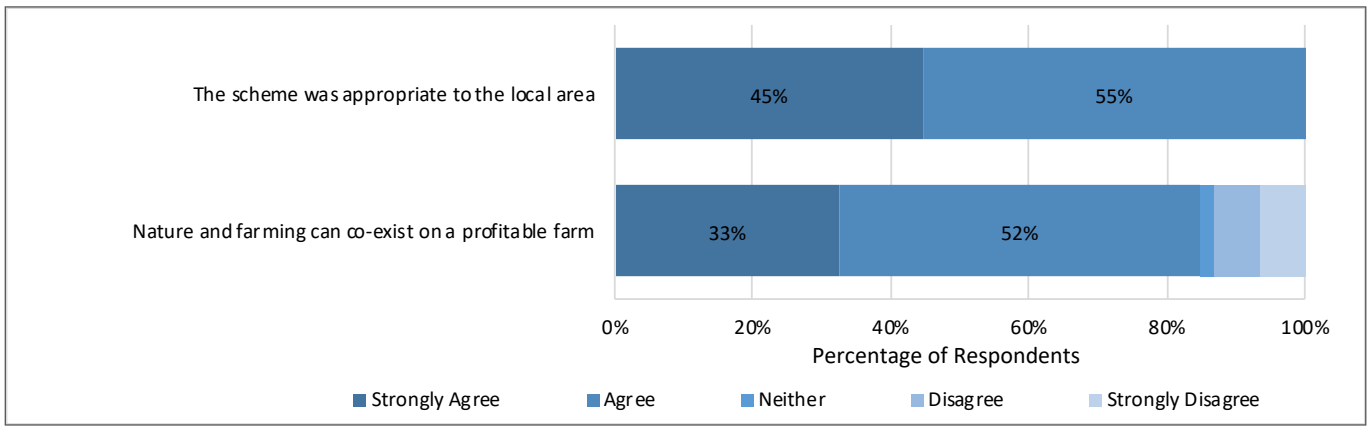


***Figure 5.56**: Farmers' perceptions of KerryLIFE's local appropriateness and agri-environmental potential.*

Figure 5.56 shows that the vast majority of farmers believe KerryLIFE was appropriate to the local area, and that nature and farming can co-exist on a profitable farm. This latter view is, according to most farmers, contingent on policy and attitudinal changes on the parts of senior civil servants, most notably those in the Department of Agriculture, and the EU officials who continue to favour CAP Pillar 1 over Pillar 2.

Farmers also questioned the motives and approaches of the larger farm organisations, whom they perceive to be using the 'small farmer's case to make the argument for the big farmer'. As one remarked:

> *"The IFA [Irish Farmers Association] has a lot to answer for. …. they had fellows from Kerry jumping up and down about agri-environmental, and saying we were armchair farmers. Then the scandal came out about the pay they were giving to their top executives … They have no interest in farmers in South Kerry or in places like here."*

Consequently, farmers were highly critical of the practice among some public bodies to equate or conflate farmer representation with the Irish Farmers' Association (IFA), and they advocate more direct engagement with farmers at local level.

In general, farmers perceive that those who oversaw and administered KerryLIFE were effective and they delivered on the programme's targets. However, they see scope and a need for more supportive and concerted efforts on the parts of all public bodies and greater inter-agency coordination, involving government departments, Coillte and the Forest Service among others. One farmer stated, *"KerryLIFE did project management, but did they tie in with other agencies? They need to tie in with the Marine Institute*[24] *to know more about the factors that intervene in the river. I don't think we have reached full knowledge about the mussels. The scientists need to go to the river."*

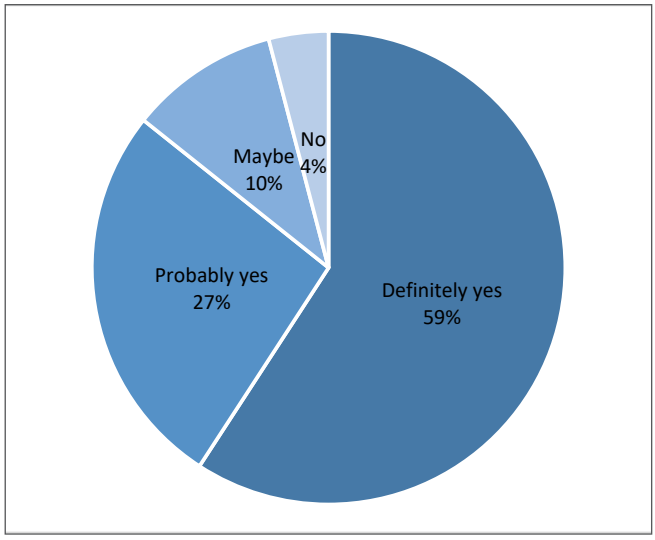


***Figure 5.57**: Farmers' willingness to recommend 'farming for nature' projects.*

The survey among farmers concluded by asking them if they would recommend 'farming for nature' projects to other farmers. As the pie-chart in Figure 5.57 indicates, the vast majority would be happy to do so. Finally, the importance of communication and clear metrics are underscored by farmers' perceptions of different standards being applied to public utilities working on their lands, as the photographs in Figure 5.58 (overleaf) suggest, which is located within 1km of the Caragh River. While farmers support infrastructural connectivity and investment in economic development, they refer to the need for fair treatment of farmers relative to the way in which others can work on the landscape.

[24] In this context, the farmer was talking about parallels between the lifecycle of the FWPM and that of mussels in the sea.

***Figure 5.58**: Lands affected by electricity infrastructure upgrading works, autumn 2020 (located within 1km of the Caragh River).*

5.3.9: Summary

The consultations with farmers who participated in KerryLIFE reveal general satisfaction with the programme. The vast majority acknowledge its economic contributions to the catchments – both to farmers and to local businesses. They contend that agri-environmental schemes / programmes need to incorporate a competitive financial package that makes economic sense to farmers. They also recommend that such programmes become mainstreamed, or that, at the very least, they operate over a substantial timeframe (e.g., fifteen years – as is the case with some forestry schemes). While noting that the KerryLIFE programme (2015 – 2020) is at its administrative end, they see the need to continue its processes. Their commitment and expectations put an onus on the NPWS, Department of Agriculture and the other relevant statutory bodies to ensure that practices and mechanisms are mainstreamed. They also suggest that bodies, including the Management / Stakeholder group(s), should continue to meet and endeavour to seek out opportunities to ensure the sustainability of the ecological attitudes and best practices that were commenced and piloted under KerryLIFE. Farmers are clear on the need for ongoing data collection, and they demonstrate a willingness to participate in citizen science. It behoves the statutory bodies to respond to farmers' generosity of spirit and to support capacity building to ensure co-creation of knowledge.

Farmers' observations and feedback indicate that on-the-ground practices were collaborative, and they pay tribute to the KerryLIFE staff for their ability to engage meaningfully and respectfully with farmers. While they are complimentary about most on-farm practices, they continue to have some questions and misgivings about some of the advisors' recommendations, particularly those that concern drainage. Some report having had bad experiences due to blocked drains, and their perceptions underscore the importance of ongoing data collection and continuous feedback to farmers, on the summative outputs and impacts of KerryLIFE and the emerging evidence from other agri-environmental initiatives.

KerryLIFE was designed as an agri-environmental programme, and, from a farmer's perspective, it has had notable economic and environmental outputs. Over the course of the past five years, this agri-environmental model interfaced with communities and with social structures and dynamics in Iveragh. While KerryLIFE had some positive social aspects, its socio-cultural outcomes were not as tangible, strategic or impactful as its other dimensions. Such shortcomings

appear to be associated with its top-down mode of decision-making and its lack of embeddedness within local governance frameworks. Thus, farmers tend to perceive KerryLIFE as something that was conceived externally and which, over time, adapted to Iveragh, although not fully. The KerryLIFE experience suggests that stronger local involvement in design, governance and monitoring would have strengthened its socio-cultural reach and impacts.

KerryLIFE farmers' recommendations point to the need for attitudinal, administrative and policy changes at EU and government levels and among the larger farm organisations. Locally, farmers have made significant changes, but at national and EU levels, decision-makers have been less open to change, and many continue to promote productivist agriculture, while failing to take due account of social and geographical conditions in upland areas such as Iveragh. Thus, there is a general need for more bottom-up inputs into the formulation of agricultural policy and a commensurate resource shift from Pillar 1 to Pillar 2 in order to adequately support farming households who have embraced environmentally friendly farming practices and related innovations. This imperative is further underscored by the need to ameliorate climate disruption and to give fuller effect to farmers' roles as suppliers of ecological goods and services. Indeed, such a policy and resource shift would contribute to balanced regional development by ensuring a greater resource allocation to South Kerry and other areas along the western seaboard, and a recalibration of the policies that have favoured intensive producers in eastern lowlands over the past decade.

5.4: KerryLIFE Professional and Community Stakeholder Perspectives

While farmers were the primary stakeholders in KerryLIFE, a broader range of stakeholders were also integral to the everyday and long term implementation of the project objectives, and can be categorised as follows:

- Project Team members directly employed by the project;
- Associated beneficiaries i.e. one of the co-applicants for the project, and representing that agency locally or nationally; and
- Community representatives i.e. with a formal role in running a local community group or development company.

This section captures the experiences of these 'Professional and Community Stakeholders' (PCS) who through their professional work or their voluntary community activities engaged with the project, either throughout its lifecycle, or at particular periods in its implementation. The data and analysis presented here are drawn from face-to-face semi-structured interviews with the stakeholders, and seek to firstly deepen the understanding of the primary stakeholders perspectives, i.e. the farmers and farm householders, and secondly, to broaden insights into the operational, governance, and outreach aspects of the project.

Based on the Social-Ecological System (SES) Framework that has been applied to this review, stakeholders that engaged with KerryLIFE in a professional and/or community capacity are identified under two key elements of the conceptual framework:

- Governance Systems (GS)
- Actors (A)

Within those two elements, as either participants in the project's governance systems or as actors in the project area, the stakeholders had direct involvement with various 'Focal Action Situations', experienced Interactions (I), and influenced the Outcomes (O). These Actions, Interactions and their Outcomes all occurred within the wider settings ranging from the project's Resource Systems and Related Ecosystems to the Social, Cultural, Economic and Political contexts. All of these key elements of the SES were referenced or indicated during the interviews with the Professional and Community Stakeholders, which were conducted around the topics of engagement and impact of the project, as well as the areas outlined in the Methods section.

5.4.1: KerryLIFE Design Process

5.4.1.1: Governance Systems

5.4.1.1.1: Participants

A multi-actor approach was adopted for KerryLIFE, in line with the criteria of European LIFE projects. These stakeholders were drawn mainly from national bodies which included: the Department of Culture, Heritage and the Gaeltacht (DCHG); the Department of Agriculture, Food and the Marine (DAFM); the Forest Service; Coillte; Teagasc and Pobal, along with the local development company, South Kerry Development Partnership. Most of these actors were involved in the design of the project application, and in the implementation of elements of its objectives during the period of the project. Once the project began on the ground, the Management Structure (see Appendix 8.1) was structured around the core 'Project Management Group (PMG)' which expanded to include local farmer representatives.

5.4.1.1.2: Management Structure

The Project Management Group (PMG) was established as the over-seeing level of the management structure, through which all decision-making and actions would be approved. The Project Stakeholder Group (PSG) was established at the beginning of the KerryLIFE Project, for the purpose of providing a local link to encourage local, community ownership and engagement. It became apparent in the interviews that the running of the PSG was problematic, and in reality, while the other elements of the KerryLIFE project management structure operated effectively, the PSG stalled. However, a number of interviewees were positive about the PSG stating that it allowed the community to engage with the project and to understand how the measures were impacting locally:

> *"[It was] where the different local stakeholders would have explained to them or give a presentation on the project and how it was developing and maybe where they could see improvements and [get] input from the stakeholders" (PCS4).*

The PSG was treated as an open forum for both catchment communities to keep up-to-date with the project, and to provide feedback to the team. However, while there was clearly an effort to engage the two communities in this manner, the PSG was the least effective element of the management structure due to its membership being undefined and broad, and its remit undefined. This had a negative knock-on effect on farmer and wider community integration (discussed in a later section), especially at the start:

> *"… one of the things that didn't work all that well was … a stakeholder committee [the PSG] and we used to meet from time to time; we would normally have a stakeholder meeting at the same time as we'd have the Project Management Group. And with those stakeholder meetings in the Hall in Glencar, in the community centre, they weren't very successful in so far as they tended to attract either scientific or other academically minded people … they were always very interesting but didn't have necessarily a great attendance but X twigged pretty early on that a farm visit was a vastly better way of having a local stakeholder meeting than doing something in the Hall … especially … in the spring or summer when people want to be out working at night-time on the farm, rather than hanging around halls" (PCS2).*

The ineffective design of the PSG, while well-intentioned, resulted in a breakage in the 'local link' with community actors. While individual relationships were deemed largely positive and successful by farmers and the professional and community stakeholders, a defined remit and engagement strategy for the PSG could have strengthened the local feedback loop.

5.4.1.2: Project Design

5.4.1.2.1: Top-down Approach to Design of KerryLIFE and its Governance System

The project was designed with limited local input. During the application stage, which was led by DCHG, a largely top-down approach was adopted, supplemented with County Kerry based consultation. At the application stage, the South Kerry Development Partnership was involved, but only in a limited capacity:

> *"I would have seen the importance of getting everybody together into a room and when we went to Kerry first as part of the development of the application, we would have been quite acutely aware that we were landing the M50[25], or inside the M50, into Kerry and … that doesn't*

[25] The M50 is an orbital motorway around Dublin city, the capital of Ireland and location of its central government.

always work out very well so we would have had meetings with the community" (PCS1).

The PMG was largely comprised of the national agencies, and of representatives that were not working locally. The PSG was identified in the Management Structure as then providing the local perspective on the project, but because this was not given a clear structure, membership or remit, the local perspective (apart from the farmer representatives) was not given a strong platform and integration within the community was not as strong as it might have been. In many ways, this failure of the PSG was compensated for by the locally-based nature of the project team, and the openness of the team members (discussed below). Negatively, it may have impeded greater reflection locally on the success or otherwise of the project on an ongoing basis:

"I think this probably reflects maybe on the structure of the project … in terms of the various partners and what each was bringing to the table, so we focused on trying to deal with [one-off projects such as] with the local walkway" (PCS1).

5.4.1.2.2: Focused Primarily on Resource Systems and Secondarily on Socio-economic Settings

While the remit of the project was ecological, there was strong recognition of the potential for social and economic benefits to emerge, not only for the direct participants, but also for the broader community:

"So, the project would have primarily had a conservation remit of dealing with the farmers and forestry and I am going to make no bones that was the core of our work. But then we were very open to tourism or … added-value initiatives, as … adding to the project but [just] as that: adding to the project. And they would have been … identified in the grant. In the running of day-to-day and other commitments, it didn't quite materialise to maybe the full extent. It would have needed more time allocated to it, not just the project team, but also from the partners to support it and it wasn't quite clear as to where, what exactly was the objective of it" (PCS1).

During interviews with stakeholder, this primary focus on the resource systems was emphasised by some of those who engaged periodically with the project. For example, there was some criticism from community partners of the 'stop-start' nature of certain elements of the project. One instance of this was the Beef project which investigated the potential of producing specialist beef from the area. The Beef project included a limited number of farmers and livestock, but experienced stakeholders believed that with investment there is potential for such specialist produce. The Ring of Kerry Quality Lamb group were brought in to advise on setting up a speciality beef product:

"The disappointment, I would have is nothing ever came of it … (but) it can be very hard to get people coordinated and that really was the issue, and it would have meant a big change in farming practice in the area to be finishing cattle, but that would be genuine interest there by farmers" (PCS8)

Lower output native breeds considered more appropriate on the marginal land of the Iveragh do not meet market requirements. For instance, upland farmers cannot attain the more lucrative finishing weight thresholds required by the conventional beef or lamb markets and have to sell their live animals on to lowland farmers with better land. This market mismatch and the failure to date to develop a joined-up, viable supply chain and market for HNVf outputs is a barrier to achieving added-value meat labels that reward HNVf and sustain farm livelihoods in the uplands.

"[KerryLIFE] did want to bring out a beef label. …. It's a very difficult thing to do. The Burren didn't manage it either. So, there's a lot of contradictions, but that's inevitable when the market is going one way. It's really based on free-market economics and production" (PCS13).

Additionally, the design of KerryLIFE did not depart significantly from what farmers were used to:

"KerryLIFE wasn't really a results-based project. It was a very good pilot project, but 50% of their subsidies went for infrastructure, so that's attractive to farmers anyway and 25% were prescriptive measures, like they'd have in GLAS and then 25% was more evidence based. Very much so [a hybrid scheme]" (PCS13).

5.4.1.2.3: Low Consideration of Women and Young People in Farm Households

With the primary focus on resource systems and ecosystems, and only a secondary consideration of broader socio-economic actions (such as added-value food and recreational infrastructure), the design process did not take full consideration of the important roles of women and young people from the outset and the influence they have on farmer decision making (this is demonstrated later in a discussion on the adoption of KerryLIFE woodland actions). There was a call from professional stakeholders to adopt a 'whole-of-farming community' approach as an important tactic for reaching the next generation of farmers and for including women in their capacity as key influencers of young people:

> *"All the young people in those areas, they tend to go away, at least initially. Some might come back as well, but if you do want farmers to stay on and try and make a living from farming and to have it more interesting than that traditional type of subsistence thing, well then that's a debate that needs to go on in the whole community and within each household really. We've been concentrating on these male, elderly farmers, but we definitely need the women and these young people coming up, just to show them that farming could actually be very attractive as a way of life" (PCS13).*

> *"We were the only three cars driving out to Glencar every morning at work time; every other car was going the other way you know. Because there's no jobs really in Glencar" (PCS1).*

The future of HNVf uplands will be played out through the decisions and pathways of their young people in particular. Women in farm families are some of the most important influences on young people. Ensuring that 'farming for nature' projects are inclusive of women and young people recognises that there are very well-established pathways out of rural areas to urban centres for further and higher education, and to work, both in Ireland and overseas. Based on the socio-economic profile of the Iveragh uplands, the vast majority of young people and their parents have good reason not to perceive such HNV farming areas as places of opportunity:

> *" … at one of those [KerryLIFE] stakeholder meetings … a farmer [with several children] … named everywhere in the world they were … they had done extremely well in [professional services], he had highly educated every one of them and they were in the four corners of the world. [When asked] 'who have you for the farm now?' … he didn't have anyone. But for him that was a success that he had done that. He said maybe one of them might come back at some stage, but he wanted them to have the opportunity to make [a] living and … come back for hobby farming or something …" (PCS13).*

Thus, a more inclusive, household-based framework would recognise the key on- and off-farm roles of women in raising families and supplementing farm livelihoods, as well as their needs in terms of local services. Research and place-based projects do not always consider them enough. Such initiatives must work to involve women in farm households explicitly and overcome the reluctance they may have in participating. Traditional gender roles may constrain the voice of women in farm households, at least publicly, and this could explain why research and projects can overlook them. This goes back to the importance of understanding the social context in which a place-based project is located.

> *"I suppose that's the women's place, they've often been seen as the power behind the throne …. And it's often the women, especially if they marry in from outside, she has new ideas, she can be very innovative provided the community will go with her" (PCS13).*

5.4.1.2.4: Farming & Wider Community Integration

Not adopting a strong partnership approach from the start with local stakeholders, especially farmers, was evidenced by the absence of farmers initially from stakeholder meetings.

> *"… at one of the early stakeholder meetings, it must have been the first one, back in the community centre (and it was great that they were locally based), it was all these forestry people and these supposed experts and there was only one person from the community … there was no farmers there at all. They can't say that it was developed based on local knowledge and local participation" (PCS13).*

Nevertheless, KerryLIFE was acknowledged for its success over time in creating a community of practice in spite of the challenges of such local socio-cultural factors as insularity and isolation that can be found among some in more remote communities.

> *"Not that [the project promoters] didn't try [to engage local people early on]. Remember those are quite difficult communities – the Glencar area, the Carragh catchment, some of those would be very difficult areas to work in. People are quite isolated." (PCS13).*

Having pride in one's heritage, both natural and cultural, is more likely to result from farming practices that are ecologically sound and complementary with cultural landscapes. Awareness and celebration of such heritage at community level is important in order to help recognise, value and sustain appropriate farming practices. It highlights the importance of place-based projects taking a broader socio-cultural and partnership approach in the design of such initiatives to ensure they are locally appropriate and secure buy-in from the start. It also points to the need for team members who have expertise and experience in community development.

5.4.2: KerryLIFE Focal Action Situations

5.4.2.1: KerryLIFE Interactions and Outcomes

5.4.2.1.1: KerryLIFE and Farmers

Once the project started, KerryLIFE engagement with the farmer participants was central and an integral part of the process. There was a range of phases in gaining the trust of farmers, allowing space for the project team and the farmers to become familiar with each other, and for the farmers to be selected as participants and commit to the project. In this section, Interactions and Outcomes are considered together.

Engaging the farmer participants in KerryLIFE could be identified in four phases:

5.4.2.1.1.1: Establishing Locally

The project sought to adopt a place-based approach, but fell short in this regard due to lack of universal farmer participation and governance challenges. This approach, coupled with Community-Led Local Development (bottom-up), provides the foundation for rural development programmes such as LEADER which centre on multi-actor engagement and policy co-design. There are many aspects of KerryLIFE that, whether by accident or design are related to the principles of bottom-up, place-based development. A number of early actions in the project, ensured that KerryLIFE would be strongly located with the two catchments:

> *"… the most direct signal we could have possibly given, we could just as easily have been based over in Killarney, in the National Park, in offices or office accommodation there. We could have been renting an office in Kenmare or Killorglin; in the two market towns near the project area, but instead we based ourselves within one of the two communities" (PCS1).*

By choosing to locate the KerryLIFE office in the Glencar Community Centre, the project team was signalling to the communities that they were committed to the area, and open and willing to get to know local people and engage with local activities. While the project team learned how best to run the project in a number of ways, ranging from past experiences, mutual learning from colleagues, and shared experiences with other projects, the decision to locate the office in Glencar was born specifically out of learnings from the BurrenLIFE and AranLIFE projects, place-based 'farming for nature' projects run elsewhere in Ireland (see Dunford and Parr, 2020; McGurn *et al.*, 2020):

> *"… we had seen in the Burren, that it had worked with the Burren project, that they've been locally based; the AranLIFE project would have started the year before and they were based on the islands. And I suppose we just took a decision that we wanted to show commitment to the community" (PCS1).*

The location of the office in Glencar was identified by a broad range of interviewees as having a positive impact locally, including being vital to building up relationships. This place-based approach gave a presence to the project:

> *"[Locating the office locally] was great for here, because the farmers knew [the project team] were there near them … It was handy that way. And then we had the Hall where they could have their meetings and things as well, so I suppose it worked hand in hand, they were able to do everything together" (PCS12).*

"I think that local base, being based there locally, all of that is really good [for relationships]" (PCS13).

5.4.2.1.1.2: Gaining Trust

There were mixed responses and perspectives on how quickly the project got established locally, and gaining trust was vital to getting participants onboard. Building trustful relationships entailed meeting with farmers, both in groups and individually:

"… on the farmer side of it, I was keen to get started as soon as possible. You know, because they were the people who were going to be delivering the measures to improve, or to help try and improve, the conservation condition of the freshwater pearl mussel. And so, I wanted to meet them as soon as possible so I suppose some of the first things we had was information evenings, talks and there's nothing like meeting someone. I feel you have to meet someone; in some cases, one on one, because other people may not ask questions at meetings" (PCS16).

Staff recognised the understandable reluctance there may have been among some farmers about committing to the project (in terms of the work it might entail or the unwelcome attention it might attract) and the value of securing the support of those perceived as local leaders in the farming community:

"… in some cases, there would have been a bit of maybe scepticism, or no that's not [the] right word: They were kind of saying beware, maybe, you know, that might be the, the initial thought because maybe it's going to be fairly demanding; it might be onerous. It might put us in the spotlight, those kind of thoughts" (PCS4).

"I think there was a need for local engagement, a strong need. …. it's human nature until that openness is there and that level of trust being built there's bound to be a bit of inertia in the initial stages and I wouldn't expect otherwise" (PCS4).

"… it was a case of getting some owners involved. There might be role models in the area they [the Project Team] might have profiled, and maybe even if they [the farmers] see certain people getting involved that would lead to additional participation when they hear 'maybe it's not as bad as we thought, or it's actually beneficial so to be honest, it's probably worth joining' " (PCS4).

Respondents described how KerryLIFE team members did succeed in building trust in time through their own relationship skills:

"… you'd notice at break-time or when they'd stop for lunch, all the scientists or the experts were on one side and the farmers were all around their cups of tea talking among themselves. The only person that can break down a divide like that would be someone like Brendan Dunford[26], who's been 20 years in the doing of it … Initially there was a lot of suspicion there, it would be a very closed mentality. But in a place like that, you can never underestimate the power of the individual. For people that live in the country, the person is very important, if they like you. I think [Project team member] was a huge asset there. He was able to relate to the farmers and they did come on board. …. Trust is a very big thing. Those farmers, they're less interested in the detail rather than 'Do I trust this guy or not?'" (PCS13).

But good relationships cannot be left up to the skills or personality of any individual. An emphasis on trust and relationship building needs to be embedded within such projects so that it pertains across all of the staff and will not be lost if certain team members move on:

"Longevity, that's the problem with all these projects really. …. Because you can't have a programme centred solely on a person and a personality, which when they go it's gone'" (PCS13).

5.4.2.1.1.3: Information Sharing & Consultation

KerryLIFE staff held information meetings to outline the benefits of joining the project. There were frank exchanges at meetings and those attending could air concerns about the project. Staff also took the necessary time to discuss the project. This informative and consultative approach encouraged local farmers to apply to the project:

"… the first night there was a meeting about it, there was kind of opposition to it, but it worked out from there" (PCS12).

[26] Manager of a 'farming for nature' programme in the Burren landscape of County Clare in the west of Ireland for decades.

"There's the whole financial benefit, it can't be underestimated, as well, that is probably the driver, Forestry Premiums for 15 years are a driver, but that would be an obvious question [asked at meetings]: what kind of financial incentive would be in it and definitely that would be important; that's the reality; as well as the environmental benefits. Yeah, selling the environmental benefits takes a bit longer, I think, but as people see positivity, they'll probably buy in more as well" (PCS4).

5.4.2.1.1.4: Participant Selection & Commitment to Project

KerryLIFE staff used a whole farm planning approach and selection criteria to identify the most suitable farms for the project:

"We would take what we call a Whole Farm Planning approach, where we are looking at how it might fit in with existing farming enterprises and schemes, and maybe locations, and again give background information on the types of funding that was available. The benefits of it; will they be gaining financially and would there be economic and social gains there as well" (PCS4).

"… we had our own selection criteria and who would be supported and there was five or six different criteria, but it was kind of based largely around proximity of farms to, I suppose, freshwater pearl mussel habitat" (PCS16).

Farmers were able to agree to some project actions easier than others. KerryLIFE staff gave them the time necessary to fully consider actions with longer-term implications before having to make a final decision:

"Initially, and even I know for a good while in terms of getting somebody on board to put in a bit of native woodland: that is a bigger decision than somebody just fencing off along the water course; actually dedicating some of their land to native woodland but I think that was a kind of a slow burner that got momentum after some time" (PCS4).

"Anyone who joined up I think were happy enough basically" (PCS12).

KerryLIFE staff described the importance of understanding farmer decision-making around project actions within the context of their entire farm household, especially with regards to farm successors:

"There were challenges in particular in engaging farmers with forestry measures. For some, the longer-term financial returns were off-putting, particularly for native woodland planting. While the environmental returns are very high, the financial incentive is long-term. This is very challenging for older farmers who do not have [a] succession plan or an identified successor. If no successor has been identified then that has implications for current decision-making on the land and for the farm, and [that farmer] may not really be as concerned as somebody with a successor, that might want to continue the farming on the land, maybe there's bigger challenges and there's a deeper consideration process in terms of what's best for the farm [when there is a successor]" (PCS4).

5.4.2.1.2: KerryLIFE and the Wider Community

It is clear that the two catchment communities, both farming and non-farming, as well as their participation in project-related events and their awareness of the FWPM was important to the project team.

"Very few knew a lot about it [the Pearl Mussel]" (PCS16).

"I remember talking to farmers and one fellow only knew about it because when he was a kid, he was crossing the river and he stepped on a mussel and it split open his foot" (PCS16).

And, once the project was in progress, those involved in KerryLIFE were keen to acknowledge and include local knowledge and folklore about the FWPM. This helped to reconnect local people with their own socio-cultural heritage:

"… the older people are very happy hearing all about it, like they had stories themselves about it [the Pearl Mussel]" (PCS12).

Broad community engagement, through formal and non-formal outreach activities, was deemed by the team as an important aspect of this place-based project. However, there were a number of challenges

related to this despite the successes (outlined below) and the general positivity towards the project team from all stakeholders. For the project team, their openness and willingness to engage locally was a strength of the project:

"… it was an optimistic project" (PCS16).

"… we made it work by figuring out how it works" (PCS1).

"… you have to work with people" (PCS1).

"It was a demonstration project, a pilot project. It showed people what could be done, the fencing off and the water drinkers and all of that. Maybe the biggest thing to come out of it is the level of awareness-raising that they did. …. [KerryLIFE] did bring [farmers] together. …. I think they did enjoy those demonstration days or early on they took them up to the Burren, all of that is very important awareness raising. …. [At later] stakeholder meetings and … open days … There were a whole load more [participated], the men came out, there was much more local involvement …" (PCS13).

Interactions that focused on the community can be categorised into two types: (i) formal events and activities; and (ii) informal or incidental interactions.

5.4.2.1.2.1: Formal Engagement

The formal events comprised a number of activities which took place within and across the two catchment communities during the time of the project. These included:

- **School Logo Competition**: To mark the beginning of the project's involvement with national schools (N.S.), the project team ran a competition for children from five primary-level schools[27] – Boheshill N.S; Gloungaguillagh N.S; Blackvalley N.S; Scoil Eoin N.S., Tahilla and St. John's N.S., Kenmare – to inspire the logo for the KerryLIFE project in May 2015. As part of the brief given to the children, they were asked to portray the freshwater pearl mussel in the logo, as well as including farm, forestry and people in their entries. A total of 93 entries were received from four primary schools in the area. Renowned artists Pauline Bewick and her daughter, Poppy Melia, selected an overall winner along with a winning entry from each of the other schools.
- **'Pearl Shield' Football Competition**: involved with the two competing local GAA clubs in the catchments: Glenbeigh/Glencar and Templenoe under-10s and under-12s. The 'Pearl Shield' was held annually from 2015 – 2019 (Figure 5.59).
- **ESB Tree Week**: In March 2016, the KerryLIFE Project in conjunction with Coillte gave an indigenous sapling to all of the children in Boheshill and Glounaguillagh national schools to promote ESB Tree Week.
- **Bat Walk**: a public talk on the Lesser Horseshoe Bat in the Blackwater Tavern was followed by a guided bat walk at Dromore Football Field in May 2017.
- **Mid-summer Moth Madness**: In June 2016, a wide variety of moth species were trapped over two nights with approximately 40 people in attendance.
- **Pride of Place**: also in June 2016, KerryLIFE participated in the IPB Pride of Place Award in association with Co-Operation Ireland. Pride of Place is an all-island competition that acknowledges the work that communities are doing all over the island of Ireland. From Glencar, 19 groups in the parish from Parent and Toddlers, GAA, Takewan-do, Rural Transport, sheep dog-trial, sheaf tossing, Community Care, Glencar Community Centre and KerryLIFE participated. It brought together the whole community with a huge number of people contributing posters for their group, tidying up the parish, preparing the Community Centre, school, playing field and the many bridges and road verges along the 23 km of the route taken by the judges (two former County Managers). The KerryLIFE project played an active role along with Cappanalea Outdoor Education Centre in co-ordinating and facilitating the various groups wherever assistance was required.
- **Beef Tasting Event:** This was held in November 2018.
- **2019 KerryLIFE Conference**: Run in May 2019, the conference presented the experiences and results of the KerryLIFE Project, with study visits (Figure 5.59).[i] As the list above identifies, the project engaged with non-participants in and adjacent to the two catchment areas.

School

Engagement with local schools helped to develop awareness of the Pearl Mussel, with team members identifying that the children's interest meant it was more likely that parents would also become aware, and perhaps older siblings too:

[27] Primary-level children attending national school are aged 5-12 years, generally.

"What they did with the schools there, this awareness raising … was very good, and having the young PhD student who was from the area going into the schools and showing them a mussel, that they're in one of the richest areas for pearl mussels and none of them had ever seen it. But as you go to the secondary school level, they're the kids that are being transported in and out to Killorglin or wherever everyday" (PCS13).

"And we could hear back through the parents when we would have been into school and the messages would have come back home and that would obviously have been not just sort of participants, that would have been to the wider community as well. So, it was much easier to engage with the wider community indirectly through the school visits" (PCS1).

Sport

Again, getting children involved and aware of KerryLIFE and the Pearl Mussel was done through football:

"…Blackwater-Templenoe is one Club in a district on the southern side of the peninsula; and Glencar-Glenbeigh is the second club and they play in the northern side of district. So, it is very rare for these two clubs, even though they back on to each other, to encounter each other. So, there was a novelty in that, and we set up the 'Pearl Shield'" (PCS1).

Thus, KerryLIFE's outreach activities with children through school and sport were instrumental in spreading awareness across the community.

KerryLIFE engagement activities with members of the communities more generally were described in positive terms by respondents for being not only educational but sociable and these helped to create a sense of goodwill towards the project itself:

"I think generally there would have been a very positive perception of it [KerryLIFE], and even it went beyond just a technical and the environmental side in terms of … a social element as well … there was evenings, you know, there was football competitions. … the schools were informed and that as well. So, I think there was a wider community benefit" (PCS4).

***Figure 5.59**: Examples of KerryLIFE outreach activities: Pearl Shield' Football Competition (left) and KerryLIFE Conference (right).*

5.4.2.1.2.2: Informal Engagement

Not only did the football matches give all members of the community, project participants and non-participants, and the project team the opportunity to engage in a positive community event, they helped to bring conversations around conservation and biodiversity into everyday settings. In addition, interactions with the community at events meant that a familiarity could emerge and relationships could build:

> *"… so we would get to know people then through that and you would salute [say hello to each other]. Then maybe you might meet them at the Challenge Match or, you know, the Cattle Show, or whatever it was and you might say, "Sure, I drive past you every morning in the car and nice to put a face to the name" and so on and so forth. So, I think we became known, you know, "Ah ye'r the ones working up in the centre", you know. And we're like, "Yeah, that's us". So, if we didn't have that we'd be blow-ins, so that physical presence couldn't be stressed enough; the value of it. Great decision" (PCS1).*

Thus, formal engagement activities combined with the informal interactions that resulted from having a local office base helped to integrate KerryLIFE into the wider community.

There were other incidental, added-value outcomes associated with KerryLIFE such as interactions with the Glencar Senior Citizens Community Centre, run out of the same building as the office. Due to the remit of the Project, and restricted budget beyond that remit, there was a limited range of more informal and spontaneous community outreach activities. Any such outreach activities that did occur were considered very positive over the life-time of the KerryLIFE Project, and are contributing to the legacy of projects such as these in the localities.

5.4.2.1.3: KerryLIFE and Local Business

Given the nature of the project in terms of the Farm Plans and Measures, other than direct procurement by the project, farmers were free to source and purchase equipment and materials from any farm supply merchant they chose. While it is difficult to directly measure how much was spent on these materials locally, there is recognition that apart from specialist equipment, farmers tended to buy from suppliers they had existing relationships with and who were located locally in the main:

> *"… we would have a strong sense that they shop locally. So, the vast majority of the farm materials would be bought in probably about four different merchants - one within the project area and the other three nearby within the local market towns, so Killorglin, Milltown maybe, and Kenmare, generally speaking. So that kind of farm material would have been bought there, so fencing, posts or water troughs, you name it. They would have generally purchased where they always purchase" (PCS1).*

> *"… we would have set a fixed price per metre, or per unit, whether they got it and they shopped around and if they got it cheaper that was their business but we couldn't really go into the procurement of that. It was not necessary. Farmers are very used to buying their own and they have their own preferences and their own connections, and I wasn't getting involved. It would be like getting involved in someone's marriage! Farmers are very loyal to their suppliers" (PCS1).*

It was verified on site visits during this evaluation process, that local shops and businesses felt some benefit from the Project Team being physically located within the Caragh catchment, and in being very present in Blackwater too. For example, team members made concerted efforts to use the local Post Office or buy something in the local shop:

> *"I made a point of going into the shop and buying something, and I used to say to other people 'just use the shop' or 'use the post office' because, these things might not always be there" (PCS16).*

Farmers and retailers reported that, apart from fencing contractors from the neighbouring rural region of West Cork, those who supplied materials to KerryLIFE were local businesses (hardware and farm-supply shops). As one local business person remarked:

> *"I saw KerryLIFE money coming in the shop door and I will miss it when it's gone" (local shop owner; field study observation).*

In addition, the majority of PMG meetings were held in the Glencar Community Centre, as well as other activities such as Information Meetings and meetings of the PSG. This resulted in additional demand for food and accommodation services for visiting members of the PMG, which were sourced locally.

5.4.2.1.4: KerryLIFE and Professional & Community Stakeholders

5.4.2.1.4.1: Professional Development and Knowledge Exchange Outcomes

A strong theme that emerged in the interviews with Professional and Community Stakeholders was the idea that being engaged with the project, either as a Project Team member, or as an associated beneficiary or stakeholder, resulted in professional development. In particular, the idea that lessons learned either from colleagues on the project, or from outcomes, was strongly attested to in terms of positive project outcomes:

> *"I learned a lot from working with x on harvesting; there are elements of his plan that I know always [to] include in my harvesting plans, such as birch pollarding" (PCS7).*

> *"I looked at my own place and … I said I'll just clean it up … it can be hard to find the time to do it, but some time taken is probably worth it" (PCS18).*

Through association with KerryLIFE, professionals working in the areas of agriculture and forestry were able to extend their knowledge networks. For example, an associated beneficiary, through their primary role in a government agency, was able to facilitate study trips to KerryLIFE sites with visiting international experts. In one example, visiting foresters from Oregon were facilitated to visit trial areas for reforestation as part of the project:

> *"There has been a good bit of engagement through local engagement, stakeholders linking in with the project, maybe trying to give some advice and trying to … spread the message as well a bit" (PCS4).*

For some of the project team and associated beneficiaries, there was limited experience of working on a partnership project such as KerryLIFE. There was an identifiable openness within the Project Team and among associated beneficiaries and the community stakeholders to embracing the challenges of such a complex project. That openness extended to being willing to engage in reflective practice, which was apparent in both team members' and beneficiaries' critical engagement throughout the project period, and in their willingness to reflect in the interviews.

One interviewee identified the experience of working on other projects and with other professionals as an important way of learning. For example, former colleagues' advice on running similar projects was deemed invaluable:

> *"X held the view that inclusion was the best way of getting somebody up to speed with anything. So, I would have been then brought into a national working group, which would have had all the key stakeholders looking at a national level in terms of Freshwater Pearl Mussel conservation. So, we would have had large roundtable meetings where you would have had stakeholders" (PCS1).*

And knowledge from KerryLIFE informed the development of the follow-on FWPM conservation project (and it is hoped agri-environmental schemes generally):

> *"… and the fact it has led on now [to the PMP EIP]. And hopefully has informed agri-environmental schemes … as well" (PCS4).*

As well as learning from other colleagues, the same interviewee was clearly willing to engage in reflective practice, identifying on a number of occasions that there was a lack of community input into the design of the project, suggesting that low community engagement from application stage *"… might have been the one chink in that armour" (PCS4).*

This is recognition that knowledge exchange flowed from the farming and community stakeholders to the professional stakeholders too:

> *"… we worked with 40 farmers, but we met way more than that. We met a lot of people that were very excited about the project and we met wonderful characters, like they were brilliant, they would educate you themselves, you know" (PCS16).*

Knowledge exchange and mutual learning was a strong theme among all stakeholders. And there was an emphasis placed on ensuring that the lessons learned from KerryLIFE and other 'farming for nature' projects are made available to future projects through clear and honest accounts, including evaluations:

"… projects are certainly not without challenges but there has been a lot of learning, I think, and … if there's more agri-projects in the future and LIFE projects, I think one of the important things is to document the learnings very clearly from these projects and document the challenges; and if there's a project being set up, that those can be taken onboard early and maybe they'll inform them and then you can generate success after success" (PCS4).

However, it was acknowledged that there tends to be no formal platform for that exchange. Unlike the established systems for the exchange of scientific information and outcomes, such as conferences or reports, there are limited opportunities to learn about other project experiences such as practitioner reflections on community engagement and the incidental, added-value elements that occur through formal and informal interactions and activities. Such experiential learning is invaluable for professional and community stakeholders alike.

5.4.2.2: KerryLIFE Added-value Actions and Outcomes

5.4.2.2.1: Local Business Network Development

As well as the incidental economic impacts of the project, it had been an objective of KerryLIFE to establish a Business Network Register. While some work was done to compile this list, and there were substantial interactions with local business owners, a working register was not finalised and established. There does not seem to have been an appetite among local businesses during the project period to develop closer working relationships through a network, possibly due to the diverse nature of services represented:

"… we would have compiled a list and we would [have] tried to promote some of those businesses but there wasn't a strong kind of desire to have that within the businesses, and they're quite disparate as you'll see - there's B&Bs, there's dog grooming. Like, it's very hard to kind of get them to pull together to do something and I suppose we would have probably liked to maybe have done kind of a Trade Fair type thing, or something like that, which would have maybe raised the profile of the businesses. But generally speaking, they tend to be niche businesses and they know their own market as such" (PCS1).

The fact that developing a network of businesses was not as integral to the design of the KerryLIFE project (as it has been in other LIFE projects) is thought to have been a factor too:

"Kerry is a competitive tourism landscape …it wasn't like our sister project, the AranLIFE project, where they were trying to establish the visual connection between the field system and the landscape and tourism, and the tourist wanting to travel out there. There isn't the same connection, like, you know, you have the Kerry Way which is already quite a very popular walking route" (PCS1).

The respondent identified that the wider context for this outcome of 'incompletion' was the general absence of a collaborative approach to place-based tourism between those providing tourism public goods on the Iveragh's Ring of Kerry (e.g. cultural landscapes) with the urban tourism hubs such as Killarney and Galway that benefit economically from them:

"… a lot of tourism along the Ring of Kerry, the locals that are providing the visual landscape aren't necessarily benefitting [from tourism]. It's the hotels in Killarney or Galway or wherever they are overnighting that are making the majority of the income because people get on a bus and they drive around it and then they get off the bus at the end of it, and go into Killarney" (PCS1).

5.4.2.2.2: Recreational Infrastructure Development

As part of the project's wider remit to contribute to local community amenities while at the same time enhancing tourism offerings, KerryLIFE successfully delivered walking trails in the project area:

"So, there is a sign of a 20-something kilometres way [walking trail] that promotes Lickeen Wood. But when you arrive at Lickeen Wood, there is no walk. There's a wood but no walk. So, we

provided the walkway that was the phantom walkway up until that. Locals have been using the route, kind of a route, and we just enhanced that. And we also then explored looking at a walkway down in Blackwater too but that didn't manage to proceed" (PCS1).

Developing farming within a broader socio-economic framework in HNVf uplands requires a holistic rural development approach. Farmers and/or other members of farm households need a vibrant local economy where they can secure off-farm jobs.

"If we want people, if we want lived-in communities in these rural areas, with families, with schools and shops open, they do need to develop the peninsula. The tourism isn't doing that. The cycleway, … hasn't gone ahead. And … tourism is not the answer to everything, but multifunctionalism, it is important too. … if there are some vibrant local restaurants that will employ a few young people and if some of these farmers can get work in construction …. Some people say off-farm work is people getting out of farming, but all the research doesn't point that way e.g. [there are areas] in [continental Europe] where most of those farmers in the winter work in ski resorts" (PCS13).

5.4.3: KerryLIFE Resource Systems and Related Ecosystems

5.4.3.1: Adopt a Catchment-based Approach and Mainstream 'Farming for Nature'

Professional and community stakeholders identified the value of using a comprehensive catchment-based approach to 'farming for nature' projects that can encompass all relevant landowners, especially one like KerryLIFE with a focus on aquatic species:

"The challenge will be that you've got people and their spatial distribution within the catchment. You'd ideally like to have, if it's along a stretch of river, to have all landowners along that stretch involved. And you could probably draw strong conclusions then … you can have positive mitigation efforts in part of the catchment but then how do you deal with challenges and other areas where there might be works like reclamation or continued drinking of livestock from the actual water course" (PCS4).

The following respondent was unequivocal about their learning from five years of KerryLIFE of the need to roll out such projects on a bigger scale in future in order to encompass the full community of actors required to achieve the desired outcomes. The ultimate expression of this they conclude would be to mainstream 'farming for nature':

"… the first legacy is you've had five years of intensive learning, so the knowledge is very important. And then the next thing is, what can you turn that knowledge into, some sort of a project that will carry the knowledge forward and do things better there, but also on a bigger scale. So in the way that the Burren expanded from starting off with I think 20 farmers maybe in the Life Project or whatever number, to now covering a huge part of the Burren and being a mainstream part of DAFM activity" (PCS2).

5.4.4: KerryLIFE Socio-economic Settings

5.4.4.1: Adopt a Rural Development Approach – Multi-sectoral and Territorial

Farm households and their broader communities are interdependent. Lived-in communities in farming areas depend on secure livelihoods, and these in turn depend on strong local economies because farming livelihoods are intertwined with them:

"I think the key to all of this is a lived-in community that we all want, but for that to happen, they have to be able to make a living. …. Off-farm work is actually critical. Maybe what we need the government to do is the socio-economic development of those areas. They are abandoned by government really. [Elsewhere in the Iveragh peninsula uplands, in an] isolated place, an older farmer [described] that in his childhood, it was much easier to get work. They had the turf-burning electricity-generating station back in Cahersiveen, there was a factory for knitting socks that women worked in. Unless we're going to pay [farm households] to stay there and produce ecosystem services, they're going to have to find another income" (PCS13).

But combining farming with off-farm work can have ecological implications and these factors need to be understood when developing appropriate HNVf policies:

> *"Off-farm work definitely impacts on the farming system. [Farmers with off-farm jobs] are concentrating [production] on the lowlands" (PCS13).*

Supporting upland farming means supporting households and families, including investing in infrastructure:

> *"And the road infrastructure [in the Iveragh uplands], one woman was leaving because the road was so bad, she couldn't drive her kids in and out. They can't be abandoned by the government. It's not all about farming" (PCS13).*

5.4.4.2: Agree on Shared Purpose among Stakeholders

Joined-up thinking is necessary on the ground also and this requires a strong sense of shared purpose among all relevant stakeholders in the first instance. This can be achieved through adopting both rural development (territorial, multisectoral) and community development (bottom-up, partnership) approaches:

> *"The problem on the ground is always, there's no joined-up thinking. Tourism is what makes Kerry function and it functions mostly on landscape. They've done surveys and people come there for the landscape – the Iveragh, Dingle. The farmers create the landscape but they don't benefit from it. … hotels in Killarney … they love the white-tailed eagle … because it attracts tourists. But if I said to them, 'will you compensate the farmers if it takes its lamb or would you even buy the lamb from [farmers]?', they would not make that connection in a million years. 'No, no. I believe it's quite expensive', was the response of [a hotelier in the region]. 'We want the landscape. We want the eagles and the wildlife, but it's too expensive to invest in [it].' They won't buy the Kerry lamb. The last time I checked, there wasn't a single hotel in Killarney that bought it. It's joined-up thinking [is needed]. [Farmers and tourism beneficiaries] are in opposition to each other rather than being together. You need very good local development that can bring these things together, rather than – the farmers see themselves in opposition to the tourist lobby, the tourist lobby see themselves in opposition to the farmers" (PCS13).*

Identifying mutually beneficial shared purpose among local stakeholders would serve to build the trust and relationships required to achieve mutual support and synergies giving rise to an authentic 'community' of stakeholders all working towards a joint strategy to integrate the supply chain and markets for farm products and landscape, and to increase livelihood opportunities and regional assets through economic diversification. Government support for a more locally integrated and ecologically sustainable model of tourism in the Iveragh peninsula has a role to play and Dingle offers a local model:

> *"Even in time, some of the farmers, some of the wives … if they set up a nice little restaurant, B&B and if they only used the local lamb. And you can't all do the same thing. You could have another making cheese. … maybe I'm giving the [continental] model, whereas we have to remember in Ireland, we don't have a food culture. [On the continent] they are prepared to pay more for … local terroir products. But you could have [e.g.] a B&B, we're very good at local hospitality. Or ecotourism that would be more diffuse, rather than all in Killarney, all owned by a few families, who receive massive government subsidies and have [many] stag parties … and [many] American tour buses. …. So, it's trying to change that model as well. I remember back in the 1970s, those farm B&Bs did work very well and it was filtering down the income from the landscape, from the aesthetics, from the beauty of it, which we need every bit as much as the food we put into our mouths. But then standards rose a lot … drink driving, you can't go out at night …" (PCS13).*

Government agencies and regulatory authorities have an important role to play in increasing opportunities for farming livelihoods in HNVf uplands. More place-based support is needed through joined-up thinking in policies and regulations, while a deficit of suitable local support structures is a barrier to achieving a joined-up supply chain and market on the ground in South Kerry. The following describes the negative consequences of not adopting and resourcing an integrated territorial and multisectoral approach to supporting HNVf:

"We need government input from Fáilte Ireland [markets Irish tourism overseas], Bord Bia [markets Irish food overseas] …. [Ring of] Kerry Lamb, they tried to bring out that label, they're heroes on the ground doing all of that, but they just constantly seem to be up against 'this market'. Killarney hotels, they don't want the full sheep, they only want 500 legs of lamb. They don't want the rest of [the carcass] and they want it in the middle of the summer and in the middle of the winter there's a big chain thing …. in France … there's far more support at the local level …. it is at the Commune level[28], they have all these 'functionaires'[29], they did decentralise. We don't have anything like that at all. The Kerry Group [multinational food company] is our [equivalent] and the rest are left to their own devices" (PCS13).

There may be socio-cultural factors to take into account as well that link back to the area's long social history of outmigration, depopulation and ageing demographics. The persistence of traditional gender roles compound rural isolation and constrain innovation in HNVf uplands:

"If you look at the Iveragh peninsula and the Dingle peninsula, Dingle has done a lot better. …. There's far more of an entrepreneurial mentality there" (PCS13).

"… some of those farmers have a very low self-image, thinking 'we left school at 14, the brightest ones went off and emigrated. We were just kept on the farm'" (PCS13).

"A lot of women just won't marry into those very isolated places. And that's not just this generation, it's the generation before. [Elsewhere in the Iveragh uplands] men who are now in their 60s, … a lot of them spoke about going over the mountain to … national school (it's closed down now). One man said 'every morning you had the sounds of children walking to the school', they were 50% [females] there, but … the [females] were the first to leave to go to America. They refused to marry into those small homesteads" (PCS13).

***Above**: Cattle grazing.*

***Above**: Sheep farming.*

Adopting rural development and community development approaches will help to ensure that the strategies employed are informed by an understanding of the broader socio-economic and political context as well as local history in order to help integrate farming and tourism and other forms of economic diversification in locally appropriate ways. The following example highlights how the lack of shared purpose combined with the influence of local social history and productivist economics came together to block a food and farming entrepreneur:

"There is a mentality in the Iveragh … it's not entrepreneurial at all. There's a lot of begrudgery, one neighbour watching the other. [A businessman with family roots in the Iveragh returned to the area] and because he's very much an entrepreneur, he wanted to bring out a label of [native] cow cheese. He wanted to bring back the Kerry cow to the uplands, Kerry or Dexter. But he couldn't get anyone that would rent him the land to run a herd of Kerrys. …. Then he tried everything to get farmers around to keep the Kerry cow so that he could transform it. He set up a dairy, he did all his marketing and nobody would keep the Kerry cow because they said 'that's ridiculous, the Kerry calf is worthless, whereas a Charolais calf is worth €300-400 at the market and you wouldn't get €50 for a Kerry cow'." (PCS13).

[28] Smallest administrative district in many European countries.
[29] French government official.

5.4.5: 'Farming for Nature' in an Agricultural Sector Dominated by Productivism

A recurrent theme in the interviews was that a major challenge for engaging farm participants was the somewhat contradictory nature of farm schemes, particularly between Pillar 1 and Pillar 2 measures and agri-environmental schemes. The farming industry, farm advisory sector and policy environment remains dominated by principles of productivism and so inevitably production drives farmer behaviour. This is the context within which KerryLIFE was being implemented and HNVf was understandably seen by some respondents as 'a step backwards':

"… farmers want to farm" (PCS16).

"But they have been told all along by Teagasc and everybody, it's trying to be a big farmer, their sense of success. I think this whole idea of 'farming for nature' and that, most of them just don't get that at all really. Some might, but they see that as a step backwards. They might talk about the old times and all of that and reminisce … but the picture held up to them by our society is 'be a big farmer, buy more land and get more stock'. Projects like KerryLIFE are trying to combine that mentality with the fact that "there's a few mussels there in the river that I've to do a bit for as well and I'll get another subsidy". But I think their driver is production and the key is trying to combine both. Brendan Dunford has always said that - farmers want to produce" (PCS13).

Projects like KerryLIFE work to change attitudes on the ground but are trying to do so without the necessary joined-up thinking at national level across farming policies, and in the face of the State's longstanding and significant support for the conventional farming industry and its markets. Elsewhere, dairy farmers are lauded and official language compounds the perception of intensified specialist farming as the 'ideal' to which farmers should aspire:

"There's a huge need for change in attitudes …. but it's so difficult to change that because the mainstream, all the advisors, all the big dairy farmers in the country, all the ones who make a good living, they're all on a totally different trajectory (PCS13).

Values in farming communities reflect societal values at large and farming for nature is perceived as a departure from the mainstream:

"… our whole society is driven on that. It's production, bigger, bigger. We're in a very materialistic world and it does filter down [to farmers in the uplands] as well" (PCS13).

"… this will all be a National Park in 10 years' time" (PCS15).

Therefore, before farmers can fully and successfully implement 'farming for nature' on the ground, agricultural policies need to align with environmental policies and result in joined-up farming subsidies designed to work in harmony with each other. It is public servants, policy makers and legislators who ultimately determine the success of place-based projects such as KerryLIFE.

"… it might take another century for policy makers and the decision makers up there to try to change this juggernaut and then it will filter down to these farmers as well. But these are not the people who are going to change the system. They just respond to it. …. What I would love to see is if all these subsidies could come together. Because there is a lot of contradictions in those subsidies, even within KerryLIFE and GLAS. This thing about scrub and fencing off near the waterways – if any scrub grew there, [farmers] didn't get their GLAS payment. It's very confusing for the farmers. …. I just wish [those designing subsidies] had a bit more conviction and they could all be put under one category [such as] High Nature Value farming" (PCS13).

"Looking at single farm payments, where you can get penalised for areas of scrub, and then you have agri-environmental schemes, or future agri-environmental schemes and you have projects encouraging native woodland, and one of the elements in the native woodland is emergent forest which can actually come from scrub so there needs to be more alignment of policy and ideas to make sure that there's a common purpose, there's probably a higher achievement in those regards" (PCS4).

"I know that part of the objectives of the project would be to get a certain number of hectares

of new native woodland put in place and a lot of the older woodland where the trial work on harvesting and mitigation measures of silt and that would have been on Coillte forests [of non-native species]" (PCS4).

5.4.6: Summary

There was broad satisfaction with KerryLIFE among the professional and community stakeholders. The scientific outcomes of the project were (understandably) identified as central to the project outcomes, and as such that remit led much of the interactions and focal actions of the project. This evaluation of KerryLIFE highlights the absolute importance of place-based, local engagement. This engagement should be embedded from the design and application stages. There were several incidental, added-value outcomes associated with KerryLIFE such as the Pearl Mussel GAA Shield. Due to the remit of the project, and limited budget beyond that remit, there was a limited range of community outreach activities. These outreach activities were considered very positive in the lifetime of KerryLIFE, and they are still contributing to its legacy. During the application stage, and in line with the criteria of LIFE projects, it was identified that community outreach could be given a budget and work package(s) that would be appropriate and relevant to the given project. This should be a ring-fenced budget and ensure that added value will be sustained alongside the positive ecological impacts. Recognition of the broader impact of LIFE projects that can encompass the social, environmental and economic is required to ensure equity of benefit, and engagement with community. Geographical and socio-economic contexts matter, and local people need to be foremost in making decisions about their localities and the conservation of its natural resources. Natural capital goes hand-in-hand with the social capital of communities.

Over the course of our many conversations with those involved in KerryLIFE, we noted that there could be a tendency to conflate the terms 'farmer' and 'community'. While this is perfectly understandable, given that KerryLIFE was primarily an agri-environmental initiative and farmers are the primary guardians of the countryside, it is important to recognise that non-farmers comprise a significant and growing proportion of the rural population. Non-farming households have responsibilities in respect of environmental conservation, and they can play an active role in supporting the development of rural communities. In both the Blackwater and Caragh catchments, there are people who have moved into the locality, because they were attracted by the landscape and way of life. Community and voluntary groups, sporting organisations, local businesses and services, rural schools and public spaces are all part of the fabric of place, and all have roles to play in sustainable rural development.

A 'Community of Practice' developed among many of the professional stakeholders involved in the project. Mutual learning among the professional group was identified in the interviews, both vertically with locally based practitioners learning from the national scientific experts, and horizontally among groups of professionals. In addition, community leaders were able to share their expertise in working with local groups, as well as benefitting from supports of the project team.

***Above**: Typical pasture.*

***Above**: A typical field.*

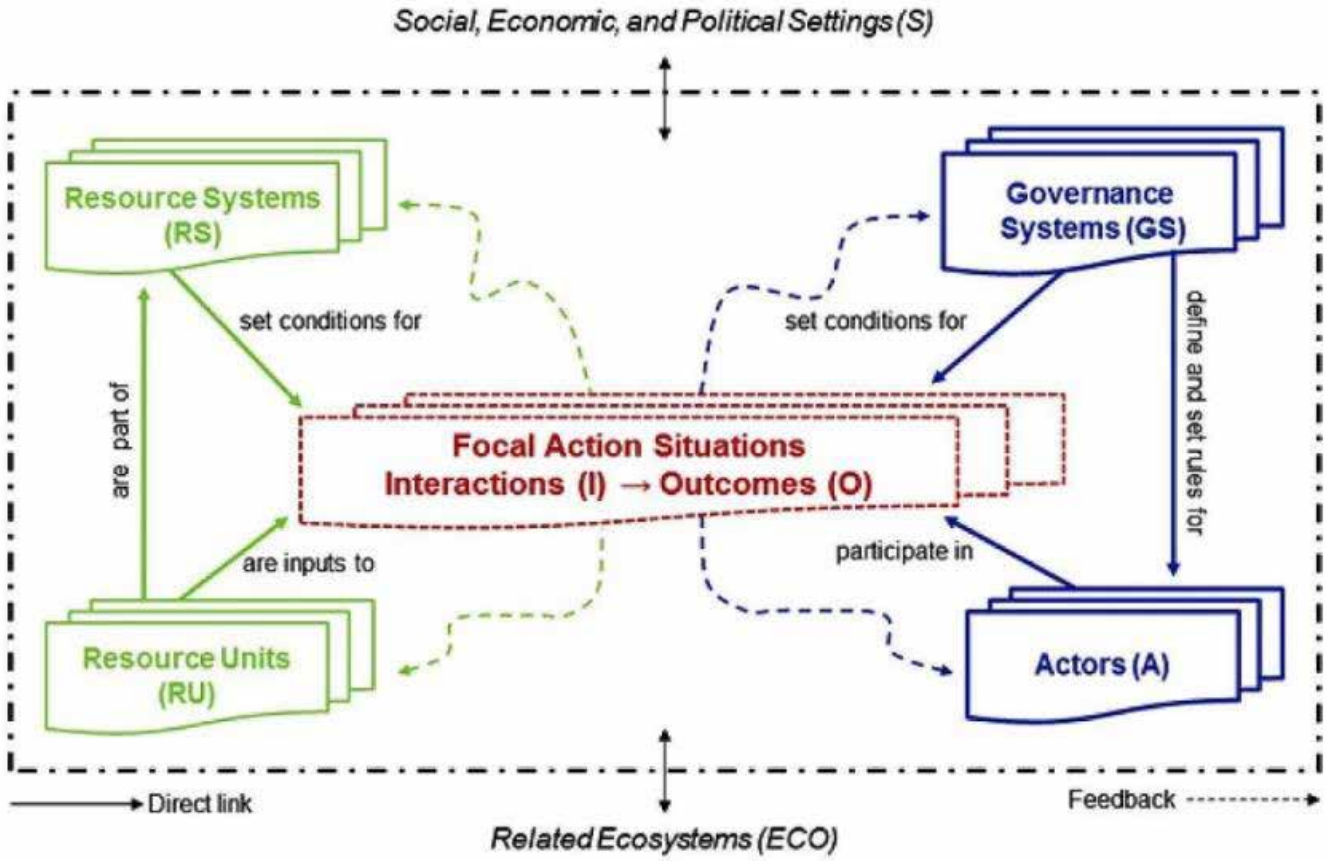
6: FINDINGS & RECOMMENDATIONS

This section sets out and discusses the research findings. It draws together the results of the project area profile, farmer survey and interviews, and interviews with professional and community stakeholders. It is organised in terms of the key elements of the social-ecological system framework. This helps to differentiate outcomes in relation to KerryLIFE project actions and interactions, and in relation to more long-term, deep-seated or internationally derived processes. Following a recap of the SES conceptual framework, the section works through that structure in terms of the findings and recommendations (with recommendations presented in bullet form).

The SES conceptual framework summarises the key elements of projects like KerryLIFE that aim to enhance ecosystem service provision. It encompasses the natural resource systems and their components locally and more widely that place natural limits on actions, interactions and outcomes. And it outlines the human factors, including actors and their governance systems, ranging from local cultural, social, economic, and political settings to those influencing actions, interactions and outcomes from further afield. Next are the findings and recommendations in relation to these key elements.

6.1: KerryLIFE Resource Systems and Related Ecosystems

The geographical profile of the KerryLIFE project area described an environmental setting strongly influenced by its upland topography and poor-quality land. These 'very limited' land resources have shaped its cultural landscapes in terms of traditional farming practices and dispersed settlement patterns and also underpin the area's SAC designations. Long used to environmental limitations on their farming productivity, evidenced by the extent of natural vegetation that remains on farms, recent policy restrictions on productivity related to SAC designations have strained farmer relationships with public bodies. This is because, while all of these characteristics contribute to the region's reputation as a world-class tourist destination and an attractive place to retire, they are associated with low farm incomes and challenging socio-economic conditions more generally. These links will be explored further under 'Socio-economic Setting'.



6.1.1: Employing a Catchment-based Framework

6.1.1.1: Across the Wider Community

Water quality status remains 'good' across much of the KerryLIFE catchments, but poor quality in some parts and declining trends generally are linked to negative pressure from human activity. Along with land uses such as farming and forestry, community-wide impacts on water quality come from households, other businesses and industries, including public utilities. Like the KerryLIFE and non-KerryLIFE farmers and foresters in the area, its wider population of residents, workers and visitors depend on and affect water resources and are therefore part of KerryLIFE's related ecosystems. While KerryLIFE community building and engagement reached out to some of these other stakeholders, the focus remained on educating them predominantly about the KerryLIFE project actions taking place inside the farmgate. This indicates that agri-environmental schemes have the potential to:

- Use a catchment-based approach to engage other community stakeholders in relation to their own household or business practices regarding shared natural resources, including water. Building such a web of stakeholders could be particularly significant in rural areas where human relationships are more likely to overlap a number of domains (e.g. across family, school, work and leisure ties) and thus there are many opportunities to reinforce a sense of shared purpose across this diverse 'community' of practitioners, all with a stake in e.g. the FWPM's conservation. Partners in this approach are likely to include community-based fora (e.g. Rivers Trusts), local authorities, LAWPRO and the Department of Housing, Planning and Local Government.

6.1.1.2: Among the Farming Community

In such low-income farming areas (discussed below), farm support schemes designed to suit local farms are to be welcomed, especially a 'farming for nature' scheme like KerryLIFE. This is because the project area's farms have some of the highest levels of natural vegetation and lowest stocking densities found anywhere in the State. Such HNVf reflects local farmers' understanding of the unsuitability of the productivist model of farming for their area and their pursuit of farming practices to optimise returns in spite of those limitations. From the outset, the KerryLIFE project was oversubscribed and all participating farmers considered that it was appropriate to the area.

In their survey responses, KerryLIFE farmers reported a strong income motivation for joining the project and welcomed the opportunity to farm in a more environmentally friendly way and to improve their farming practices. Such financial necessity as well as the farmers' openness to farming for nature and to innovating through knowledge transfer all reflect the findings of the area profile and indicate an engaged group of farm actors. As engaged actors, they considered the co-existence of non-KerryLIFE farmers within the project area as a weak point because of the ongoing impact of their unchanged practices on river water quality. For this reason, the findings indicate value in:

- Application of a catchment-wide scheme to encompass all farms impacting on the rivers' water quality, and
- Where budgetary constraints prevail, offering those who could not have been included as full participants 'associate' status, and inviting them to talks, farm walks and other events.

6.2: KerryLIFE Socio-economic Settings

The geographical profile recognised local people's heritage of survival in a harsh environment evidenced by millennia of human settlement and farming in the area. The resulting human-landscape connections have created its contemporary cultural landscape. But the socio-economic outcomes of rural restructuring in the project area have created challenges for the local population e.g. the outmigration of young workers leaves behind an ageing population with low levels of formal education and many lone-occupant households, affecting inter-generational renewal and vibrancy. While some students and workers migrate for educational and work opportunities further afield, others remain in local communities and commute daily to reach them. But relatively poor accessibility and connectivity from this area are barriers to full local participation in Irish society and its economy. High levels of indigenous populations confirm how the future of such areas are intertwined with their local people. Indeed, the relatively high levels of young farmers in the project area show the strong bonds young people from farms still have for the area, despite all of its challenges. But a dearth of new home-building compared to the high proportion of uninhabited and uninhabitable houses gives a sense

of the social isolation to be experienced in some parts of this landscape and explains local people's passion for any 'living countryside' policy measures that support a future for them and their families in the area.

6.2.1: Employing a Rural Territorial Cohesion Framework

High levels of farm employment in this area of low farm incomes (associated with its cattle and sheep farming systems) confirm a dearth of alternative employment opportunities. Nevertheless, there is evidence of innovation through the range of farm livelihood strategies being used locally as farmers optimise their labour productivity despite poor land resources, diversify their farm enterprises, and/or combine farming with off-farm jobs. Unfortunately, combining farming with an off-farm job can necessitate concentrating farming activity onto accessible parts of their farms, resulting in an undesirable blend of lowland intensification and upland abandonment. Thus, it is important for:

- Agri-environmental schemes to be designed within a broader rural territorial cohesion framework that considers the broader socio-economic drivers to farmer decision-making, and
- Promoters to work in partnership with rural development experts ranging from Local Development Companies/Local Action Groups to the Department of Rural and Community Development to achieve the necessary joined-up approach.

6.3: KerryLIFE Governance System

A top—down approach to governance was adopted for the implementation of KerryLIFE. This approach involved consultation with place-based community actors rather than a collaborative, co-design process. Local input from the application stage would give rise to greater local ownership and empowers communities to actively participate in decision-making for their local area. If projects are being led from top-down, government agencies, there should be concerted efforts to collaborate – not just consult – with local community development agencies. The project was very much driven from National government under the auspices of the then Department of the Arts, Heritage and the Gaeltacht. While a range of stakeholders were involved with the design process, there was limited input from local community representatives.

The governance system adopted for the design and implementation of KerryLIFE greatly influenced outcomes and engagement on the project in the two local catchment areas. This evaluation identified that limiting local input early in the design process resulted in challenges to initiation of the project, and highlights the following:

- To be truly multi-sectoral and multi-actor, LIFE projects should acknowledge, document and learn from the interactions with communities and their outcomes. Through this mutual learning, that will support a Sustainable Development approach, projects can become place-based, using local solutions to address local issues.

6.3.1: Joined-up Partnership Approach

Drilling down to the governance system overseeing such projects, the farmers and stakeholders identified scope for more inter-departmental and inter-agency involvement and coordination on the PMG. Strong governance structures and processes are vital for achieving effective and fair decision-making along with knowledge exchange flows between local and 'global' stakeholders (i.e. beyond the project area). Farmers and other stakeholders recommended:

- Inclusion of the local authority due to its remit in relevant areas such as local water quality monitoring and in socio-economic and land use planning.
- Engagement with other relevant public bodies e.g. the Marine Institute in terms of the links between FWPM and salmon ecology.
- Local Advisory Teams as was envisioned of the PSG should be integrated into project management structures, with a clear membership, remit and role; and that include local development groups, and the community and voluntary sector.
- A 'Community of Practice' should be identified as an outcome of projects such as KerryLIFE, recognising the professional development for all professional and community stakeholders.

6.4: KerryLIFE Focal Action Situations

6.4.1: Interactions

6.4.1.1: Farmer and KerryLIFE Staff Engagement

Farmers reported good levels of trust, relationship building and knowledge exchange with KerryLIFE staff, as well as some engagement with women and to a lesser extent young members of farm households. Knowledge exchange was more evident in the farm planning process than subsequent farm walks and discussion groups. While farmers described collegial exchanges with staff where all parties successfully worked through differences of opinions to arrive at satisfactory compromises, they also relayed a few instances where they felt their reasonable suggestions or valid concerns were either not understood or went unheeded. This finding highlights:

- The importance of investing in a strong governance structure at local level to provide a forum for effective and fair conflict resolution whenever the need arises.

6.4.1.2: Community Building among Farmers and Further Afield

KerryLIFE succeeded in creating the sense of a team among participating farmers. They described how fencing actions improved relationships among neighbouring farmers. In this area where traditional gender roles persist, evidenced by low female labour force participation rates, the project successfully engaged some women from farm households. Wider engagement and awareness-raising through various local events successfully extended the KerryLIFE community beyond farm households. Respondents considered that the project did not engage young people from farming or non-farming households to the same extent, which suggests the potential to:

- Expand on the outdoor education, school outreach, art competition and sporting elements to strengthen engagement of young people, including potential farming successors.

6.4.2: Outcomes

6.4.2.1: Environmental

The vast majority of farmers considered that their farms were better for wildlife and for the environment following KerryLIFE interventions, a clear endorsement of the actions taken. For example, farmers talked about being more environmentally aware, and they referenced cleaner surface waters, more natural vegetation, increased carbon sequestration, and improvements to their farms' flora, as well as birdlife.

There were questions regarding the logic behind some of the project's conservation objectives. Some farmers long familiar with local ecology queried e.g. how increasing woodland and riparian vegetation, especially non-native species, would impact on future FWPM populations. Concerns were raised about how e.g. the project would achieve the necessary mutually beneficial relationship between willows and mussels. This feedback illustrates the local, tacit knowledge of ecosystems held within the farming community, a unique understanding that comes from living and working the land over lifetimes and across generations.

These findings point to the value of:

- Searching out and including local ecological knowledge in the design of agri-environmental projects to optimise their environmental outcomes, as well as local buy-in and sustainability of desirable practices.

6.4.2.2: Environmental Awareness

Farmers reported understanding the logic behind the project actions and how they related to water quality and the FWPM. As a result of KerryLIFE, they learned more about the links between farming practices and the environment. The majority of KerryLIFE farmers reported thinking more now about how farming affects nature and waterways, and about the next generation's need for a healthy environment.

Farmers demonstrated an awareness of the multiple factors impacting on the conservation status of the FWPM, including the role of salmon in their life cycle (itself a vulnerable species). While the ecology made sense to them, not all farmers understood the significance of FWPM. For instance, why conserve the mussels in the first place? Farmers also reported

wanting to receive more feedback in relation to subsequent water quality impacts of their actions and they wished to be kept informed of FWPM conservation developments into the future. These outcomes show not only the relationship that exists between farmers and the FWPM, but also their desire for an ongoing feedback loop to reinforce those relationships. Therefore, they recommend:

- Strengthening the justification for conservation to farmers and how it relates to them, their households and the wider community, and
- Providing them with access to long-term data on the impacts of KerryLIFE on the water quality in both catchments. In fact, farmers' own knowledge and their desire for ongoing information exchange highlights their potential as highly informed and strongly motivated citizen scientists.

6.4.2.3: Socio-cultural Awareness

As a result of KerryLIFE, the majority of farmers reported that they thought more about farming heritage and local heritage more generally, especially that which is associated with the FWPM. During the course of the project, they shared some fascinating related folklore and history. Farmers' recollections and observations indicate the merits of:

- Agri-environmental schemes taking a 'whole-of-system' approach to ecology, which includes their human socio-cultural dimensions.

6.4.2.4: Farm Income Support

Most farmers perceived that KerryLIFE had improved their household income and they recognised the role of the KerryLIFE team in administering the payments promptly, efficiently and transparently. Most farmers also considered that KerryLIFE payments were good and this was an important feature of the scheme in an area characterised by low-income farming. Unexpected costs included the loss of animals in closed-off drains, but overall farmers who closely monitor their financial records identified farming for nature as more profitable than productivist farming. Most also believe that farming and nature can co-exist on a profitable farm. Farmers recommended that:

- Itemised statements accompany agri-environmental payments to help farmers link those income supports with their actions and provide them with informative and motivational financial insights from their participation.

Farmers' observations suggest that KerryLIFE would have had even greater impact on farm incomes had it provided farmers with:

- Access to an independent financial advisory service, either unilaterally, or preferably in collaboration with South Kerry Development Partnership, to ensure continuity of support to farmers post-2020.

6.4.2.5: Integrated Farming and Socio-economic Futures

In their survey, the vast majority of farmers would recommend 'farmer for nature' projects. While KerryLIFE was deemed a good fit for the local landscape and types of farming, it was not necessarily designed in terms of the wider socio-economic setting with which local farming is integrated. This relates to such factors beyond KerryLIFE's control as poor markets for farming outputs and the financial need to combine farming with other work. It also pertains to family care duties in an area with poor public services and transport infrastructure, along with long-term depopulation and ageing demographics. Consequently, the majority of KerryLIFE farmers were not positive about the future of their farms or the wider area.

Lack of optimism for the future was also linked to fear of any further public policies that would compound these factors e.g. by imposing further restrictions on farming and/or living in the countryside. These fears are based on such local experience as: the lack of consultation with land owners regarding national NATURA 2000 designations, especially people expected to comply with restrictions imposed unilaterally on their land management practices; and local authority planning decisions seen as unsympathetic towards new home building for locals. These experiences raise concerns about what 'place' such public policies envisage for farmers and their households.

At the same time, a range of desirable native biodiversity on farmland is the result of sound agricultural practices and farmers are keenly aware how the region's tourism sector, especially in Killarney, depends on the cultural landscapes produced by generations of family farming throughout the Ring of

Kerry. While farmers on low incomes make these key inputs to the tourism sector, they receive no economic returns from that sector, a situation that is neither acceptable to the farming community nor sustainable.

These few examples suggest that HNV farmers feel overlooked and undervalued in terms of being included in planning processes for their areas and being paid for their key contributions to other sectors. KerryLIFE lacked mechanisms to deal with these issues or to leverage contributions from statutory agencies and other bodies to address them, and to deal with their causes and effects. These examples show the importance of agri-environmental scheme promotors:

- Including representatives from the local authority, including planners, on the PMG,
- Taking account of the inter-relationships of humans, landscapes and nature through the local lens of people's right to a decent livelihood and a family home, i.e. the position of farmers and their households as part of biodiversity, and
- Working through a framework of rural territorial cohesion using a partnership approach to develop a vision of 'farming for nature' with farm households and other key stakeholders. The aim would be to bring together 'agri-culture and the environment', a 'living countryside' and a 'vibrant rural economy' and work towards integrated, multi-sectoral, place-based strategies.

Agri-environmental measures (including national schemes) have made local farmers feel more optimistic about the continuation of their farms into the next generation and the future viability of farming in the catchments. While KerryLIFE fits within this stable of 'farming for nature' measures, only a minority of farming respondents thought that the project itself had influenced their farm's succession planning process. It points to an opportunity for agri-environmental schemes to increase their positive impact by:

- Including a succession planning module to assess, understand and support the long-term sustainability of HNV farming.

6.4.2.6: Community Integration

Only a small majority of farmers thought that KerryLIFE had an impact on the wider community because, aside from its community or school engagements, the focus of the project was inside the farmgate. This farm-focus was recognised for its benefits to the farming community and their farm/hardware suppliers in particular, as well as other local businesses where farm households spent their increased income.

As outlined above in 'Resource Systems', the catchment is a powerful geographical concept to support community integration. A river system's visible surface waters in particular epitomise the multitude of connections linking stakeholders, while the element of 'water' is a powerful call to action because it goes to the heart of all life (and by extension, all livelihoods). These findings from the farmer feedback regarding community integration outcomes support the recommendation above to:

- Employ a catchment-based approach to build a more integrated community of practitioners around shared natural resources, and
- Adopt the lessons about achieving community integration that are emerging from the newer generation of EU LIFE Integrated Projects as well as catchment-based initiatives in Ireland, including the local 'Sustainability Plan for Waterville/ Ballinskelligs/ Inny Valley Catchments' in the Iveragh.

6.4.2.7: Effective Farming Practices and Livelihood Strategies

A smaller majority of respondents believed that the project made them better farmers. To explain the lower positive response here, compared to environmental outcomes, farmers described how previous farming generations drained the land manually to optimise its productivity and this social history had informed their thinking towards drainage and project actions related to it. It had also been influenced by the productivist model of farming that has promoted intensification and specialisation for decades and it continues to do so. This is explored in detail next.

6.4.2.7.1: Moving Away from the Dominance of the Productivist Model of Farming

Farmers described how public policy and farming subsidies in Pillar 1, underpinned by farming advice with inputs from industry and banks, have collectively promoted the productivist model and led to inappropriate farming practices for the area's poor quality land. For example, with larger herds of bigger, continental livestock breeds, no longer

suited to overwintering outdoors, farmers built slatted sheds using farm improvement grants. While slatted sheds addressed the issue of overwintering livestock and storing their slurry for months at a time, farmers then had to manage the build-up of waste without impacting on water quality, particularly challenging in areas like the Iveragh uplands with its poor quality land and wet climate.

Furthermore, farmers highlighted the uncertainty created by their experience of discontinuous agri-environmental schemes under Pillar 2 since the 1990s. Such 'start and stop' schemes give rise to the impression that 'farming for nature' is not underpinned by any long-term public policy vision or commitment. The survey findings indicate that if agri-environmental approaches are to be more universally applied on Irish farms, and if farm households are to commit to HNVf in an integrated, sustainable way, promoters need to go beyond predominantly scientific rationales and short-term schemes. They need to:

- Recognise the socio-cultural, attitudinal and historical factors that shape decision making in farming communities and households (e.g. the historical value place on digging drains), including by women,
- Address legacy problems, especially those that emanate from failures to allow for geographical differentiation in the design and application of policies, and
- Offer more security to interested and committed farm households through long-term 'farming for nature' programmes.

6.4.2.7.2 Moving Towards a Vision for a more Sustainable and Equitable Model of Farming fully Aligned across appropriately Resourced Pillars

Not only were some public policy measures considered inappropriate for their land types, but farmers highlighted inherent contradictions from the outset within the design of Pillar 1 and 2 supports. For example, actions they implemented under Pillar 1 of the CAP (e.g. slatted shed building that necessitated farmers to drain and reclaim more land for spreading the resulting slurry) seemed to work in opposition to actions sought under Pillar 2 (e.g. reversing drainage works and extending native vegetation and woodlands on their farms). They also cited Pillar 2 supports for biodiversity outcomes that were negated by penalties incurred under Pillar 1 supports, again due to their conflicting aims. Farmers related this disconnect to the ongoing dominance of productivism in Irish farming discourses, where agri-environmental schemes including KerryLIFE appear to them to only be 'tolerated' even within some public bodies. These examples suggest the need for stronger alignment within and across European and national policies for agriculture and rural development. Furthermore, some KerryLIFE farmers relayed their own experience of the Irish Farmers' Association (through the group's criticism of agri-environmental schemes and farmers who participate in them) not accurately reflecting local farmers' views on 'farming for nature'. They called on public bodies to consult directly with HNV farmers and those open to 'farming for nature'. Thus, the survey findings indicate that if agri-environmental approaches are to be more universally applied on Irish farms, promoters also need to:

- Research the creation of a more holistic vision for farming across all land types and communities through a rural territorial cohesion framework,
- Use that vision, informed by evidence drawn from farms representing all scales, land types and rural socio-economic settings, including the voice of HNV farmers and other interested stakeholders, to determine:
  - fully aligned measures under Pillars 1 and 2 of the CAP, and
  - the appropriate allocations for those measures across Pillars 1 and 2 of the CAP.

6.5: KerryLIFE Policy Setting

Projects such as KerryLIFE operate within a context of interacting EU, national and local policies, which can be complementary but contradictory. Tensions can arise within and from this broad mix of policies and their associated incentives, subsidies, restrictions and governance. Such tensions can pose a major challenge for the long-term vision for and development of Farming for Nature. This section outlines the 'bigger picture' steps that we consider necessary to address the contradictory and damaging (both socio-economically and environmentally) impacts of short-term agri-environmental schemes within the context of the productivist model of agriculture still prevalent in the CAP. The identifiable dimensions are as follows:

1 Absence of a long-term, joined-up vision for HNV farm livelihoods;
2 Towards a long-term, joined-up vision for HNV farm livelihoods;

3 Holistic understanding of food, farming, environment, and community; and
4 Align agricultural education with HNVf policy objectives.

6.5.1: Absence of a Long-term, Joined-up Vision for HNV Farm Livelihoods

Agri-environmental subsidies, including KerryLIFE, are not successfully supporting sustainable farming in places like the Iveragh uplands. The subsidies are critiqued for not being joined-up or secure. Farmers are described as pragmatically exploiting the subsidy opportunities in the short-term, knowing from long experience that the subsidies (1) will not last and (2) that the thinking underpinning them is likely to change again in the future. This kind of 'subsidy-shopping' is very unlikely to instil the confidence and gain the trust required to bring about significant and long-lasting behavioural change in farming practices. In addition, the productivist market is not fully aligned with environmental objectives in HNVf areas. For instance, in the Iveragh uplands, the higher output continental animal breeds come with more negative environmental externalities.

Currently, the CAP's Pillar 2 supports do not offer a livelihood independent of Pillar 1 supports. Therefore, at the same time that farmers are carrying out HNVf activities and availing of agri-environmental subsidies, they are being obliged, due to the absence of a market for HNVf outputs, to simultaneously pursue conventional productivist farming in order to draw down the other subsidies that make up the rest of their farm income. The policy solution is to pay farmers adequately for ecosystem-service provision and to develop comprehensive markets for their produce. Neither is happening currently.

The lack of integrated environmental, social and economic government policies for the uplands leaves farmers at risk of new threats e.g., ranch farming in the Iveragh uplands. This is the result of a combination of land abandonment, affluent returning emigrants and market signals. It has negative ecological impacts.

6.5.2: Towards a Long-term, Joined-up Vision for HNV Farm Livelihoods

Society, as a whole, must decide what it wants for rural areas (a lived-in countryside, a biodiversity preserve, or a complementary mix of both), and then design and pursue the joined-up policies, and make the necessary investments required to achieve that vision. A vision for upland HNVf and communities is about offering people opportunity and choice regarding where to live, work and raise families, both people from the uplands and those from elsewhere who are attracted to the uplands. And a vision for uplands is valuable for citizens nationally. In an era of climate change, Irish upland areas are increasingly recognised for the key strategic national resources that they represent, not only as the water towers and flood control zones for the most populated towns and cities downstream of them, but also as refugia for biodiversity, including humans (O'Keeffe and Crowley, 2019).

6.5.3: Holistic Understanding of Food, Farming, Environment and Community

The story of farming is underpinned by societal and cultural mores, such as society's relationship with cheap food, or whether society adopts an holistic approach to well-being and ecology. Farming is also shaped by the ways in which these mores influence some of the biggest challenges faced by humankind, such as climate change and the 2020 pandemic. Respondents (to our surveys) highlighted neoliberalism as a negative driver in terms of achieving an holistic approach to food production, and they emphasised the need to enhance society's understanding of inter-relationships between food, the countryside, the environment and livelihoods. This concurs with scientists' conclusions that affluence and unsustainable consumption patterns are driving negative environmental and social impacts, and that we require a significant rethink of the economic growth paradigm (Wiedmann *et al.*, 2020) in which the productivist model of agriculture is embedded.

Underpinning this holistic approach is the need for greater alignment of policies. There is sufficient evidence that joined-up thinking is required across the various dimensions - social, environmental, economic and cultural. This needs to be acted upon now through significant systemic and structural change at all tiers from the EU to local government.

6.5.4: Align Agricultural Education with HNVf Policy Objectives

Society's value systems and educational systems intersect to influence young people's life choices. Agricultural education has a vital role to play in promoting HNVf to farm successors and other interested young people studying for a career in the farming sector, including in advisory roles, research, policy development and industry. These are the future stakeholders, who will be responsible for the success of joined-up thinking in policy development and implementation of joined-up approach on the ground. The curricula in agricultural programmes run by Teagasc, further educational bodies and higher educational institutions are also key determinants. Therefore these educators are important stakeholders to include in the shift away from productivism. Over the past two decades, there have been small nudges forward, at the EU level, in terms of the expansion of agri-environmental supports. Stakeholders in KerryLIFE suggest that, Ireland is one of the more laggard member states in embracing and promoting ecological farming and in valorising HNVf. At the same time, farmers have clearly overtaken the policymakers. They demonstrate an ability to adapt and innovate, and it is evident that levels of knowledge and commitment among Iveragh's farmers are considerably higher now than was the case ten years ago – based on our observations and those of Kramm *et al.* (2010).

7: CONCLUDING REMARKS

KerryLIFE operated as a time-bound scheme, although the issues with which it was dealing have evolved over generations, and they require long-term strategic interventions. KerryLIFE, in common with other agri-environmental programmes / initiatives, was poorly resourced relative to productivist agriculture. KerryLIFE was agency driven, and its exogenous governance structure deprived it of endogenous inputs and local social capital. Despite these planning, resource and governance shortcomings, the programme was largely successful – in economic and ecological terms. Its successes in enabling appropriate on-farm investments and in supporting farmers to make ecological transitions are associated with the following:

- Farmers' willingness and their openness to innovation and to trying new ways of working;
- The KerryLIFE personnel's ability to work with farm households and to adapt the programme to local conditions on a case-by-case basis;
- The local presence and visibility of KerryLIFE;
- The collective nature of several project actions and the rollout of ancillary social activities;
- Parallel scientific research and practical on-farm application; and
- A clearly defined local geography – based on river catchments.

As stakeholders noted, KerryLIFE would have been more successful had it:

- Incorporated socio-cultural dimensions and local social geography more explicitly into programme design and performance monitoring;
- Worked through structures / agents with local embeddedness – in order to ensure the mainstreaming and continuity of its processes and practices – rather than being entirely dependent on central government / EU funding – KerryLIFE, like some of its participating farmers, lacked a clear succession or handover strategy;
- Offered participants a more holistic set of progression opportunities and pathways – to complement agri-environmental interventions; these could have included independent financial advice and training in citizen science; and
- Reflected community development principles more strongly in its approach.

These critiques of KerryLIFE are associated more with national and EU level actions and inactions, rather than with any shortcomings on the part of the local team – staff or management committee. Indeed, as noted in the presentation of findings, the local team members worked effectively to adapt KerryLIFE to the local context and to maximise its outputs and impacts. While the local geography was well defined, the lack of resources available to KerryLIFE meant that most farmers in both catchments were unable to participate. Consequently, many KerryLIFE investments and actions are demonstrative and have a patchwork (geographical) distribution, rather than a universal or systemic cross-catchment application. Moreover, other stakeholders in the catchments, such as non-farming households, businesses and forestry owners were not formally or directly included, such that their environmental practices may be the same today as they were five years ago. The resultant geographical gaps can negate some of KerryLIFE's positive ecological outputs. Indeed, over the course of collecting data in both catchments, the researchers observed excellent on farm practices, while at the same time, there were diggers and heavy machinery on other farms, which, in the words of one farmer, were,

> *"only burning holes in farmers' pockets and giving the impression of producing something".*

The dialogue among farmers in relation to productivism and ecological farming exhibits tensions between larger farmers (mainly in other parts of Munster and Leinster) and those in Iveragh (and other uplands / coastal areas). It also reveals, in the perception of most KerryLIFE farmers, a disconnect between farmers' experiences and the approaches pursued by the IFA and the Department of Agriculture. While they are questioning of EU moves to extend Natura 2000 and biosphere designations, stakeholders acknowledge that EU supports have been essential in sustaining farming families and in bringing about a valorisation of ecosystem services. Some stakeholders, particularly those farmers who have made financial assessments of their various farming options, strongly favour a more European and spatially equitable approach, whereby farmers are paid as much for ecological services, flood attenuation and carbon sequestration as they are for other commodities.

The EU Biodiversity Strategy for 2030 states,

> *"biodiversity conservation has potential direct economic benefits for many sectors of the economy… Natural capital investment, including restoration of carbon-rich habitats and climate-friendly agriculture, is recognised to be among the five most important fiscal recovery policies, which offer high economic multipliers and positive climate impact" (European Commission, 2020: 1).*

The strategy estimates the value of the Natura 2000 Network at between €200bn and €300bn per annum. Yet, the amount of money allocated to Pillar 2 of the CAP – to rural development and to agri-environmental schemes – remains much smaller (by a factor of three) than that allocated to Pillar1. Delivering the Biodiversity Strategy objectives require, at least, a recalibration of this imbalance. Furthermore, it requires the mainstreaming of a continuous system of supports to farmers who actively take measures to safeguard biodiversity, ameliorate climate change and secure natural habitats. The recent steps taken by the European Commission to promote subsidiarity to ministries (in member states) place an onus on, and offer opportunities to, Ireland's three key ministries[30] to ensure a more coordinated approach to integrating agri-environmental approaches into agriculture, economic, climate and rural development policies, and to promote synergies across these paradigms. It is also evident that the rollout of biodiversity measures, including any further designations, take place in conjunction with the farming community. While agencies acknowledge past shortcomings in respect of failures to communicate openly and adequately with farmers, there is a need not just to avoid the mistakes of the past, but, to ensure collaborative decision-making – with farmers and rural dwellers – and to engender a positive approach to ecology; this must be based on incentives, participation and monitoring, rather than on restrictions. Cognisance must be taken of local cultural and social contexts and perceptions, and it behoves farming organisations and other representative bodies to be honest and transparent with farmers regarding the intrinsic value of ecological services and to desist from labelling farmers, or viewing them through a disingenuous productivist lens.

The EU Biodiversity Strategy echoes the sentiments expressed by several KerryLIFE stakeholders and conveyed through the SES framework presented in this review; the protection of biodiversity and the generation of ecological services require much more than science and regulation. Approaches are necessary that enable and promote collaborative action by citizens, businesses, social partners and the research and knowledge community, as well as strong partnerships between the local, regional, national and European levels. KerryLIFE demonstrates that local action can harness knowledge capital, and it behoves stakeholders to continue to support local social capital. These observations and recommendations also chime with those of the OECD (2006 and 2019) in respect of area-based, bottom-up and partnership approaches to rural / territorial development. The LEADER model has frequently been cited as offering the requisite scope, principles and capacity to give effect to the

***Left**: Oak sapling.*

[30] Agriculture, Food and the Marine; Environment, Climate and Communications; and Rural and Community Development
[31] The LEADER specificities (specific features) are: area-based; bottom-up; horizontal partnership; devolved financial management; inter-territorial; integration; innovation; networking (European Court of Auditors, 2010).

***Above**: Gearha Bridge*

OECD's new rural paradigm (Horlings and Marsden, 2012; Permingeat and Vanneste, 2019). Yet, as is the case with agri-environmental measures, LEADER has been hampered by a lack of government support, increased bureaucratisation and a stop-start temporal (five-seven year) cycle (Konečný, 2019; O'Keeffe, 2019). Thus, the promotion of a holistic approach to territorial development and sustained rural livelihoods (for farming and non-framing households) necessitates parallel and re-enforcing revitalisation of LEADER (based on its original specificities[31]) and improved meso-level (members state / ministry) policy coordination and integration.

Most of the messages and recommendations emanating from this review report have previously been articulated in other reviews of agri-environmental initiatives – not just in Ireland, but across the EU. Farmers, practitioners and agencies have consistently demonstrated that agri-environmental approaches are effective – on several objective indicators – and need to be mainstreamed. The fact that such initiatives continue to operate on the margins, and that failed productivist models continue to attract the bulk of public investment reveals the presence of an inertia and / or a disproportionate influence of vested interests in the policy-making realms and in the leadership of farming organisations. Kramm *et al.* (2010) presented clear evidence of the merits and achievements of agri-environmentalism in Iveragh. Yet, ten years later, the peninsula remains dependent on cyclical schemes, and as this report has highlighted, elements of productivism continue to be foisted on farmers. Kramm *et al.* cite the work of Rubino *et al.* (2006),

> *"Europe cannot allow the concentration and intensification of livestock to continue in the more fertile areas with all the environmental risks associated with it, leaving about half its territory in economic set aside. It concerns not only the durability of meat industries, but also rural life and tourism, and therefore the whole regional economy"* (cited in Kramm *et al.*, 2010: 117).

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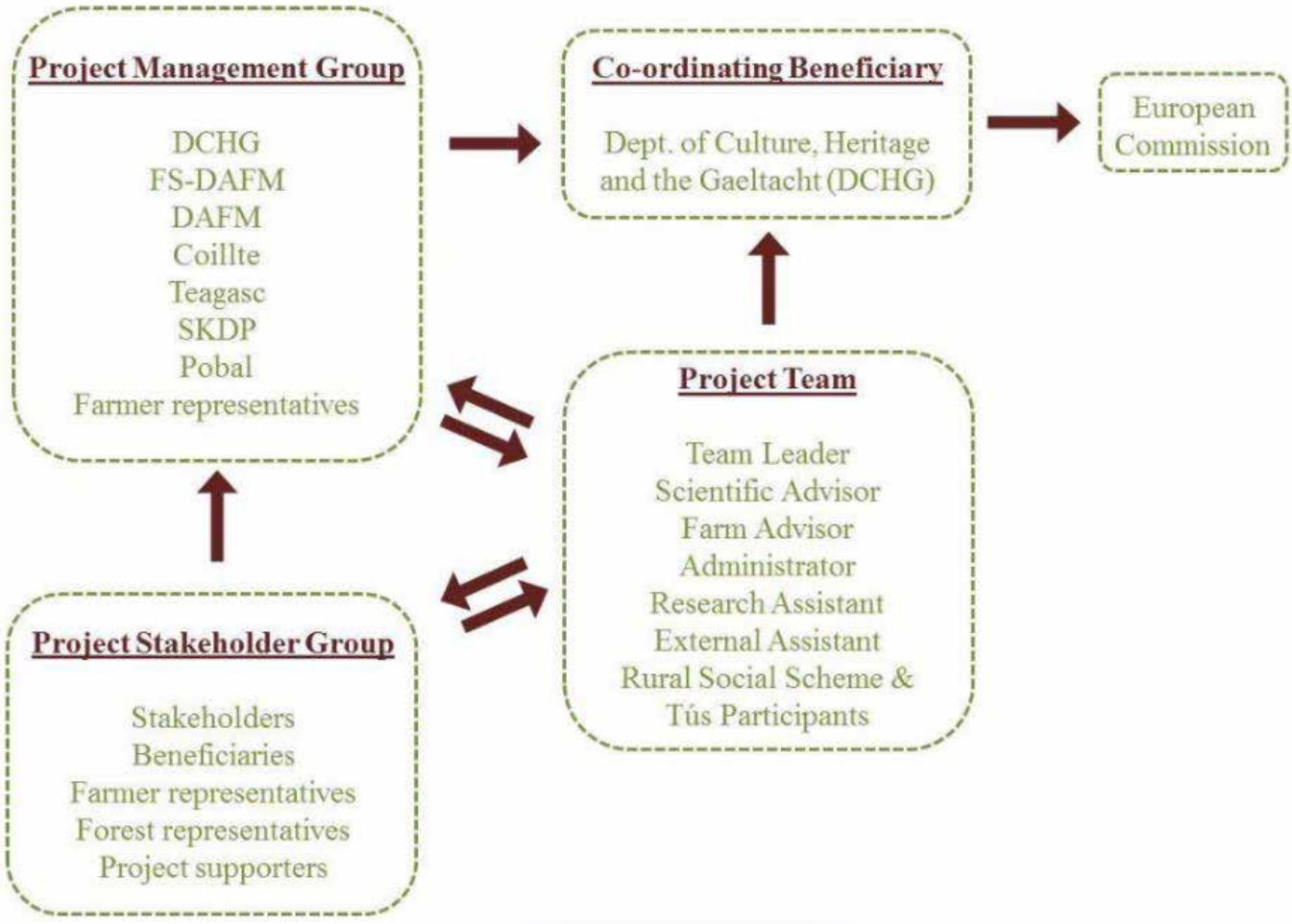
8: APPENDICES



***Appendix 8.1**: KerryLIFE project management structure. **Source**: KerryLIFE (2018: 9).*

i Source: http://kerrylife.ie/information/outreach-public-events/; accessed 10/09/2020.