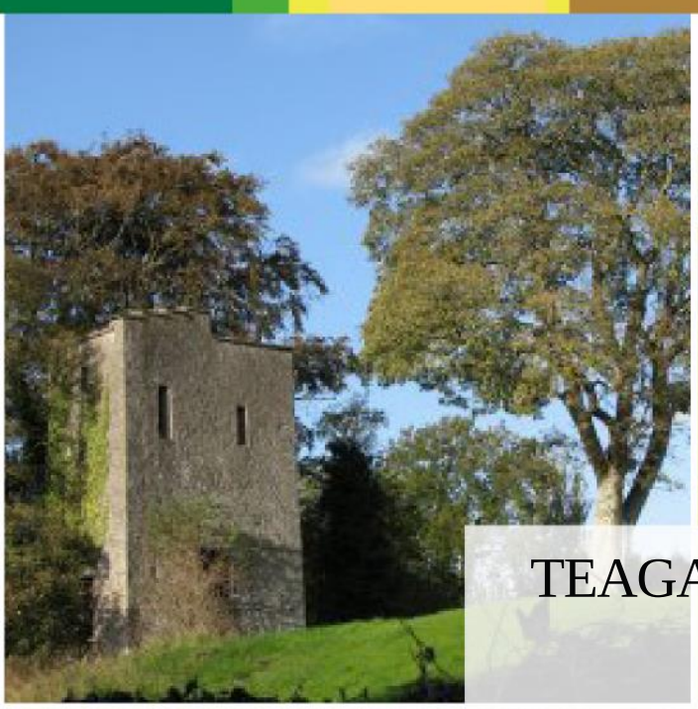
Rural Ecomony
& Development
Programme



TEAGASC SUBMISSION ON THE RURAL DEVELOPMENT PROGRAMME FOR IRELAND (RDP) 2014 – 2020, PUBLIC CONSULTATION – DECEMBER 2012

teagasc
AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

Contact Details

Teagasc
Athenry
Co. Galway
Ireland

Phone: +353 (0)91 845200

www.teagasc.ie

NDP
National Development Plan 2007 - 2013

Teagasc
Agriculture and Food Development Authority

TEAGASC SUBMISSION ON THE RURAL DEVELOPMENT PROGRAMME FOR IRELAND (RDP) 2014 – 2020, PUBLIC CONSULTATION

PREPARED BY

Cathal O'Donoghue, Ben Breen, Ciarán Carroll, Dan Clavin, Wendy Conlon, Kevin Connolly, Trevor Donnellan, Reamonn Fealy, John Finn, Kevin Hanrahan, Thia Hennessy, Tim Hyde, Mark Gibson, Michael Gottstein, Kevin Heanue, Maeve Henchion, Catherine Keena, Tom Kelly, Aine Macken Walsh, Paul Maher, Declan McArdle, James Mc Donnell, Frances McHugh, Nuala Ni Fhlathartha, Fintan Phelan, Ben Roche, Mary Ryan, Tom Ryan and Rogier Schulte.

DECEMBER 2012

EXECUTIVE SUMMARY

This document has been prepared by Teagasc in response to the request for submissions as part of a public consultation process of the Rural Development Programme.

Our document has a number of key themes

- Regardless of the design of the programme, we should maximise the gain for the economy of EU funds
- The objectives of the programme should facilitate as much as possible the objectives established under Food Harvest 2020 – Acting Smart, Thinking Green and Achieving Growth
- The facilitation of structural change within the agricultural sector, both by encouraging change and by assisting diversification
- Contribute as much as possible to national job creation strategies
- Facilitate the achievement of national environmental policy objectives
- Build opportunities for value creation across the supply chain, by encouraging and drawing upon our reputation for high quality and safe food
- Support farmers who cannot participate in the growth strategy and facilitate diversification
- In addition to financial incentives associated with the key objectives of the programme, it is important to ensure that farmers and other stakeholders have the capacity and knowledge to make the changes desired under the programme in the different dimensions
- A focus on effectiveness of programmes and minimising transaction and compliance costs (both monetary and otherwise)
- A focus on value for money, particularly in building upon existing infrastructure and institutions.

What should be the objectives of the future rural development policy?

The objectives of rural development policy as currently agreed are multifaceted. In addition to the production of market commodities such as food, fibre, feed and fuel the agricultural and forestry sector is multifunctional, providing many public goods such as landscape and biodiversity. It is also, especially in Ireland, the bedrock for sustainable rural economies and communities. To be efficient, the policy should provide not only economic outcomes, but provide for improved environmental and social outcomes.

The national strategy for the Agri-Food sector, Food Harvest 2020 provides a blue print for the development of the sector over the RDP planning period. The objectives of Think Smart, Act Green, Achieve Growth are consistent with the main objectives of the RDP.

This multi-functionality reflects the diverse range of actors and problems that the policy addresses in the rural space as well as the different historical antecedents of parts of rural development policy. In the early CAP guidance policy, efforts were primarily focused on restructuring agricultural holdings which were seen as too fragmented and lacking in capital (both human and physical). The original rural

development policy of the CAP focused exclusively on the restructuring and modernisation agenda within agriculture and forestry. This objective should receive renewed emphasis.

Another objective of future Rural Development policy should be to increase the diversity of employment in rural areas, to ensure that commercial agricultural and forestry production can take place in a manner that is acceptable to the general public, to address the exit of producers from agriculture, to provide access to retraining for those with a long working career ahead of them outside of agriculture, and to improve the infrastructure of rural areas with a view to making attractive for a wider range of businesses.

As part of the wider CAP reform process the environmental aspects that currently reside under Pillar II of the CAP may form a central part of the rationale for continued taxpayer support for farmers (see Bureau and Mahé, 2012). Without seeking to prejudge the outcome of those negotiations or Ireland's position, Teagasc is of the opinion that there is a continuing need for Agri-Environmental schemes if Ireland is to meet increasingly ambitious environmental objectives. Much of Irish and European agricultural and forestry production occur on farms which are not participants in current agri-environmental schemes. It is likely that agri-environment schemes are going to become more demanding in terms of the public goods expected in return for tax payer support.

For many intensive producers participation in such schemes has traditionally not been attractive as their profitability depends on their ability to innovate both in terms of their production system processes and the size of their farm operations (restructuring).

Given the competitiveness challenges that will be faced by Irish and EU agriculture over the period 2013 to 2020, the ending of the milk quota system and reforms to Pillar I measures Teagasc is of the opinion that a reformed Pillar II policy should:

- Focus on increasing the capacity of farmers to adopt new technologies and ways of working on their farms through increased emphasis on farmer education, so the capacity of farmers to innovate is enhanced;
- Give increased emphasis to agricultural extension activity so that the link between experimental farms and real farms is narrowed and farmers are made aware of the benchmarks against which they should be assessing their farm business's performance;
- Consider whether increased resources be devoted to agricultural and forestry production research that aims to increase enterprise profitability while also augmenting its environmental sustainability.
- Continue to support the provision of forest and agri-environmental services by the farming community through effective agri-environment, forestry and agro-forestry schemes.
- Contribute to farm viability via targeted measures such as Less Favoured Area payments and New Business Support.
- Given the difficult public finance situation, focus on instruments that have the highest benefit to cost ratio.
- Where possible, build upon existing resources, strengths, infrastructure and institutions.

Summary of Key Recommendations

Restructuring/Collaboration/Partnerships

- **Farmland Restructuring Scheme** to facilitate re-structuring through Succession and Inheritance. Create database to match applicants with each other; reduce fragmentation of Irish farms; facilitate change of enterprises and help alleviate the costs of restructuring (capital taxes and legal fees).

- **New Phased Transfer & Partnership Scheme** which would combine Early Retirement Scheme and Installation Aid Scheme for young trained farmers and include a financial incentive and partnership profit share model.

- **Incentivise Farm Planning** to target business restructuring, modernisation, scheme establishment/ participation.

- Support for initial costs of establishing **Collaborative Farming** registered partnerships, share farming and contract rearing of replacement dairy heifers and for extension agencies to recruit and train facilitators who could coordinate animation and networking extension supports.

- A new **sustainable farm development scheme** for capital investment on farms to make farm businesses sustainable in the long term and improve farm safety and achievement of cross compliance standards.

- In relation to **pig producers**, retention of targeted schemes (TAMS) is supported. There are also additional areas that could be covered including: grower/finisher accommodation, repairs/maintenance, and water systems.

- The **equine industry** contributes significantly to the Irish economy, with both the sport horse and thoroughbred industries contributing. Opportunities for the development of both are possible.

- **Sheep producers** would benefit from the retention of TAMS and a more streamlined application/approval process. Areas for consideration of grant aid include: handling facilities, electronic identification software, timber slat replacement and waste storage.

Risk Management

- Advisory and extension *s*upport for **risk management** of natural risk factors such as disease, flooding etc. have classically been managed using insurance markets. Risk mitigation through production diversification and other such risk management strategies can be developed at the local/farm/household level and advisory services can contribute to such developments.

- Support for development of **long-term databases on risk**, coverage, indemnities etc. could help to reduce information asymmetries.

- **Research** is needed on the feasibility of collective actions such as **mutual funds** which allow farmers to pool risk, so that the collective input of all can be used to compensate the few for some particular localised loss. Governments can assist in this process by developing the legal and institutional frameworks for such services and advising farmers about their development.

- In the medium term, **"contract purchase schemes"** are likely to be the main mechanism for the **alleviation of price risk**. Further research and follow up knowledge transfer and template contracts are required to advise on their use. It would be useful to produce template contracts and to monitor their performance.

- **Training and education on financial derivatives** such as futures and options provide good hedging capabilities with respect to price volatility, but due to extreme reliance on state stabilisation policies, many farmers are unfamiliar with these tools.

Capacity Building – Cross compliance/Improvement in competiveness and sustainability

- Looking to a future where objectives are focused on productivity and sustainability as well as diversification and rural development, there is a need for a proactive, well co-ordinated advisory support. Support is needed to **expand the current Farm Advisory Service (FAS)** model to support competitiveness and broader sustainability issues in addition to its cross compliance remit. The system should build upon existing infrastructures and institutions. All farmers should have access to the new FAS which could be delivered by private or public advisers, other than those involved in inspecting the service. There is a need to extend adviser training to the broader group of advisers/consultants who provide technical assistance to farmers.

- Farmers should make a contribution to the cost of the service. There is also a need to consider the potential role of **education**. This could usefully be considered under the "Greening Measures".

- **Teagasc** as a not for profit public service based organisation with a mandate to provide and procure education and advisory services, **is ideally placed to take national responsibility for the co-ordination and delivery of the FAS**. Teagasc should be responsible for the development of programmes and for their delivery internally or through competitive external sub-contracting.

European Innovation Partnership (Agriculture Productivity and Sustainability)

European Innovation Partnership (EIP) on (Agriculture Productivity and Sustainability) are seen as key to bringing research closer to practice via **knowledge exchange and networking**. This will **promote innovative solutions to key challenges around agricultural productivity and sustainability**. The EIP will be primarily implemented through actions via two EU policies: within CAP, Rural Development Policy and within EU Research and Innovation Policy, Horizon 2020. Rural Development Policy should provide co-funding for innovative actions of

networks or Operational Groups. The relevant key measures and the types of activities they will support include:

- Cooperation (Art 36) - Support under this measure shall promote forms of co-operation involving at least two entities and in particular: co-operation approaches among different actors in the agriculture and food chain, forestry sector and among other actors that contribute to achieving the objectives and priorities of rural development policy; the **creation of clusters and networks** and the establishment and operation of **Operational Groups** of the EIP for agricultural productivity and sustainability as referred to in Article 62. Such networks could range in scale from **discussion groups** to **broader multi stakeholder networks**.
- Support should be provided to networks in the form of Operational Groups under Art 36. Funding of up to 80% will be available through this measure. Such networks could range in scale from discussion groups to broader multi stakeholder networks. Other proposed measures (Articles 15, 16, 18, 20) could be used to support aspects of the piloting, development, testing and application of innovations that the Operational Groups are engaged with.
- Knowledge transfer and Information Actions (Article 15) Support under this measure shall cover: Vocational training and skills acquisition actions, demonstration activities and information actions.
- Advisory services, farm management and farm relief services (Article 16). Support under this measure shall be granted in order to: Help farmers, forest holders and SMEs in rural areas benefit from the use of advisory services for the improvement of the economic and environmental performance as well as the climate friendliness and resilience of their holding, enterprise and/or investment.
- Investment in physical assets (Article 18). Support under this measure shall cover tangible and/or intangible investments which: improve performance of agricultural holdings; concern processing, marketing and development of agricultural products; concern infrastructure related development/adaption of agriculture; and are non productive investments associated with agricultural and forestry commitments.
- Farm and business development (Article 20). Support under this measure shall cover: business start-up aid, investment in non-agricultural activities, and annual payments for farmers participating in the small farmers scheme.

Less Favoured Areas/Areas facing Natural or other Specific Constraints

The following summarises the necessity for support for these areas:

- Under Atlantic climatic environments, excess soil moisture conditions occur frequently and for prolonged periods of time on a wide range of soil types as a result of interactions between climatic and pedological conditions.
- The incidence of excess soil moisture conditions is the main biophysical constraint on farming practices in these environments, causing reduced grass growth, reduced herbage utilization, limited windows of opportunity for machinery operations and as a result reduced or even prohibitively low economic sustainability for a wide range of farm enterprise types.
- Both modelling and empirical studies demonstrate that the economic and environmental sustainability of intensive livestock farming and tillage systems are particularly challenging in scenarios where the 80 percentile duration of excess moisture conditions exceeds 220–230 days.

- Any restructuring of this programme should therefore recognise some of the unique challenges faced by farmers in a situation of excess soil moisture. Research has demonstrated that a failure to incorporate this condition in determining eligibility will leave Irish farmers at a significant disadvantage and will result in a significant reduction in income.
- Farmers in Less Favoured Areas have more challenging situations financially. Effort needs to be made to minimise significant losses that may arise from policy changes.

Agri-Environment Schemes

- Building on the sustainability strategy within Food Harvest 2020, the promotion of environmental sustainability is a critical component of the growth and marketing strategy of the sector. As the main land use in Ireland, the action of farmers in promoting environmentally sustainable farming will have one of the highest impacts on environmental public goods.
- Given the cost to farmers in farming in sometimes an economically sub-optimal fashion (for example farming with a lower stocking rate .etc.) or implementing environment enhancing measures that enhance the landscape, biodiversity, soil, water and air quality, farmers need to be compensated for these actions.
- The design of the new scheme must recognise, encourage and reward farmers for the delivery of high quality environmental goods and services from multifunctional Irish agriculture.
- It is essential that any new scheme has clearly defined and specific environmental objectives. Broad scheme objectives of climate change, renewable energies, water management and biodiversity should each have separate and clearly prioritised sub-objectives. Subsequent decision-making about the selection and design of measures should be informed by their **effectiveness in addressing sub-objectives.**
- A fundamental principle of environmental measures is that they should be minimum cost. Cost-benefit frameworks that measure both the environmental benefits and the corresponding abatement costs associated with delivering the benefits are now expected in the implementation and design of all environmental policy. Teagasc research has highlighted that many environmentally enhancing measures produce a win-win situation, increasing both farm profitability and improving the environment. These measures are those with a negative marginal abatement cost. Wherever possible agri-environmental policy should promote measures that achieve this. **Teagasc recommends that all agri-environmental policy should be tested by a rigorous cost-benefit analysis.**
- In this agri-environment schemes should **build on the requirements of other measures such as Cross Compliance** and deliver the wide range of important agri-environmental products and services that contribute the raw materials of the agri-food industry, and are valued by society.
- The expected requirement for **targeting** will mean that difficult decisions will need to be made about resource allocation to different competing sub-objectives. **Such decision-making should be guided by the cost-benefit analysis with higher measures that produce the highest return** receiving more resources. Where targeting is to be implemented on the basis of region,

farm system or environmental sensitivity, the criteria will need to be established on a strictly scientific basis.

- Measures should be **evidence-based** in terms of environmental benefits and costs. To promote targeting and effectiveness, there should be a clear justification from research evidence about how the recommended measures can achieve the desired environmental objectives, in what situations the benefit will be best realised, and in what situations a measure should not be selected.
- Measures must be **realistically costed** and must include the transaction costs, or opportunity and monetary cost of participating in a measure, to reflect the cost of participation and implementation by farmers, and to ensure selection of measures on the basis of environmental merit rather than cost.
- An on-going programme of **monitoring the implementation** of the measures on farms will be important, and should be achievable with a budget equivalent to about 0.3% of the total scheme budget.
- A **critical level of payment** will probably be necessary for the scheme to stimulate sufficient participation by farmers, and payment levels per farm should approach previous average REPS payments.
- Many environmental objectives require **co-ordinated efforts** across multiple farmers within a region or landscape, especially for more threatened populations of farmland wildlife. The new scheme should facilitate and encourage group submissions by farmers, and payments should reflect the associated increased private transaction costs.
- Extensive technical expertise and knowledge has accrued amongst agri-environmentalists. The process of scheme design should make maximum use of this expertise and experience available in Ireland. A **national steering group** should be established so as to ensure value for money and maximum environmental benefit.
- There should be an **education component** to future agri-environment schemes to provide life long learning with the intention of positively changing attitudes and behaviours. There is a significant cohort of environmental measures that have no net cost to farmers but deliver significant environmental benefit. These courses can facilitate both technical information in relation to the implementation of measures, but also measures to facilitate informed decision making so that farmers can choose measures that deliver environmental actions at least cost and potentially highest benefit to themselves. Courses must contain a practical component preferably based on site for relevant issues.
- Availability of agri-environment to all farms - Every farm has a capacity to deliver environmental benefit. Design of measures should support and enhance the verification of the **sustainability of Irish food produce** from farms who supply the majority of the production. Farms with non-Natura or specific priorities could focus on measures that deliver multiple simultaneous benefits for climate change, water quality and biodiversity. Measures on such farms have the potential to deliver significant national environmental benefit.
- **Professional involvement** - The resource of professional agri-environmentalists who have been trained and up skilled with continued professional development should be availed of as a vital part of future agri-environment schemes.
- **Scheme deadlines** - Agri-environment schemes must fit into a broader framework of a planned programme to facilitate the workload so that the

capacity of agri-environment professionals can be maximised to benefit the delivery of the scheme.

- A **parallel scientific assessment programme** should be considered to monitor and assess evidence of delivery of the environmental objectives and value for money.
  (For more detailed scheme operational recommendations, see section 9)

Organic Farming

The new scheme should especially encourage producers who supply organic markets and support those who remain in the sector. A number of alterations to the present scheme are recommended, including:

- a separate and increased rate of payment for **organic horticulture and arable producers;**
- **staggered payment** rates to encourage more smallholders to enter the sector.
- in-conversion and organic payment rates to be altered so as to support organic farmers who remain in the sector;
- provision of funding for the delivery of **accredited training** both before and during participation in the Organic Farming Scheme (similar to REPS schemes) delivered by accredited tutors;
- ensure that Organic Farming Scheme applicants are also eligible to enter other agri-environment and agro-forestry schemes;
- alter the minimum capital investment requirement of the on-farm grant aid scheme to allow greater flexibility for organic producers.
- encourage **Organic Producer Groups**
- support **co-operation** amongst organic farmers.

Forestry

Forestry, as a viable farm enterprise, should continue to be supported on an equal footing with other farming sectors.

- A **forestry advisory, training and promotion service** should be part of any national forestry program.
- The **existing forestry schemes** should continue to form the back bone of support for forestry
- Support for the management of forests (Woodland Improvement) and the **provision of infrastructure** (roads) is essential to ensure development of the resource.
- Provide funding to build knowledge capital through forest discussion groups, **forest owner groups, training and education**.
- Support for a**groforestry** which covers a range of production systems which mixes trees with crop/animal production.
- Growing of **mixed forests** - to date support for forestry funded predominantly monoculture plantations. Although this is economically sound practice, there is a potential risk in the context of environmental impact or indeed disease outbreak. Mixed forests are more sustainable economically, socially and environmentally.

- Support the development of **tree improvement in the context of disease resistance**. In order to improve timber quality and disease resistance, research and development is vital and must be specific to geographical areas.
- Support to forest owners affected by outbreak of tree diseases and other biotic and abiotic risks in the context of recent outbreaks of ash dieback and sudden oak death, where affected areas very often require destruction and replanting.
- More **flexibility** within schemes objectives other than timber eg. tourism, environment, energy.
- Schemes to cater for sites with environmental designations/ sensitivities/unenclosed land.
- Under current forestry support schemes, some potential forest sites may not be eligible for grant support on environmental grounds. A more flexible approach on sensitive sites would make more land available for forestry while carefully taking environmental issues into account.

Quality of Life and Social Inclusion

- Within the current policy context an important cross-cutting objective is the provision of incentives to reduce greenhouse gas emissions. From the perspective of agriculture and forestry, this may include incentives to develop renewable energy or facilitate the provision of carbon offsets through the planting of forestry. The agricultural, forestry and agro-forestry sectors are multi-functional with multiple objectives. To be efficient, the policy should also be **multi-objective**, helping to provide not only economic outcomes, but providing for improved environmental and social outcomes.
- An important component of the policy framework will be **capacity building**. There is some evidence that participation rates, particularly by farmer stakeholders, have been low for rural development policies. Mechanisms such as capacity building and human capital formation should be employed to improve the targeting and uptake of these policies. Capacity building is also important in relation to modernisation and improved competitiveness.
- Given that the primary focus of these axes is to facilitate diversification of farms and to enable wider restructuring to happen in the sector, Teagasc recommends that a guaranteed percentage of Axis 3 and 4 funding should be earmarked for farm households.
- Given Teagasc's extensive infrastructure and close contact with the farming community and particularly their clients, **Teagasc should act as a service facilitator to LEADER companies for services targeted at farm families.**
- Focus on increasing the capacity of farmers to adopt new technologies and ways of working on their farms through increased emphasis on farmer education, so the capacity of farmers for **innovation** is enhanced.
- Give increased emphasis to **knowledge transfer** that focuses on areas outside of technical agriculture such as **new ideas generation**, farm **diversification** options, farm financial skills, off-farm business skills, succession issues and farm safety.
- Support for **cooperative action/networks/clusters** would more effectively target vertical knowledge transfer to either geographic or thematic groups and would also facilitate horizontal learning and capacity building between disparate

groups in rural areas. This is of particular importance where individuals are innovating or diversifying into a new venture, or undertaking a new technology.

- Support for **integrating environmental and rural development actions.** Significant scope exists to achieve added value from schemes such as the Agri Environment Options Scheme (AEOS) and the Rural Environment Protection Scheme (REPS) which are funded under Axis II of the RDP. These schemes currently facilitate the generation of environmental public goods from private lands. However, additional outputs could be achieved if support was provided for farmers in these schemes to go one step further and link these environmental public benefits to community led LEADER type agri-tourism ventures.
- Support for a framework to exploit synergies between Teagasc and other rural based organisations such as Pobal, Fás, VEC's. Community Enterprise agencies or Social Welfare, to **leverage resources and contacts**, in order to provide a broader range of assistance to a wider cohort of vulnerable farm families.
- Support for a more **integrated organisational approach towards delivery of objectives** that would allow for knowledge transfer and innovation objectives which would be cross-cutting across a number of objectives. This would allow for a more integrated approach to the planning and delivery of actions between organisations such as Teagasc and the LDC's with the objective of providing targeted training and advice to farm families who are considering on or off-farm diversification. Such structures would also be valuable to enhance the streaming of training activities to suit the educational needs/stage of readiness for business.
- Develop r**ural tourism** by building tourism around historic features of the rural landscape; literary and musical traditions; rural cuisine; the retention of farmland features and architectural features in rural villages. As well as financial support, farmers would need advisory and business mentoring support. Local capacity building and networking would also be required to combat the perceived poor communication channels between the tourism industry, visitors, tourists, service providers and the farmers. The aspiration is that support for farm tourism would engender multiple benefits similar to those achieved as a result of environmental schemes.
- Support should be made available for **on-farm added value food, artisan food**, organic food products, and for direct selling of farm produce. Support should also be available for small artisan businesses to facilitate start-up by renting industrial kitchen units by providing mobile kitchens with appropriate refrigeration to allow artisan food producers to test and develop their products.
- Support for **social farming** projects where specific farms are supported to develop facilities so that children with special needs or disability can take an active part in the working of the farm.
- Within increasingly diverse farm households there are members (farm holders, spouses and farm offspring) who have preferences and capacities to engage in alternative rural entrepreneurship. As such, the **diversity of farm household members** (and not farm holders alone), must be specifically targeted by contemporary rural development programmes.
- Consideration should be given to more **innovative types of cooperation** activities that have not yet been tried in an Irish context, e.g. federated cooperatives or umbrella cooperatives of producer groups/small cooperatives. Allowing provision for applications from non-specified, experimental

cooperation's is also desirable as it would allow new and innovative cooperation types suitable to Irish conditions specifically to be fostered and piloted.

TABLE OF CONTENTS

Teagasc Submission to the Rural Development Programme

A. INTRODUCTION

This document forms the basis of the Teagasc submission in relation to Rural Development issues associated with Pillar II.

Our document has a number of key themes:

- Regardless of the design of the programme, we should maximise the gain for the economy of EU funds
- The objectives of the programme should facilitate as much as possible the objectives established under Food Harvest 2020 – Acting Smart, Thinking Green and Achieving Growth
- Facilitate structural change within the agricultural sector, both by encouraging change and by assisting diversification
- Contribute as much as possible to national job creation strategies
- Facilitate the achievement of national environmental policy objectives
- Build opportunities for value creation across the supply chain, by encouraging and drawing upon our reputation for high quality and safe food
- Cushion farmers who cannot participate in the growth strategy and to facilitate diversification
- In addition to financial incentives associated with the key objectives of the programme, it is important to ensure that farmers and other stakeholders have the capacity and knowledge to make the changes desired under the programme in the different dimensions
- A focus on effectiveness of programmes and minimising transaction and compliance costs (both monetary and otherwise)
- A focus on value for money, particularly in building upon existing infrastructure and institutions.

What should be the objectives of the future rural development policy?

The objectives of rural development policy as currently agreed are multifaceted. In addition to the production of market commodities such as food, fibre, feed and fuel the agricultural and forestry sector is multifunctional, providing many public goods such as landscape and biodiversity. It is also, especially in Ireland, the bedrock for sustainable rural economies and communities.

This multi-functionality reflects the diverse range of actors and problems that the policy addresses in the rural space as well as the different historical antecedents of parts of rural development policy. In the early CAP guidance policy, primarily focused on restructuring agricultural holdings which were seen as too fragmented and lacking in capital (both human and physical). The original rural development policy of the CAP focused exclusively on the restructuring and modernisation agenda within agriculture and forestry. This objective should receive renewed emphasis.

Another objective of future Rural Development policy should be to increase the diversity of employment in rural areas, to ensure that commercial agricultural and forestry production can take place in a manner that is acceptable to the general public, to address the exit of producers from agriculture, to provide access to retraining for

those with a long working career ahead of them outside of agriculture, and to improve the infrastructure of rural areas with a view to making attractive for a wider range of businesses.

As part of the wider CAP reform process the environmental aspects that currently reside under Pillar II of the CAP may form a central part of the rationale for continued taxpayer support for farmers (see Bureau and Mahé, 2012). Without seeking to prejudge the outcome of those negotiations or Ireland's position, Teagasc is of the opinion that there is a continuing need for Agri-Environment schemes if Ireland is to meet increasingly ambitious environmental objectives. Much of Irish and European agricultural and forestry production occur on farms which are not participants in current agri-environment schemes. It is likely that agri-environment schemes will become more demanding in terms of the public goods expected in return for tax payer support.

For many intensive producers participation in such schemes has not been attractive as their profitability depends on their ability to innovate both in terms of their production system processes and the size of their farm operations (restructuring).

Given the competitiveness challenges that will be faced by Irish and EU agriculture over the period 2013 to 2020, the ending of the milk quota system and reforms to Pillar I measures, Teagasc is of the opinion that a reformed Pillar II policy should:

- Focus on increasing the capacity of farmers to adopt new technologies and ways of working on their farms through increased emphasis on farmer education, so the capacity of farmers to innovate is enhanced;
- Give increased emphasis to agricultural extension activity so that the link between experimental farms and real farms is narrowed and farmers are made aware of the benchmarks against which they should be assessing their farm business's performance;
- Consider whether increased resources be devoted to agricultural and forestry production research that aims to increase enterprise profitability while also augmenting its environmental sustainability.
- Continue to support the provision of forest and agri-environmental services by the farming community through effective agri-environment and forest environmental schemes.
- Contribute to Farm Viability via targeted Income Generation Measures such as LFA's and New Business Support.
- Given the difficult public finance situation, focus on instruments that have the highest benefit to cost ratio.
- Where possible build upon existing resources, strengths, infrastructure and institutions.

How can the RD policy instruments be made more effective?

Fundamental to the effectiveness of Rural Development Policy is a vision for the future of rural society. The White Paper on Rural Development spelt out a vision for rural society in a different era. In the context of changing economic circumstances, restructuring of agricultural and rural economies and new policy frameworks that will emerge as a result of CAP reform, through spatial strategies etc., it would be worth revisiting what the national vision is for Rural Ireland. Particular emphasis should be

placed on territorial policy in addition to sectoral policy to achieve the multi-dimensional objectives of the development of rural areas.

However, independently of a vision for rural society and wider development issues, the design of CAP interventions in rural development should have a number of objectives. These include:

- Clear achievable outcomes. Key to public support for rural development policy is the demonstrable achievement of desired outcomes from this policy. It is important that actions or measures be measurable, with outcomes being readily identifiable. This will require benchmarking of the pre-reform situation and monitoring and evaluation of outcomes. Pillar II should therefore incorporate a research and evaluation component.
- Transaction costs. However, there is a trade-off between the net public value of the policy and the cost of administering or monitoring the policy. The higher these transaction costs, the lower the net public value. Therefore an appropriate balance needs to be struck between ensuring value for money for the public purse and over burdensome regulation and monitoring.
- Cost-Benefit Analysis. The design of policy interventions in rural development should be underpinned by cost-benefit analysis, incorporating not only a Value for Money exercise but also incorporating the non-monetary value of multifunctional goods and services provided by agriculture and rural communities.
- Coordinated or cooperative action. Frequently gains from a policy intervention can be greater when actions are coordinated as opposed to individual uncoordinated actions. These include the delivery of public goods such as landscape, biodiversity or environmental services, integrated food and forestry supply chains and producer groups. These gains can be considered economies of scale. It would therefore be useful to incorporate features within rural development policy that would encourage greater cooperation and coordination of measures and the promotion of greater social capital.
- Multi-objective. The agricultural and forestry sector is multi-functional with multiple objectives. To be efficient, the policy should also be multi-objective, helping to provide not only economic outcomes, but providing for improved environmental and social outcomes. Within the current policy context an important cross-cutting objective of rural development policy is the provision of incentives to mitigate the impact of agricultural production on the environment. From the perspective of agriculture and forestry, this may include incentives to develop renewable energy, recycle valuable water resources, or facilitate the provision of carbon offsets through the planting of forestry.
- Flexibility to respond. Some flexibility should be retained within the policy framework to allow for responses to issues that arise over the course of the policy. This may include dealing with challenges associated with economic change or specific environmental issues that might arise.
- Reflect diversity. Policy design should reflect the diversity of the rural economy and the agriculture and forestry sector. This may include geographical or group specific targeting.

How can the management/implementation of the RD policy be improved?

Mechanisms that cater for the specific needs of local areas but which are driven by an overall vision for rural society can contribute to the development of an integrated programme that delivers local as well as regional/national needs. This points towards integration of rural development and regional development policies.

Capacity Building

An important facilitatory component of the rural development policy framework must be capacity building. There is evidence that participation rates, particularly by farmer stakeholders, have been low in actions funded under Pillar II, Axes 3 and 4 (quality of life in rural areas and Leader). Mechanisms such as capacity building and human capital formation should be employed to improve the targeting, uptake and participation in such programmes. Capacity building is also important in relation to modernisation and improved competitiveness.

Given the importance of restructuring and the improvement in competitiveness required by the agricultural sector, proceeds from the modulation of single farm payments under Pillar I and any increase on modulation that may arise from reform of Pillar I policies should be targeted at the Pillar II, Axis 1 agricultural and food supply chain modernisation and restructuring agenda.

Public Engagement

The CAP has provided agriculture in Europe, unlike other productive sectors, with a sustained level of public support over the last 50 years. Given the sector's increasing competitiveness and market orientation as a result of various CAP reforms, questions have been raised as to why this continued level of support (approx 40% of the EU's budget) at tax-payers expense is necessary. Reform of the CAP has seen a shift in emphasis from production subsidies to farmers to support for the provision of public goods[1]. This provides a basis for the argument of continued support: there is limited incentive for farmers to provide public goods without intervention as there is limited incentive for users to pay for such goods[2].

The public has an understanding of the public good aspect of agriculture: a Eurobarometer (2012) report has identified that the public is aware of the role of agriculture in contributing to the environment and rural areas. Specifically it found that:

- 81% of respondents consider that agriculture is beneficial for the environment
- 86% agree that agriculture contributes to the beauty of the countryside

[1] "There is a wide range of public goods associated with agriculture, many of which are highly valued by society. The most significant of these are environmental - such as agricultural landscapes, farmland biodiversity, water quality, water availability, soil functionality, climate stability (greenhouse gas emissions), climate stability (carbon storage), air quality, resilience to flooding and fire – as well as a diverse suite of more social public goods, including food security, rural vitality and farm animal welfare and health". Cooper et al., 2009

[2] This may raise the question "Is support for farmers the most efficient way of delivering support for environmental global public goods?"

- 89% believe that agriculture helps to protect rural areas.

However respondents were not questioned about their understanding of the relationship between expenditure on the CAP and its impact on agriculture and rural areas. Ensuring the public/tax-payer is aware of the important role the CAP plays in providing safe, quality food in an environmentally friendly way and contributing to the economy, as opposed to a narrow understanding of its role in terms of supporting farmers' incomes, is important to ensure continued support for the CAP. This could be achieved through allocating a proportion of the CAP budget for public awareness and engagement activities that heighten the publics' awareness and appreciation of CAP expenditure. Initiatives such as those by EISA, the European Initiative for Sustainable Development in Agriculture, and Agri Aware, could be built upon to enhance public trust and understanding of farming and food and the role of CAP in this regard.

B. ECONOMIC ANALYSIS AND RESEARCH EVIDENCE

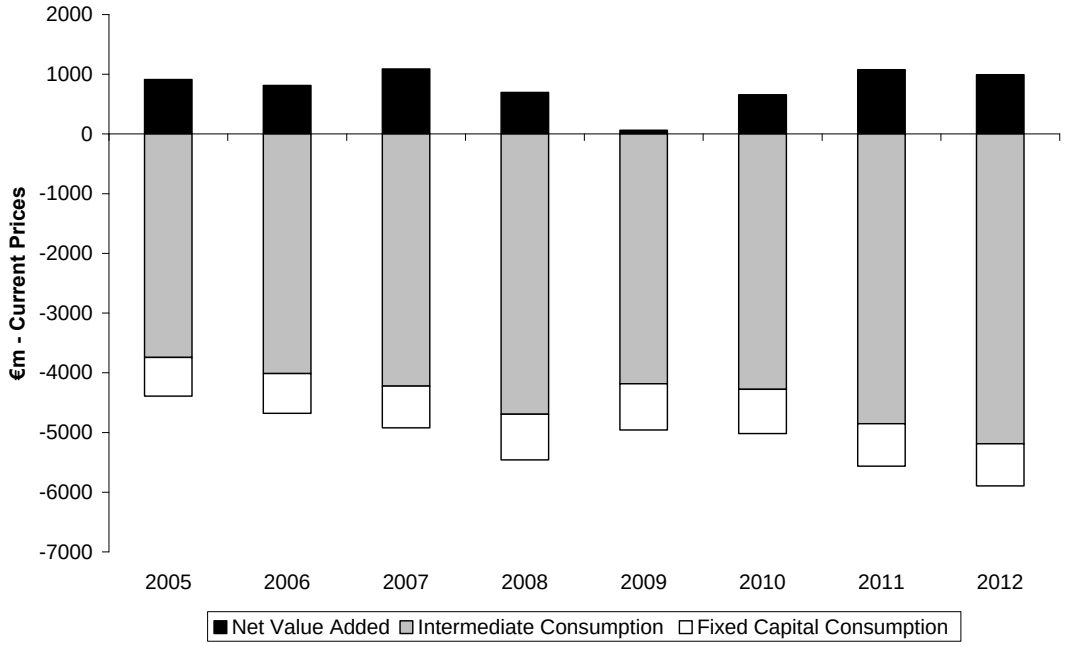
In this chapter we outline some of the main economic characteristics of the Agri-Food sector in Ireland. We will subdivide our discussion in relation to:

- Trends in Aggregate Output
- Export Trends
- The Contribution of the Agri-Food Sector to National Income
- The Contribution of Subsidies
- The Structure of the Agricultural Sector
- Farm Viability
- Farm Structures and Restructuring
- Innovation, Capacity Building and the Return on Investment to Agricultural Research and Knowledge Transfer.

Trends in Aggregate Output

The net value added by Agriculture comprises gross value added, which comprises Farm Output (in the form of sales of cattle, milk cereals etc.) minus Intermediate Consumption (in the form of feed, fertiliser, seed etc.) minus fixed capital investment costs. Figure 1 reports trends in these components, with net value added of about €1bn per annum from 2005 to 2012, with the exception of 2009. We notice the severe impact on value added in 2009, when value added was almost completely eroded. However, the period since 2009 has witnessed a rebound by the Agricultural sector, reflecting the sector's buoyancy since the crash.

Figure 1. Net Value Added From Agriculture



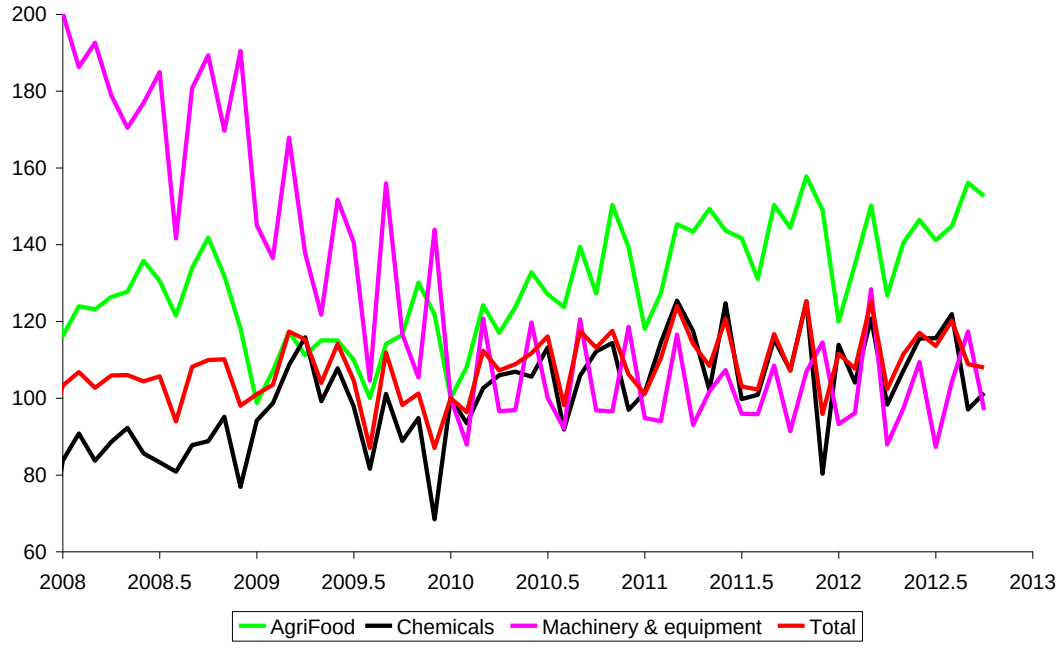
Source: Central Statistics Office

Export Trends

The agri-food sector is the third largest merchandise export sector in Ireland. Figure 2 reports an index of exports amongst the 3 largest merchandise exporting sectors and across merchandise exports with a 2010 base. While the exporting sector has been one of the few success stories since the economic crash in 2008-2009, the Agri-Food sector has seen exports grow at a faster rate than any of the other large exporting sectors and faster than the growth rate in total exports. Agri-Food exports have accounted for 25 % of Ireland's total increase in export revenues. Bord Bia highlight the fact that the value of Irish agri-food exports increased by 12% in 2011, to reach an all-time high of nearly €9 billion and then exceeded €9bn in 2012, even with lower commodity prices.

This growth has been driven by relatively improved commodity prices since 2009, a weaker euro, some increase in volume and a diversification of export destinations, particularly in Asia, where exports are up 75% since 2010.

Figure 2. Exports 2008-2012 (2010=100)

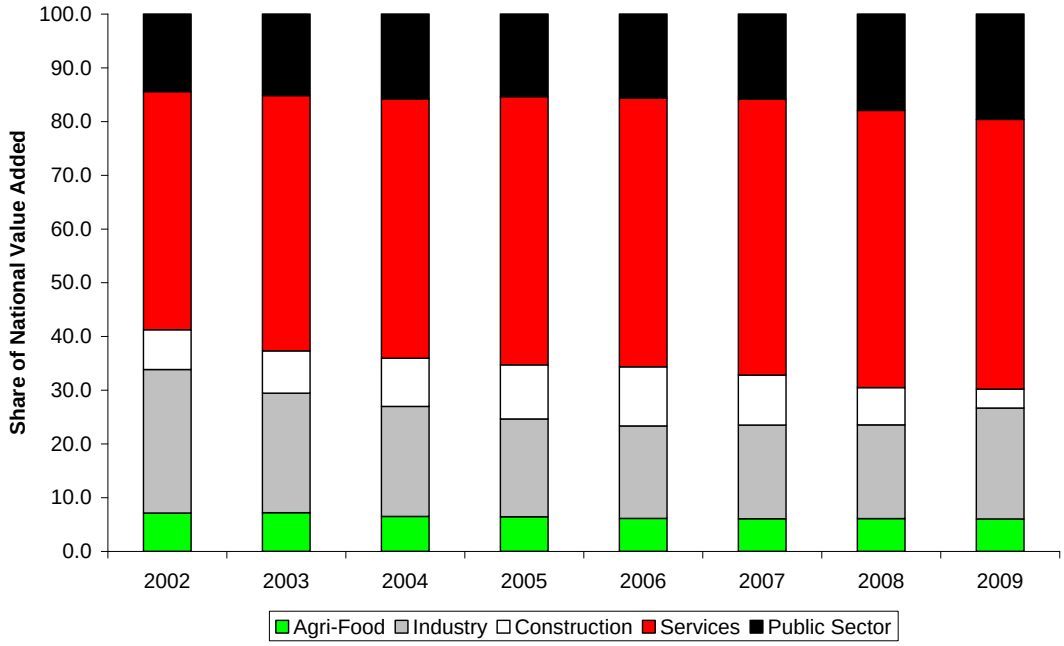


Source: Central Statistics Office

The Contribution of the Agri-Food Sector to National Income

The most recent statistics from the CSO indicate that the Agri-Food sector contributed about 6% of total Value Added in the economy and comprised about 7.5% of employment.

Figure 3. Share of Aggregate Value Added



Source: Central Statistics Office

However, despite the relatively small size of the agri-food sector in the overall economy, the wider bio-economy sector is a major source of net export earnings (Riordan, 2008). The wider bio-economy incorporates other sectors built around natural resources and includes the beverage sector, infant milk formula sectors etc. It is related but significantly larger than the more narrowly defined agri-food sector, accounting for about 19% of exports in 2008, compared with 10% for the narrower agri-food sector. Riordan (2008) highlighted however that the bio-economy's contribution to net foreign earnings amounted to approximately 40%. The main reasons for this disproportionately large contribution to net foreign earnings are:

- Lower import requirements per euro of exports
- Higher receipts of EU payments
- A higher local multiplier
- A lower share of international ownership and repatriation of profits.

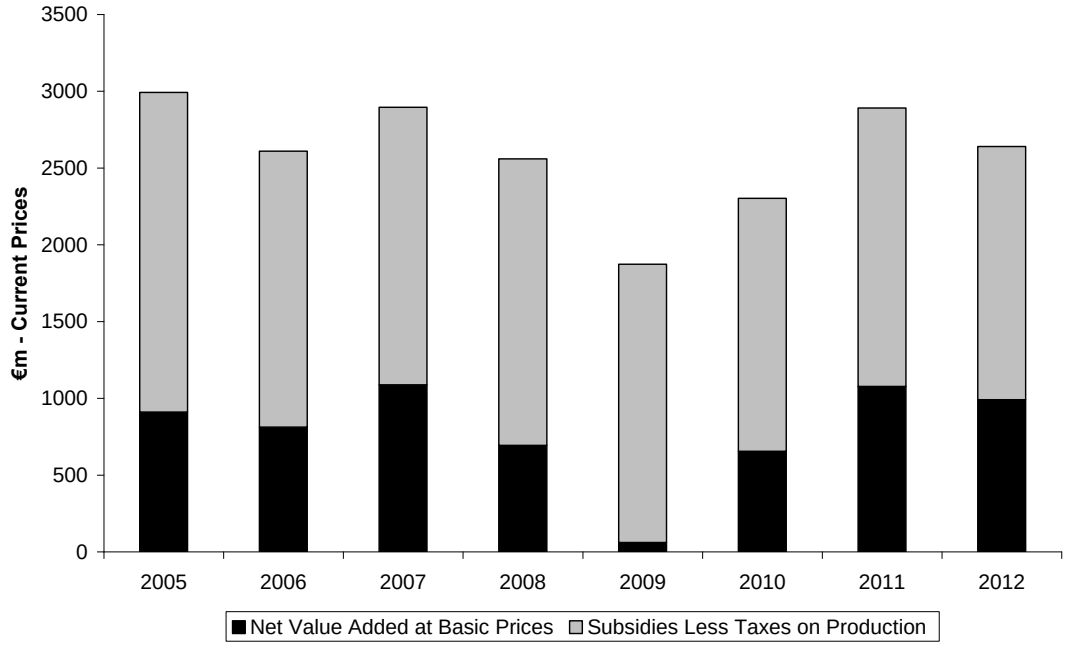
In terms of Balance of International Payments flows per €100 of merchandise exports, in 2008 every €100 of exports from the bio-economy generated €52 in net foreign earnings. In contrast, exports from the non-biosector, contributed only €19 in net foreign earnings for every €100 of exports. Thus the net impact on the economy of this sector is significantly higher than the share of national output would indicate.

The Contribution of Subsidies

While the overall contribution of the Agri-Food and Bioeconomy sectors to net export earnings is very high, the primary agricultural sector remains highly reliant on subsidy income. Combining the net value added from figure 1 with net subsidy payments, we produce Agricultural Factor Income reported in figure 4. Typically about 65% of factor income comes in the form of subsidies, largely coming from the Common

Agricultural Policy. These payments are thus very important in maintaining the viability of the primary agricultural sector on which much of the wider sectoral returns are based.

Figure 4. Agricultural Factor Income



Source: Central Statistics Office

There are considerable differences in the reliance on subsidies across the various farm systems. Of all the farming systems contained in the Teagasc National Farm Survey (NFS), the dairy farm system is the only system that consistently returns a market based profit. In figure 5, we report average family farm income across different farm systems for 2008. The Dairy system is the only consistently profitable system based upon net margin (market sales minus direct and overhead costs). Other systems rely on subsidies to produce a positive family farm income (net margin plus subsidies). The net margin per hectare for the specialist Dairy sector in 2008 was €600 per hectare higher than the next system (mixed Dairy and Other) and over €700 more than the next non-dairy system.[3]

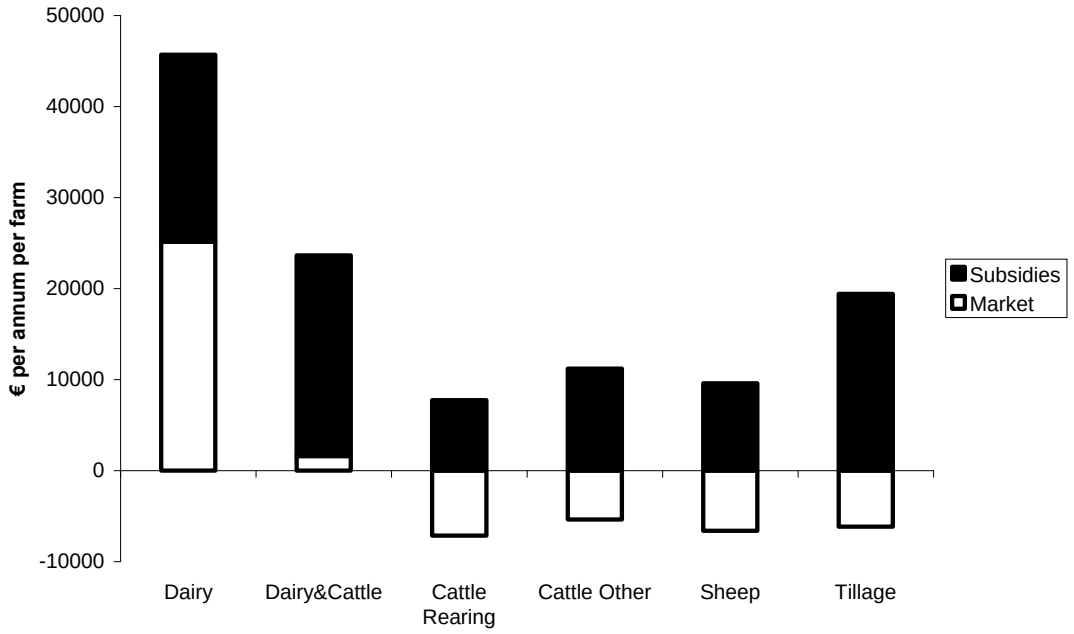
In June 2010 the CSO carried out the 2010 Census of Agriculture in line with Regulation (EC) 1166/2008 of the European Parliament and the Council of 19 November 2008. There is a statutory requirement on all farmers to complete the census of Agriculture. According to the preliminary census results there were 139,829 farms in June 2010, which is a decline of 1.2% from the 141,527 farms in June 2000. At the same time the Utilised Agricultural Area (UAA) increased by 2.8% to 4,569,359 hectares. In 2010 Commonage accounted for 422,415 hectares which was 8.5% of the UAA in 2010. Including this area brings the total overall UAA to 4,991,774 hectares. The average farm size increased by 4.1% between 2000 and 2010. It rose from 31.4 hectares in 2000 to 32.3 hectares in 2007 and to 32.7 hectares in 2010. However, smaller farm sizes were found in the Border, Midland and West (BMW) region where the average farm size was 27.3 hectares, compared to the

[3] It should be noted that the tillage sector has in 2010 returned to a market profit

Southern & Eastern (S&E) region where the average farm size was 38.6 hectares. (RDP -2011 Annual Report)

The Structure of the Agricultural Sector

Figure 5. Family Farm Income by Sub-Sector (2008)



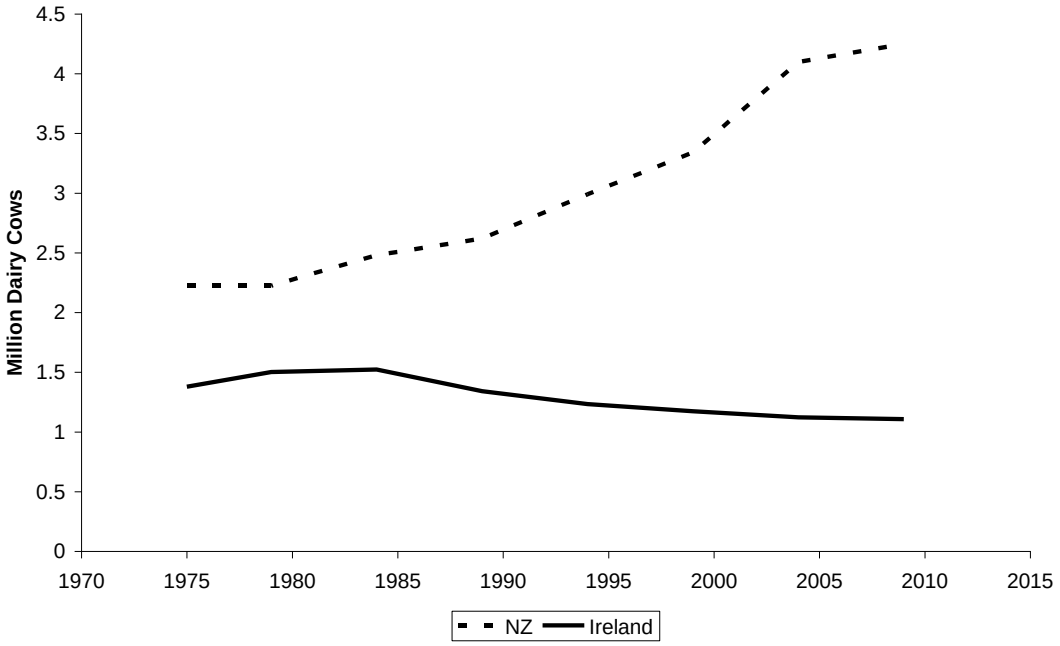
Source: Teagasc National Farm Survey

Food Harvest 2020

While the sector has benefitted from improved international demand for food products, the national development strategy for the sector, Food Harvest 2020 has focused the minds of the entire sector to achieve growth.

Food Harvest 2020 has an ambition to grow milk volume output in Ireland by 50% by 2020 and cattle value by 20%, amongst other targets. Although the dairy sector is consistently the most profitable, and is competitive internationally due to being based upon a cost effective grass based system, the system of milk quota that has been in place since 1984 has restricted production levels. From 2015 however, milk quotas will be abolished allowing the possibility of dairy expansion and will be one of the drivers that can facilitate the achievement of this target.

Figure 6. Irish and New Zealand change in Dairy Cow Numbers 1984-2009



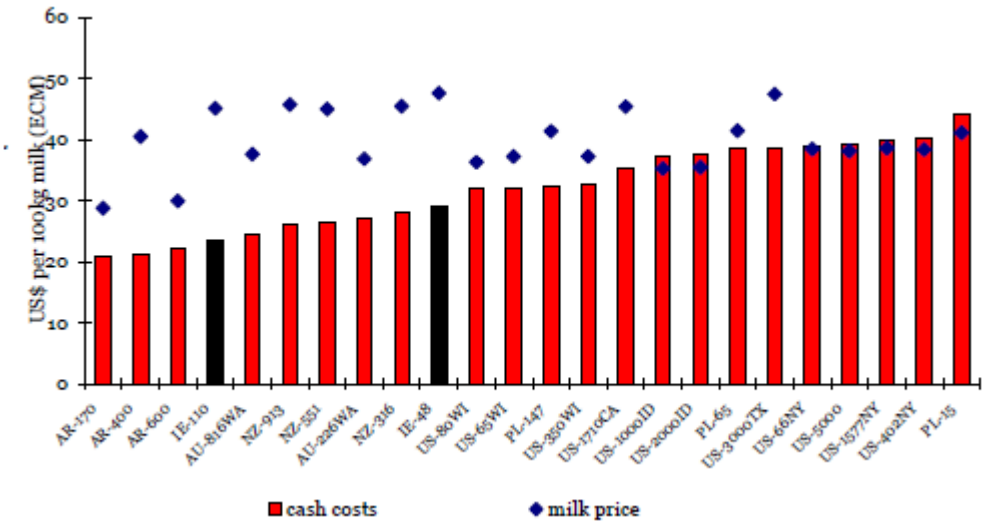
While dairy production has stagnated in Ireland since milk quota was introduced in 1984, New Zealand which also uses a relatively extensive grass based dairy production system, underwent a large expansion (Figure 6). Prior to milk quota, both countries expanded at a similar rate. From 1984, the EU adopted the quota system, whilst New Zealand deregulated the agricultural market place, and farmers with the capacity to move into dairy or to expand took advantage of the profit potential. In the 29 years from 1984 to the present, New Zealand dairy cow numbers nearly doubled, while Irish numbers decreased by a quarter. The expansion in dairy cow numbers masks the fact that the productivity of cows in NZ also increased, with milk solids expanding by 37% from 1984, while the fat percentage of Irish milk increased by 8% over this period. The effective growth rate of New Zealand dairy production has been consistently around 5% per annum.

If the Food Harvest 2020 targets are to be achieved, production will need to grow by 6% per annum from 2015 to 2020. A continuation of this rate of expansion would result in an increase in output of 91% by 2025 and doubling of production by 2026. Growing at New Zealand rates of growth of 5% per annum, we would see an increase of 41% by 2020, 72% by 2025 and a doubling by 2029. Increasing at a higher growth rate of 8% per annum, we would see milk output double by 2024.[4]

Irish dairy production has the potential for expansion primarily because of the relatively competitive position of Irish dairy production relative to competitor countries. Donnellan et al. (2011) highlight that the 110 cow Irish dairy farm has amongst the lowest cash cost base of any country (Figure 7).

[4] Output can however by increased via price growth.

Figure 7. Dairy Farm Competitiveness



Source Donnellan et al. (2011)

The gains from expanding milk production do not however benefit farmers only. In fact most of the value in the production of milk rests with the processing sector, with returns to capital and labour. Miller et al. (2011) estimate that for every €1 increase in milk production, there is a corresponding increase of €2.45 increase in total milk output. This presumes a current product mix. Increasing the proportion of value added production would also increase total value added from the sector.

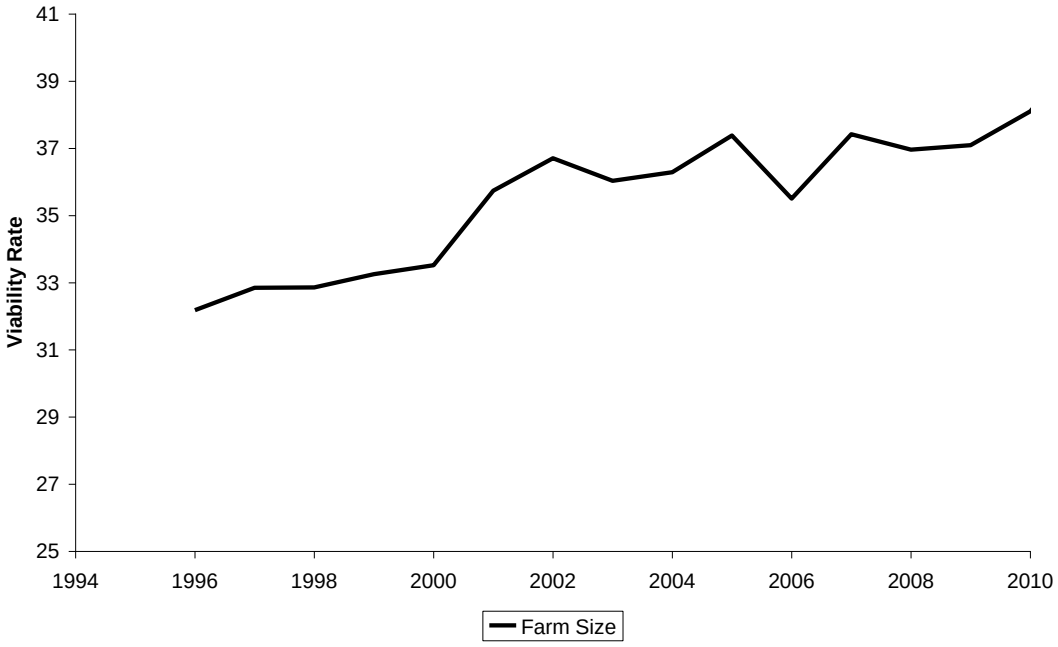
However milk expansion has a number of challenges outlined in the following sections, including

- Land Access
- Demographic Profile
- Uptake of Technologies
- Financial strength
- Price Volatility
- Environmental constraints.

Farm Structures and Restructuring

Irish farm sizes are small relative to our main competitors. As a result there is less land and consequent output over which to carry overheads and provide an income for a family, thereby putting pressure on farm profitability. However as we can see from the Teagasc National Farm Survey, the average farm size has increased by approximately 6 hectares per farm from 1995 to 2010, a growth rate of about 1% per annum. However, land sales still remain very small and significant barriers to land access remain. Farm sizes have increased but with an increase in fragmentation, where the average number of parcels per farm is now 3.5. Farm fragmentation is a growing problem and is a key barrier to efficient farm production.

Figure 8. Average Farm Size (Hectares)



Source: Teagasc National Farm Survey

Cost Price Squeeze

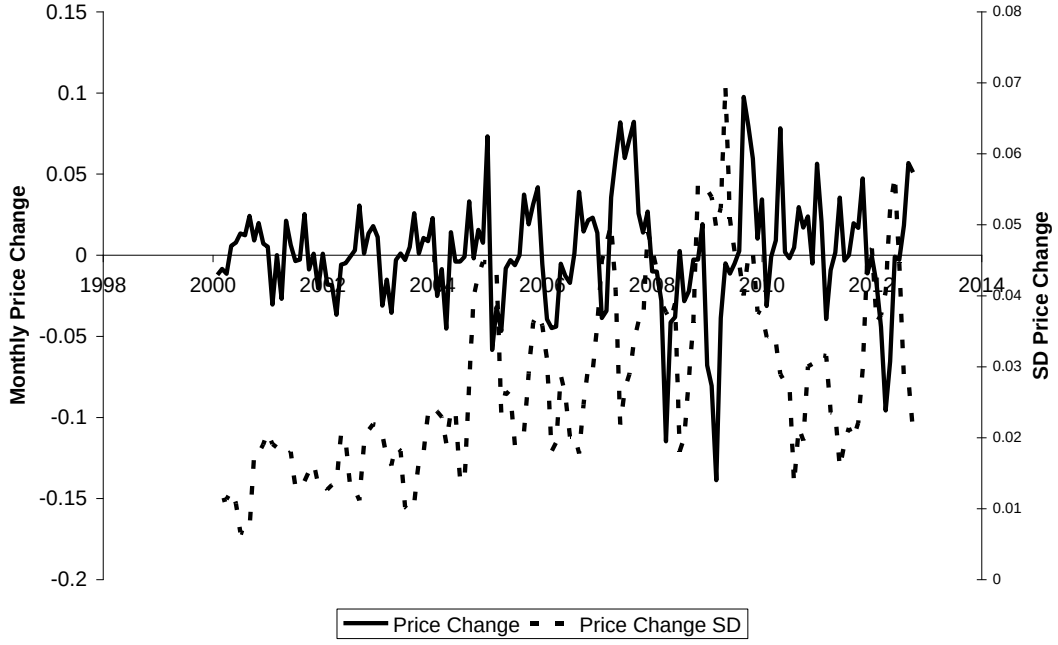
A particular challenge faced by Agriculture and other mature sectors is that input prices tend to grow at a faster rate than output prices. Innovation in global supply chains, even with growing global demand for food stuffs has pushed prices downwards in the long term. Thus in general output prices grow at a faster rate than input prices. This process is known as a cost price squeeze. Figure 9 describes the trend since 2000 of the CSO Agricultural Input and Output price indices. Over time, we see that the gap gradually widened until 2010, with input prices peaking at 40% higher growth than output prices. However, since the sector started to recover from 2010, this process has reversed, with higher output price growth than input price growth.

A noticeable feature since 2006 has been a visible increase in both input and output price volatility. This is particularly visible in figure 10, with increasing amplitudes in price changes and an upward trend in the standard deviation of price change over time.

Figure 9. Input and Output Price Indices

Source: Central Statistics Office

Figure 10. Milk Price Volatility

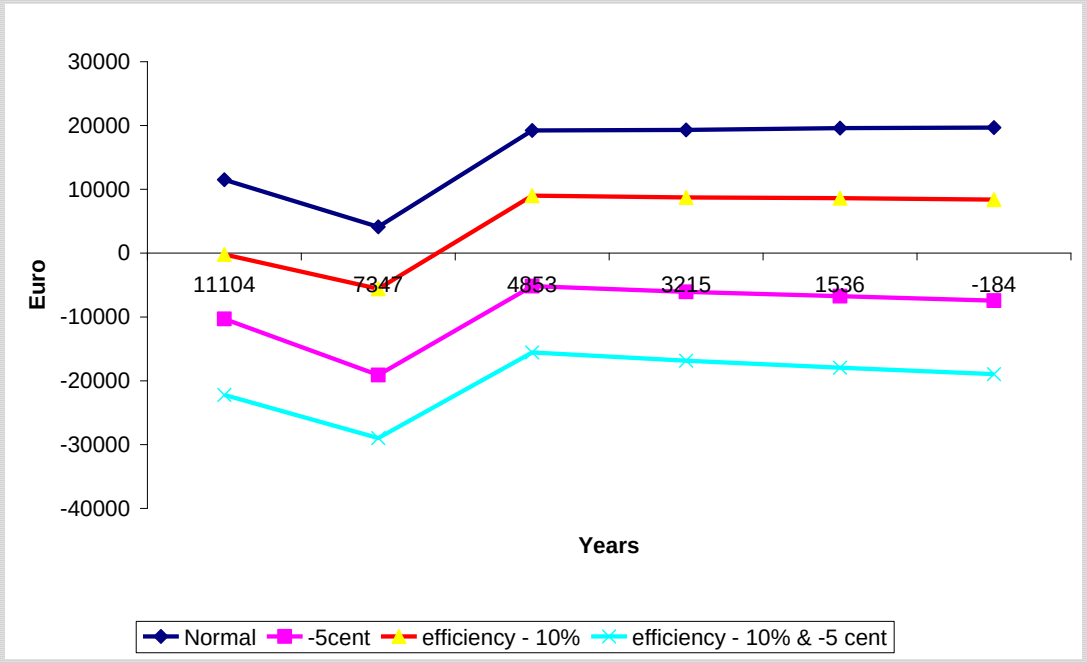


Source: Central Statistics Office

Volatility increases uncertainty and makes decisions more difficult. As most people are risk averse, increased volatility reduces the value of income and reduces incentives to invest. In figure 11, we report the net cash flows for a farmer investing in milk expansion. Under normal prices and efficiency during the initial investment phase, they will have a positive cash flow. However a 5 cent per litre price shock will

see the farm having a negative cash flow. This effect is exacerbated by less efficient farms. This emphasises both the importance of risk on outcomes and on the financial skills that farmers require when managing an investment.

Figure 11. Net Cash Flows for an Average Farm Doubling Milk Production



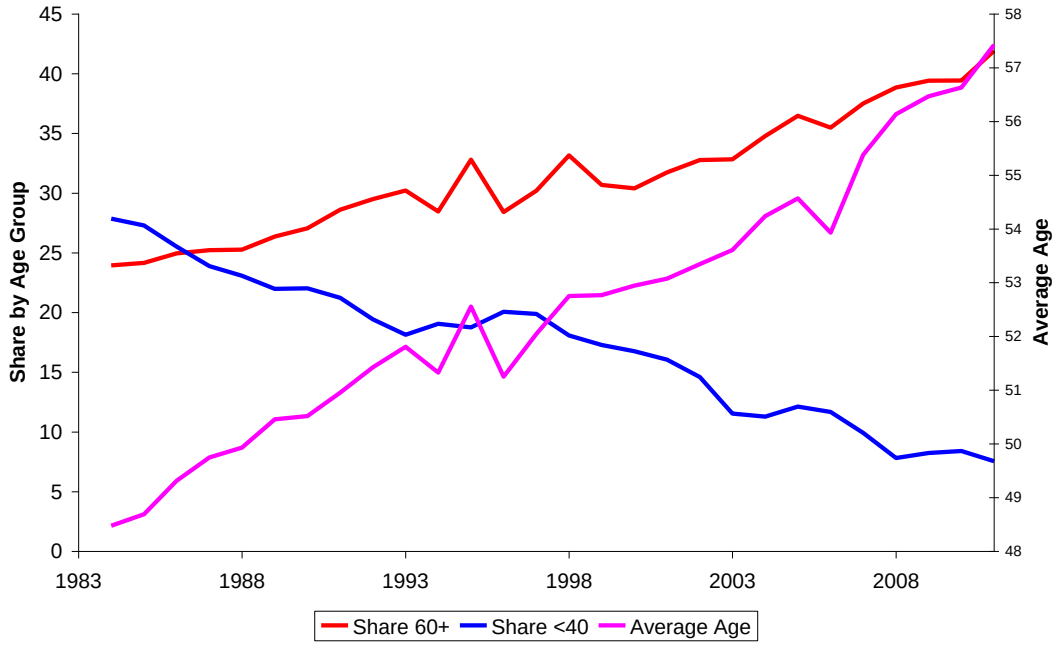
Source: Authors Calculations

Demographic Change

One of the factors that has limited the necessary structural change in Irish agriculture has been the changing age profile of farmers. Figure 12 reports the changing age profile of Irish farmers. The average age grew from 51 in 1997 to over 57 in 2011, a growth rate of nearly half a year per year. This was accompanied by a rising proportion of farmers aged 60 or over which was over 40% in 2011 up from about 30% in 2000. The share of those aged 40 and under is going in the other direction, falling from 42% in 2000 to 25% in 2011.

With over a quarter of all dairy farmers over 60 years or over and with relatively few new entrants, the likelihood is that the sector will continue to see exits, which will create challenges to the expansion of milk production. Hennessy, (2007) suggests that exits will initially accelerate following quota removal as high cost farmers feel the price cost squeeze that accompanies the milk quota expansion and exit the sector.

Figure 12. Demographic Profile



Source: Teagasc National Farm Survey

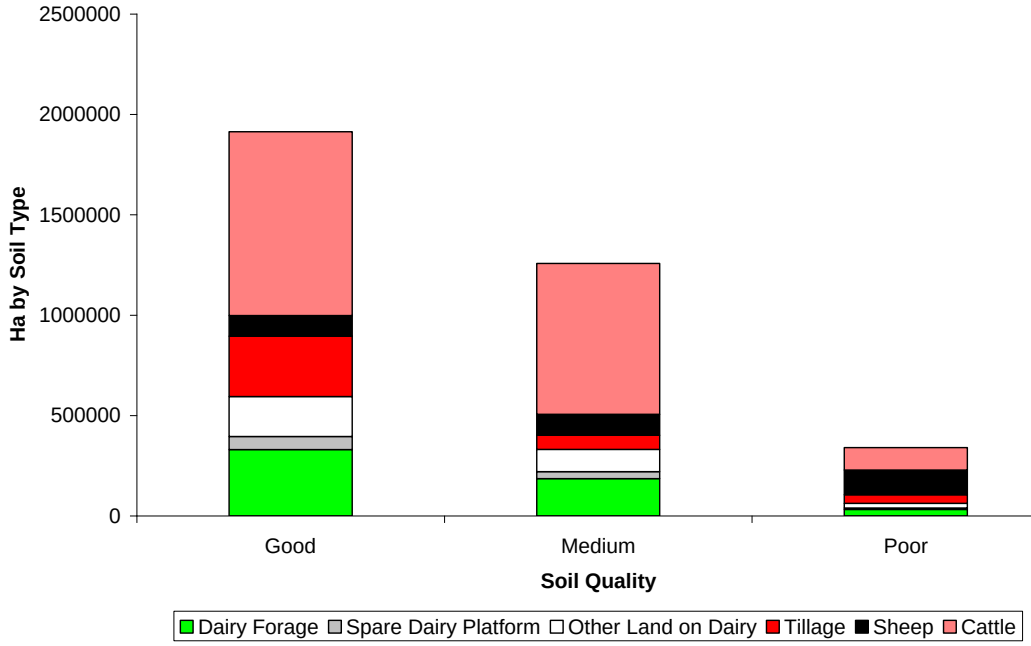
Land Use

In addition to farm management, skills and the quality of farm infrastructure, farm productivity depends upon soil and land quality. Figure 13 describes the types of agricultural land use on different types of soil.

Figure 13 charts land use and soil quality using Teagasc NFS data. Cattle farming is the largest agricultural land use with about 50% of all land on NFS farms with non-dairy cattle. Dairy forage is the second largest land use with 16% of agricultural land devoted primarily to dairy production, with 17% of the best land. There is quite significant land (12.5% of all land) within dairy farms currently being used for other purposes, which will be the easiest on which to expand. Tillage farms account for about 12% of all agricultural land, but about 16% of the best land. Sheep meanwhile comprise about 9% of all land, but 36% of the poorest land.

In looking at the potential returns for new entrants in a move from another sector to dairy production, we report the gross margin (which ignores overheads) in table 1 by a 6 category decomposition of soil type. On average the dairy gross margin is 9 times that of other sectors. This gap is slightly lower on better soil types. Nevertheless, there are substantial possibilities for higher returns from land use from dairy production relative to other sectors. Dairy expansion is conditional on having access to land, skills and financial resources etc.

Figure 13. Land Use on Farms



Source: Teagasc National Farm Survey

Table 1. Gross Margin (GM) and Fixed Costs (FC) per hectare for Dairy and non Dairy, 2008

Soil	Non-Dairy GM	Dairy GM	Non Dairy FC	Dairy FC
Best	307	2091	438	870
2	259	1949	512	1076
3	177	1758	460	920
4	160	1539	402	808
5	96	1235	346	712
Worst	78		247	0
Total	213	1867	440	874

Source: Teagasc National Farm Survey, 2008

Note: Non-Dairy GM is based upon the Farm Gross Margin per hectare for non-dairy system farms, while the Dairy GM is based solely on the gross margin coming from the dairy enterprise

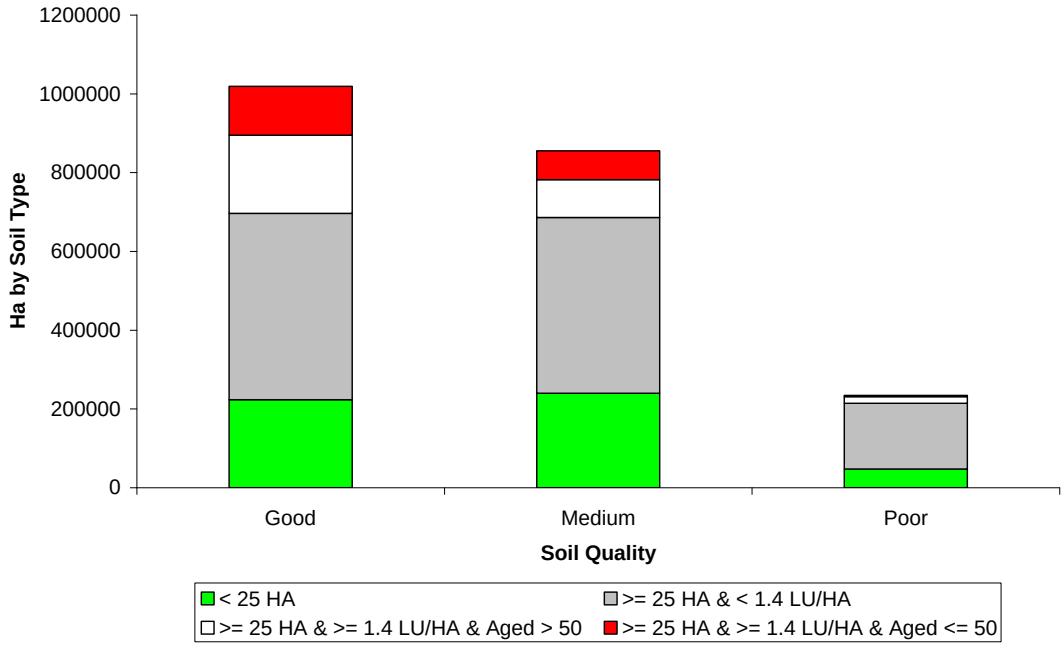
Of the non-dairy land, we consider in figure 13 the characteristics of the farms by soil type. About one sixth of all land in the top soil types are tillage farms. While these farms have sufficient quality land and are in general large in size, they are unlikely to have facilities for handling dairy animals and may have limited animal husbandry experience. They would thus require quite significant investment and re-skilling/and or change of management to move into dairy. Considering the top 2 soil categories, a further 6.5% of the land has sheep enterprises, which again are likely to face issues in terms of investment in addition to specific dairy management skills.

It is likely that managing cattle systems is the most complementary system for moving into dairy. About half of the land on farms with the top two soil types has cattle systems. However of these about 22% of these have farms with less than 25 hectares and thus are likely to require consolidation before moving into dairy. Of the

remainder, 46% of cattle farms in the top two soil types have stocking rates of less than 1.4 LU/ha and have 25 hectares or more. The stocking rate is low largely due to either age (37% aged 65+) or due to other work commitments (30% with an off-farm job). The most likely therefore who could consider moving into dairy are those with stocking rates of 1.4 or higher, which amount to 32% of cattle farmland in the soil range and amount to 15% of all farmland with these soils. However over a third have off-farm employment. Age is also likely to be an issue with 19% over 65 years of age in 2008, and only 12% of this group are under 50. With the rising age-profile this will be even lower when milk quota is eliminated.

Thus although there is quite a lot of land that could be utilised for dairy expansion, even before one considers issues such as skills, access to capital, the fractured nature of agricultural plots, there are quite a number of issues associated with potential structural change. One of the critical issues will be the decoupling of ownership and production. As we can see a significant proportion of the land could be used for dairy expansion, but given the demographic and land structures this may prove difficult. Greater leasing of land or the use of farm partnerships could potentially facilitate this.

Figure 14. Land Structure on Cattle Farms



Source: Teagasc National Farm Survey

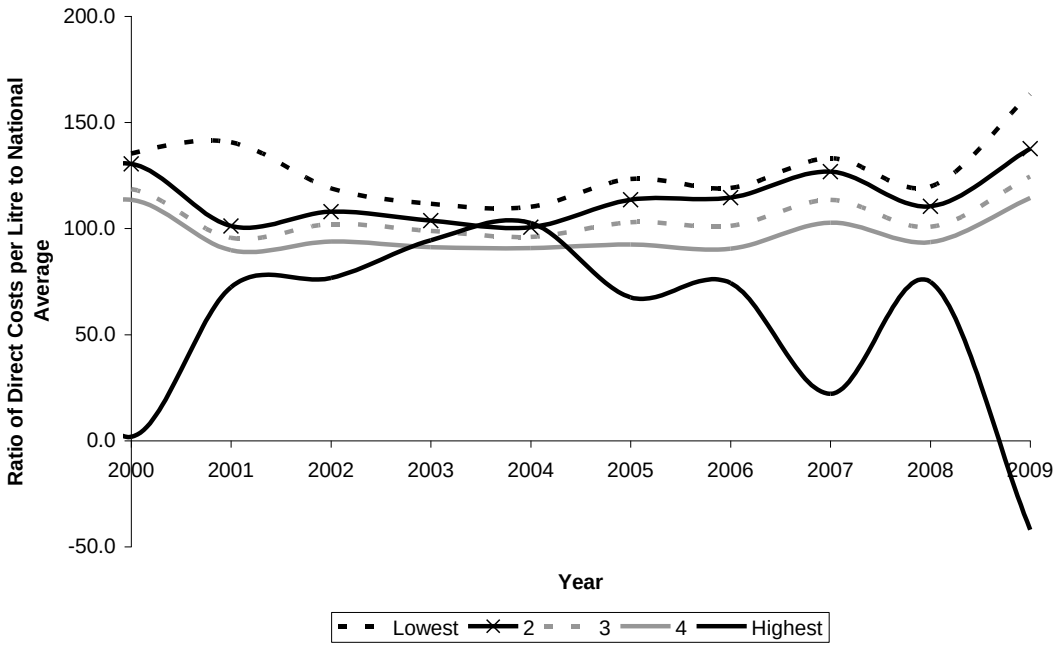
Differences in Productivity

An issue that is both a challenge and an opportunity is the productivity gap between the top and bottom farmers. In relation to potential dairy expansion, of particular relevance will be the capacity of farms to withstand the continued cost-price squeeze observed in figures 10 and 11. There is a substantial difference between the lowest cost farms and the highest cost farms (see Figure 15); the gap between the lowest cost and highest cost farms has been 100 percentage points (of the average cost) higher and has widened over time as the top 80 percent of producers have improved their efficiency relative to the bottom 20 percent. This will continue to put pressure on the highest cost producers. This can be seen in Figure 15, where we report the net margin

per litre relative to the national average for cost quintiles. We see the substantial income volatility of the bottom quintile relative to other groups and since 2003, the fall in net margin per litre relative to all other groups.

Thus there remain challenges to close the productivity gap, but also opportunities for increased income with an existing land base if productivity can be improved.

Figure 15. Distribution of Net Margin per Litre by Cost Quintile



Source: Teagasc National Farm Survey

Innovation and the Return on Investment to Agricultural Research and Knowledge Transfer

Critical to the achievement of improved competitiveness and productivity gain is the availability of appropriate technologies and an effective transfer of these technologies to farmers.

Table 2. Rates of Return to Irish Agricultural Research

Research Programme	Internal Rate of Return
Potato Breeding	9%
Milking Machine Research	44%
Silage Research	46%
Malting Barley Research	95%
Pig Breeding	74%
Phosphorous on Grassland Research	69%
Mushroom Growing Research	47%

Source: Teagasc National Farm Survey

It has been shown that investment in Agricultural research and knowledge transfer yields significant returns. Table 2 reports an analysis that Boyle et al. (2002) undertook to evaluate a number of research and knowledge transfer initiatives in Ireland. The internal rate of return in most cases was in the range of 40-70%,

consistent with international studies of agricultural research and knowledge transfer. These thus represent very good value for public expenditures, comparing very favourably with the rate of return on other potential public capital expenditures.

However, key to achieving a return on investment in research, and in relation to improving farm incomes, is the adoption of the technology. The higher the rate of adoption, the higher the rate of return on both public and private investments.

Public research institutions such as Teagasc and Universities are continuously developing new technologies, tools and management practices that could potentially lead to productivity gains. Challenges however remain in maximising the uptake of technologies. Table 3 presents data on the adoption of a number of key grassland, genetics and financial technologies developed by Teagasc. Adoption rates are higher amongst the more commercial dairy farming sector. However it varies from 15% of dairy farmers using grass budgeting relative to 93% undertaking controlled grazing. The uptake of these technologies is likely to have risen in subsequent years due to the Dairy Efficiency and Beef Technology Adoption Programmes.

Table 3. Use of Key Technologies in 2009

Key Technology	Dairy Farmers %	All Farmers %
Grassland Management		
Grass Covers	22	4.9
Grass Budget	15	2.9
Controlled Grazing	93	21
Reseeding	64	35
Genetics		
Genomic Bulls	27	
Financial Management		
Teagasc eProfit Monitor	30	7
Cash Flow Budget	16	16

Source: Teagasc National Farm Survey

Teagasc is continuously improving Knowledge Transfer methodologies such as the use of discussion groups for knowledge dissemination. Their use and the use of other technologies such as the Teagasc eProfit Monitor have been incentivised by public policy programmes such as the Dairy Efficiency Programme DEP) and the Beef Technology Adoption Programme (BTAP).

Bogue (2013) in collaboration with Teagasc undertook an evaluation of dairy discussion groups. Table 4 reports the effect of group membership on physical performance, with respect to the achievement of Teagasc roadmap targets for yield, quality and feed usage. Teagasc National Farm Survey data from 2011 showed higher levels of performance for both established (pre-DEP) and new discussion group members in comparison to non-members.

Table 4. Percentage Achieving Teagasc Roadmap Targets

Technical Performance Indicator	Established Members	New (DEP) Members	Non-Members
Milk yield per cow: ≥ 5,200 litres	56	54	42
Milk solids per cow: ≥ 378kg	53	49	37
Protein Content: ≥3.4%	54	37	35
Fat Content: ≥ 3.95%	36	33	27
Somatic Cell Count: ≤ 200,000 cells/ml	52	55	23
Concentrate feed per cow: ≤750kg per cow	57	41	39

Source: Teagasc National Farm Survey

Participation in discussion groups through the DEP (in East Cork) had a positive impact on technology adoption in the areas of grassland management and financial management:

- Grassland Management: in 2011, 43% of new group members measured grass on a weekly basis compared to 31% for the same group in 2010. In 2012, discussion group members turned out cows to grass 11 days earlier than non-members; and
- Financial management: in 2011, 51% of group members completed a profit monitor compared to 29% in 2010.

Farmers perceived that they gained considerable knowledge and benefits from discussion group involvement in the immediate years after joining. However, the ongoing benefits may not be as obvious and readily achieved and it is important that farmers stay involved in discussion groups for the longer term and continue to work within the group.

An analysis of 2008 Teagasc National Farm Survey data revealed that established (pre-DEP) group members perform better financially than non-group members (Bogue et al., (2013)). Controlling for farm characteristics, such as soil type, location, farm size farmer's age and to test for potential selection bias, this analysis found that the average established (pre-DEP) group member benefited in the order €247 per hectare in gross margin terms in 2008.

Table 5 reports the economic performance of established (pre-DEP) group members, new (DEP) members and non-members using the 2011 Teagasc National Farm Survey data. It shows that established members performed better financially than DEP groups and non-group members on a net margin per litre (2 to 3 cent per litre) and per hectare basis.

Table 5. Economic Performance: Established, New and Non-Members

Economic Indicator	Established Members	New (DEP) Members	Non-Members
Net Margin (cent per litre)	14.5	12.1	11.6
Costs per hectare (€)	2,260	2,327	2,150
Net Margin per hectare (€)	1,516	1,234	1,050

Source: Teagasc National Farm Survey

Controlling for farm and farmer characteristics, a statistical analysis showed that economic returns to membership were present, with established group members

earning significantly higher gross margins per hectare than non-members, in the order of €240 in 2011.

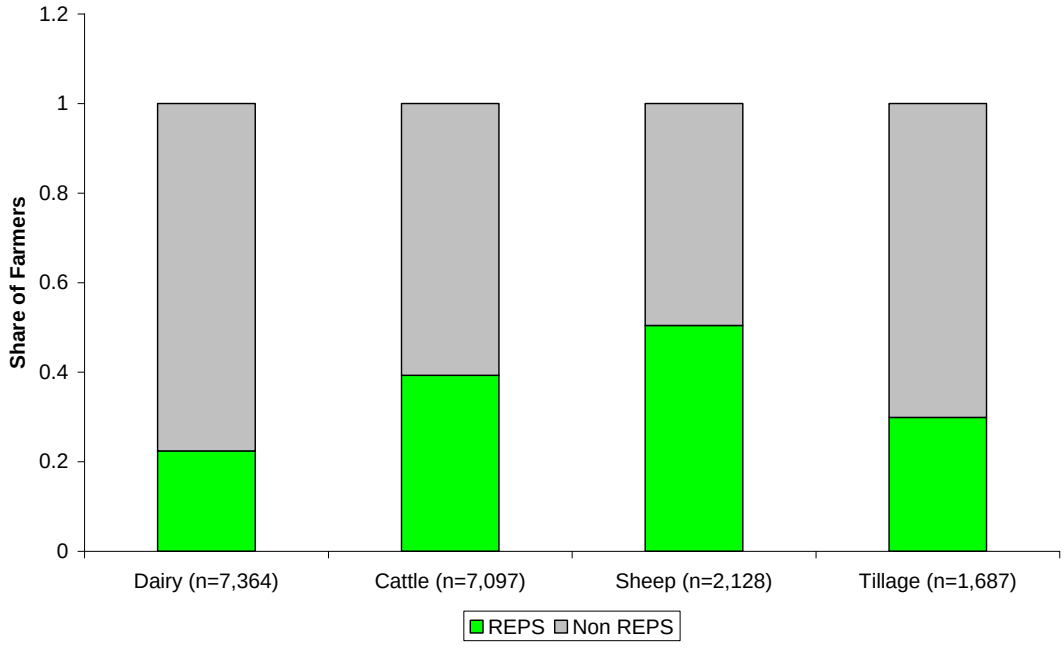
Environmental Considerations

Farmers, together with foresters are the main managers of the land resource in Ireland. Delivery of environmental public goods therefore depends significantly upon their behaviour and management. The main environmental public goods affected by Agriculture include:

- Water Quality
- Greenhouse gas Emissions
- Biodiversity

There have been significant policy measures introduced over time to promote environmental sustainability. For example over €3bn has been spent on the Rural Environmental Protection Scheme (REPS) and the Agri-Environment Options Scheme (AEOS) since 1994. In 2009 alone, 60,000 or 45% of all farmers participated in agri-environment schemes. However, participants tended to concentrated in the drystock sectors farming less profitable farms than the average.

Figure 16. Participation in REPS by Farming System



Source: Finn and O'hUallachain (2011)

Finn and O'hUallachain, (2011) reported that there was an improved attitude to environmental management amongst farmers who participated in REPS and that a majority of farmers undertook biodiversity measures. They commented that the voluntary nature of the scheme and the measures undertaken was problematical, as was the lack of spatial targeting and the lack of coordinated actions. They found that the lack of a baseline and limited evaluation made it difficult to undertake an appropriate cost-benefit analysis. However, since the introduction of Agri-

environment schemes, fertiliser over-usage has reduced and greenhouse gas emissions have reduced.

These schemes have arguably improved the compliance with environmental regulations such as the Nitrates directive which sets limits on the intensity to which animal based farming can be carried out due to its potential impact on water quality. This limit is 170 kg of organic nitrogen per hectare, but subject to additional conditions being met, a derogation can be sought which allows a limit of 250 kg per hectare. There are also chemical nitrogen limits which exist and depend upon the stocking rate, but which are largely achieved now due to substantial decreases in fertiliser use.

Table 6 reports the percentage of farms requiring derogation. We note that in 2008, over 50% of the top quintile of dairy farms had organic nitrogen per hectare of greater than 170 kg. We note a decline of 27% of those in the top quintile in the derogation range. The next quintile has half the proportion of the top and has remained relatively constant, while the lower quintiles have very low proportions.

Table 6. Percentage of Farms Requiring Derogation in relation Organic Nitrogen per Hectare (org N/ha > 170 kg)

	Gross Margin per Hectare Quintile				
	1	2	3	4	5
% with Derogation					
1997	0.005	0.113	0.155	0.251	0.721
2008	0.067	0.149	0.085	0.246	0.527

Source: Teagasc National Farm Survey

Off-Farm Employment and Farm Sustainability

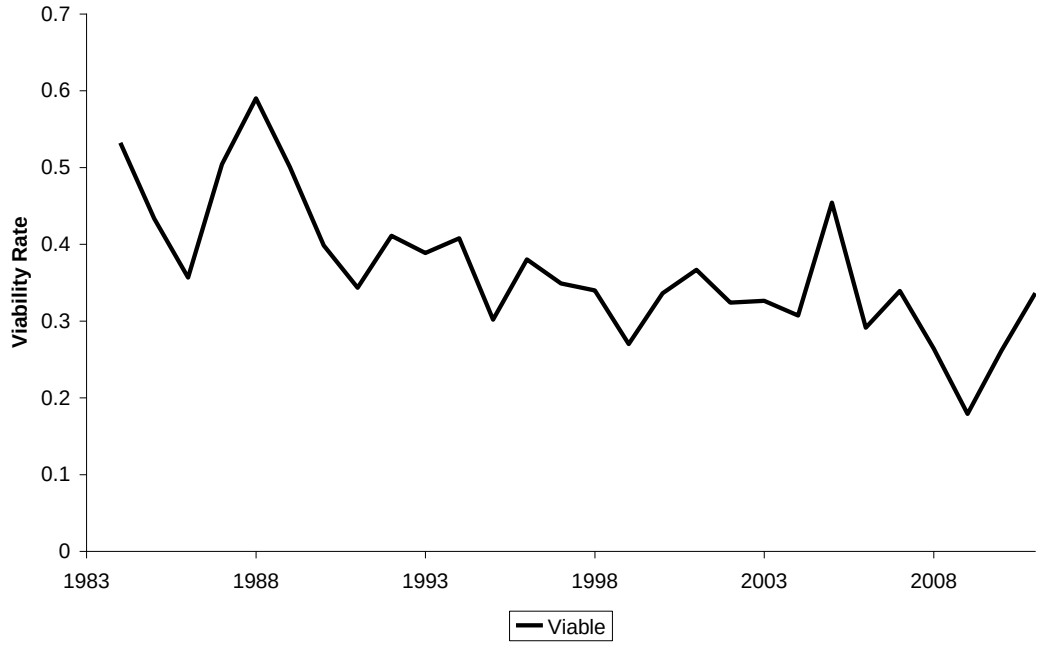
Another key challenge is income generation. Ensuring a fair standard of living for the agricultural community was one of the key objectives of the Treaty of Rome. A measure used by Teagasc to assess this is Farm Viability. A farm is deemed to be viable if it generates a farm income sufficient to pay family labour at the Minimum Agricultural Wage and to provide a 5% return on non-land investments. Figure 17 reports the trend in farm viability over time. We observe a gradual downward trend in farm viability, resulting from the cost-price squeeze. Innovation is not happening fast enough, nor are subsidy payments sufficient to offset the impact of market input and output prices changes. The recent recovery in agricultural markets since 2009 has been accompanied by an increase in the viability rate from 18% to 34%. However, this still remains a low percentage. This rate rises to 40% amongst farmers under 66 years of age, but is less than 20% for farmers aged 66 or over. Figure 18 reports a clear spatial pattern of viability, with lower viability rates in the North and West, emphasising the less favourable agronomic nature of some parts of the country.

Sources of non farming income are therefore very important for the sustainability of farm households. Improved economic conditions saw an increase in the employment rate for both farmers and their spouses over time (Figure 19). However the economic crisis has resulted in a collapse in the employment rate of farmers, losing all of the gains of the Celtic Tiger in just over 2 years. This is as a result of farmers working off-farm in riskier sectors such as construction. Given the white collar and public

sector nature of the jobs of farm spouses, they have not been as adversely affected as their spouses. This creates significant requirements for a public policy response to both re-skill farmers who require off-farm income sources and to undertake rural economic development programmes to increase the labour demand in rural areas.

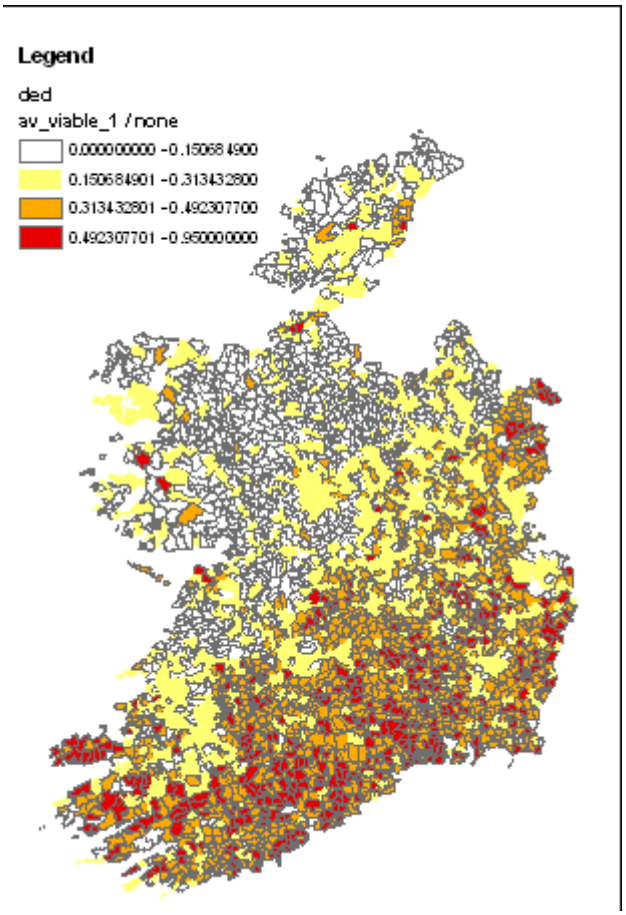
The result of this can be seen in figure 20, where the share of sustainable farms (that although with incomes below the viability threshold have off farm income) and vulnerable farms (with incomes below the viability threshold and without off farm income) have risen since the economic crash. While growth in the sector since 2010 has increased the proportion of viable farms, it has had little impact on the rate of vulnerable farms which require other sources of income for long term sustainability.

Figure 17. Farm Viability 1983-2011



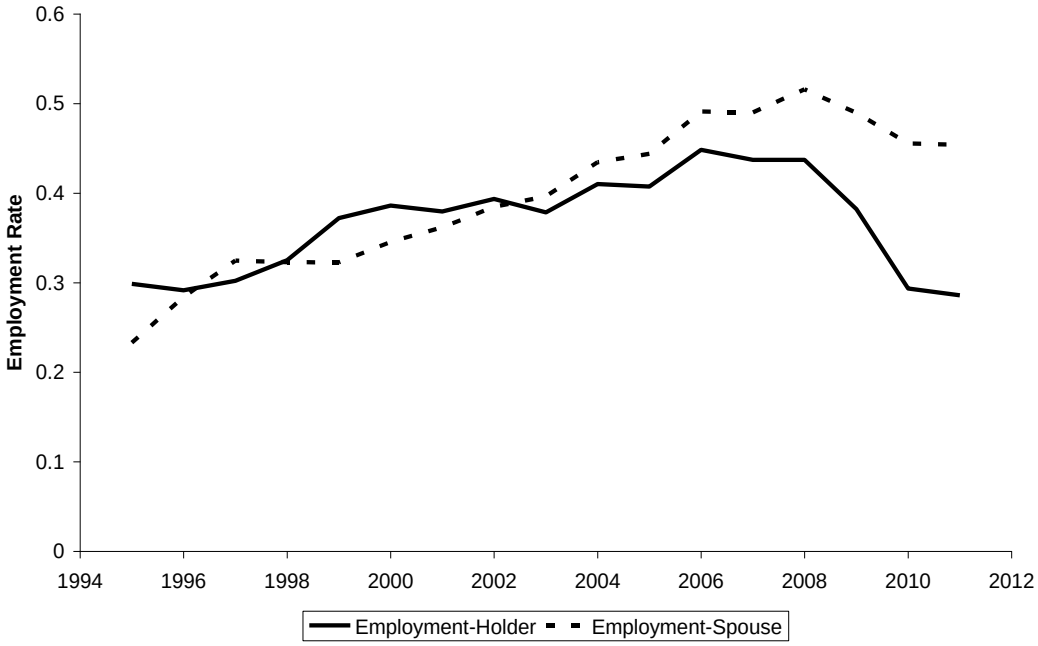
Source: Teagasc National Farm Survey

Figure 18. Spatial Pattern of Viability



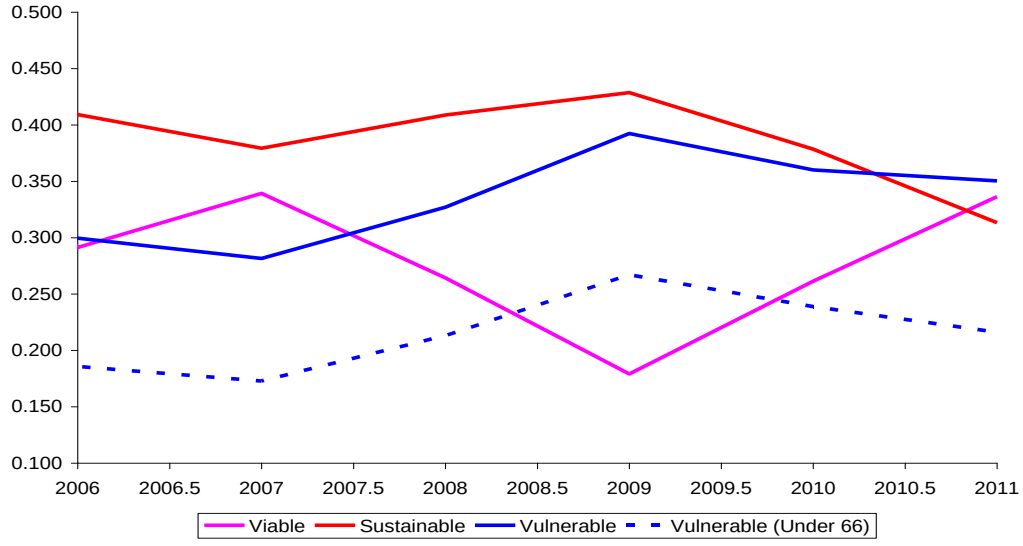
Source: Teagasc Simulation Model of the Irish Local Economy

Figure 19. Off Farm Employment (Farm Couples Under 65)



Source: Teagasc National Farm Survey

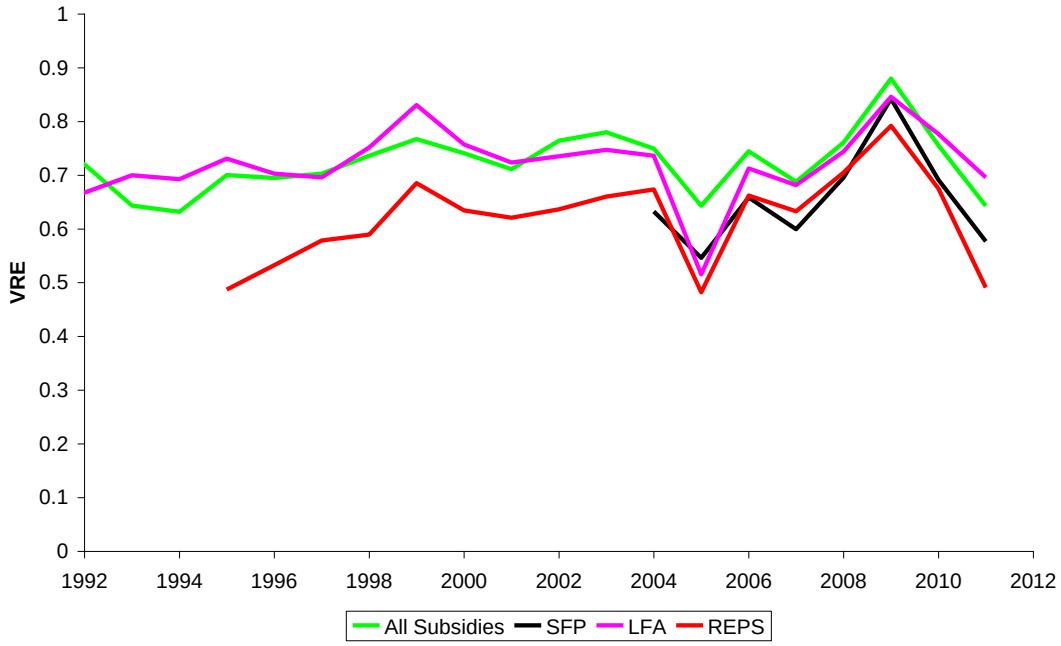
Figure 20. Farm Sustainability and Vulnerability 2006-2011



Source: Teagasc National Farm Survey

One of the main objectives of farm subsidies is maintaining and enhancing farm income, adding to the objective of farm viability. In Figure 21, we report a measure known as Vertical Efficiency which is the proportion of a scheme that is paid to farmers that would not be viable before the scheme was paid. It indicates the high degree of targeting of schemes at a rate of 60% or higher. Thus 60% or more of schemes are paid to farms that have incomes less than the viability threshold pre-transfer. The remainder of the payments go to farms that are viable without the transfer or brings them over the viability income threshold.

Figure 21. Targeting of Scheme Payments – Viability Reduction Efficiency



Source: Teagasc National Farm Survey
Note: Vertical Efficiency is the proportion of a scheme that would be going to a farmer that would not be viable before the scheme was paid.

The 2011 Pobal HP Deprivation Index is the latest in a serious of deprivation indices developed by Trutz Haase and Jonathan Pratschke and funded by Pobal. Based on the just recently released data from the 2011 Census of Population, the index reveals the dramatic decline in relative affluence, represented in the fall of the mean index score from 0 in 2006 to -7.0 in 2011. Overall, the waning tide has lowered all boats, but the cities have declined less than the rest of the country (RDP - 2011 Annual Report).

C. AXIS 1 – FACILITATING COMPETITIVENESS, MODERNISATION AND RESTRUCTURING

Agriculture and food production in Europe and Ireland will face significant market challenges over the period 2013 to 2020. These challenges arise, inter alia, from the agreed abolition of the EU milk quota system and the possible impact of future bilateral and multilateral trade agreements on EU agricultural markets. Policies that seek to modernise European agricultural and food industry structures will be of great importance to the competitiveness of EU agriculture and the future vibrancy of rural communities within the EU.

The EU milk quota will be removed in 2015. The period leading up to 2015 will be a critical time for the EU dairy sector. If milk prices decline following quota removal, a number of farmers are likely to exit production and those remaining will need to increase production to maintain viability. Future trade reform agreements and changes in EU agricultural policy could heighten the competitive pressures on all sectors of Irish agriculture. Significant farm restructuring is likely to occur. In line with the Pillar II, Axis 1 objectives of improving farm competitiveness and productivity, schemes could be implemented to facilitate farm level restructuring in all areas of Irish agriculture.

Support for Farm Restructuring and Rationalisation

Schemes that will facilitate the transfer of land, support farm partnerships and promote investment in farm infrastructure. The transfer of land from exiting farmers to those wishing to expand will be a crucial element of the restructuring process. Farm fragmentation continues to be a problem in many EU countries. Financial supports for leasing, land transfer and farm partnership arrangements may promote restructuring. Financial incentives to encourage farm partnerships and to support shared investment in infrastructure between farmers may also be useful in facilitating restructuring.

Supporting Human Capital

Schemes to promote new entrants to farming will be important. Financial incentives such as the young farmer installation aid are recommended. Investment in education, training and extension for farmers is also required. Training for new entrants and for professional farm managers will be important as well as continued extension and advisory services for farmers.

Vocational training for future farm managers and farm staff: With the size of farms, particularly of dairy likely to increase following quota abolition in 2015, there will be a trend from family farms towards farms employing, and managing, labour. There will be a requirement to provide appropriate training for both managers and staff.

Animal Welfare Payment

Animal welfare continues to be a key concern of European consumers. In the interests of promoting better animal health and welfare, financial support for animal vaccinations and the adoption of other animal health promoting technologies are recommended.

1. Facilitating Restructuring through Succession and Inheritance

Summary of Prior Policy Schemes & their Outcomes

The **Early Retirement from Farming Scheme** was co-funded by the European Union (EU) to encourage farmers aged between 55 and 66 to retire from farming and transfer/lease their land to a younger farmer. The Early Farm Retirement Scheme was suspended for new applicants on 30 October 2009.About 13000 farmers took up the ERS Scheme, with 642 of these taking up the last Scheme.

The **Installation Aid Scheme** was launched in 2007 as part of Ireland's Rural Development Programme co-funded under the National Development Plan and the European Agricultural Fund for Rural Development for the 7 years (2007-2013). The scheme objective was to encourage young people to establish themselves in farming. The IAS was suspended for new applications on 14th October 2008

Farm consolidation relief from stamp duty. This scheme provided a relief for stamp duty where a farmer sold and purchased qualifying land in order to consolidate his/her farm. The sale and purchase transactions for qualifying land must have taken place within 18 months of each other and must have resulted in a reduction in the number of farm land parcels or a reduction in the distance between the parcels. Stamp duty was only paid by the farmer receiving the higher value land and only on the excess value over the land disposed of. The uptake of this scheme was poor.

Summary of Outcomes of Policy

Given the worsening demographic profile and the challenges in relation to access to land, our key recommendation is to reintroduce programmes that would facilitate farm restructuring. Options include:

Early Retirement from Farming Scheme and Installation Aid Scheme

There have been numerous Early Retirement Schemes (ERS) across the EU, all with different levels of success. In general most uptake occurs amongst large fulltime farmers. Where farming is part-time, transfers take place mostly on death. The reintroduction of a new ERS and Installation Aid scheme should be considered to help restructure the sector. Combining a number of factors may make new schemes more successful.

- Fulltime and viable farms in Ireland should be targeted
- Schemes were closed to applications in 2008, early on in the decoupled payments era (2005 +). The current system of decoupled payments combined with an ERS and Installation aid may encourage more transfers / leases of land to a more active generation
- The current economic circumstances may alter the incentives as there are fewer off farm alternatives for young potential farmers.

Farmland Restructuring Scheme

- Reduce fragmentation of Irish farms

- Put potential applicants into a database to generate active participation (match-making)
- Reduced distance between main holding and owner residence
- Allow "restructuring" of land to facilitate change of enterprises
- Help alleviate the costs of restructuring (Capital taxes and legal fees)
- This scheme should be developed with the current capital tax laws in mind.

New Phased Transfer & Partnership Scheme

Combining Early Retirement Scheme and Installation Aid Schemes for young trained farmers. This would involve the phased handing over of control of the farm to a younger farmer and includes a financial incentive and partnership profit share model. This has the benefit of not requiring a sudden exit from farming for the older farmer and allows phased take-over of responsibility for the younger farmer. The scheme need not be prescriptive in terms of the percentage shares or the rate of transfer as this will vary between farmers. The incentive payment will help to address two inhibitors to land mobility -

1. Income security for the 'retiring' farmer and

2. Securing an extra income for the farm to help bridge the gap when more than one income is required from the farm.

An example of how this might work is included in the table below

	Young Farmer		Older Farmer	
	Incentive Payment %	Profit Share %	Incentive Payment %	Profit Share %
Year 1	100	20	0	80
Year 2	80	30	20	70
Year 3	60	40	40	60
Year 4	40	50	60	50
Year 5	20	60	80	40
Year 6	20	70	80	30
Year 7	20	80	80	20

2. Facilitating Restructuring via Collaborative Farming

It has been recognised for some time that there are deficiencies in Irish farm structures in terms of age profile, farm size and skill set. For instance, the age profile of Irish farmers has deteriorated in the ten years to 2010 from an average of 51 years of age in 2000 to 55 in 2010. In the same time period, the percentage of farmers under 35 decreased from 13% to 6.2% of all farmers. Average farm size in 2010 was 32.7 hectares and a mere 0.2% of land changed hands through purchase/sale. In view of the structural deficits that still exist and the ongoing threats to farm viability, there is a need to implement appropriate policy measures to take advantage of the many growth opportunities to 2020. Availing of these opportunities will require some farms to diversify. However, in all cases an increase in productivity will be crucial.

Furthermore, the increase in the sole operated ("one-man") farm, without the input of other family members, poses threats to the sustainability of rural areas on a social level. Farmers working in partnerships with their spouse or offspring on the family farm, or coming together with another farmer to work the two farms in common structures such as partnerships or in other collaborative arrangements e.g. share farming or contract rearing of dairy replacements can help to overcome some of these deficiencies.

As one way of addressing this, the number of registered partnerships has steadily been increasing. The current number stands at almost 650. This represents over 7% of milk quota holders in Ireland. However, this is small compared to the position in France where over 50% of all milk is produced in partnerships or Norway where 25% of farmers work in partnership. In recognition of this potential it is now Government policy to support and encourage the formation of collaborative farming arrangements such as partnerships. Furthermore it is stated Government policy that all obstacles to the formation of partnerships should be removed and that non-dairy partnerships should be afforded the same benefits as Milk Production Partnerships.

Cooperation in Primary Production at farm level such as farm partnerships, share farming, contract rearing etc. were identified[5] as areas that could qualify for support under Article 36 of *Proposal for a Regulation of the European Parliament and the Council on support for Rural Development by the European Agricultural Fund for Rural Development (EAFRD).*

The current and potential uptake of primary horizontal types of cooperation between farmers as identified[1] are set out in Table 7 below.

Table 7. Cooperation Types: status & potential uptake

Cooperation Type	Current uptake (actual & approximate)	Potential uptake 2020 speculative	Prospective Status
Registered Farm Partnerships	645 MPPs 3.8% of applications under the 2010 Single Farm Payment Scheme submitted by joint applicants	To reach international rates of 20-30% Target 15 % 14,890	Formalised farm partnership adhering to specimen agreement*
Share Farming	200 (approx)	500 (of a total of 6200 approx tillage farmers)	Formalised share farming agreement adhering to specimen agreement*
Contract Rearing	25 (approx)	1,500 (of a total of approx 15,000 dairy farmers)	Formalised contract rearing agreement adhering to specimen agreement*

In line with recommendations in "*The potential of an Enhanced Cooperation Measure in the EAFRD (2014-2020): the case for Ireland"* Teagasc proposes that supports be given to the formation and promotion of registered partnerships, share farming and contract rearing of replacement dairy heifers as follows:

[5] The potential of an Enhanced Cooperation Measure in the EAFRD (2014-2020): the case for Ireland.

A once off grant of €4,000 to cover the initial costs of setting up registered partnerships. There can be substantial costs associated with setting up a well planned business partnership. These include legal fees, accounting fees, the drawing up of a business plan and partnership registration costs. Attendance at a partnership training course prior to set up should be a condition for receiving grant aid.

Animation and facilitation of farmers to become involved in cooperation activities:

Agricultural extension agencies such as Teagasc, which recruit and train facilitators who could coordinate animation and networking extension supports to facilitate the establishment of partnerships, share farming and contract rearing of replacements. Teagasc advisory services and private consultants should be supported to undertake programmes to comprehensively facilitate farmers' establishment of partnerships, share farming and contract rearing of replacements using, for example, an incubation group model (Macken-Walsh and Roche, 2012). Grant assistance to cover the cost of employing professional staff to provide these programmes in Teagasc would be invaluable. Also a small grant of €600 could be paid to participants as an extra incentive to attend a full incubation/discussion group programme of events.

To assist with the promotion of farmer to farmer learning the establishment of open farms where various collaborative arrangements are practiced should be encouraged. An annual payment or grant to the owners of such farms would help to defray costs and compensate for time input and therefore act as an incentive to such a development. The availability and tracking of information from these farms could form an observatory which would enhance the future growth of horizontal cooperative farming arrangements.

Running costs of registered partnerships includes the payment of an annual registration fee (currently paid by farmers to Teagasc), which may extend to other registered partnership in the future. This fee supports the operation of existing agreements and maintains the farm partnership register. The current cost is €180 for family partnerships and €300 for non-family partnerships.

3. Farm Planning

Forward planning is an essential aspect of building a viable farm business. Assessing the impact of proposals over a three/five year period should give clarity to the business owner as to what resources (business assets, stock, funding etc) are available and required over the period.

Recommended Support Measure

A planning component would be a beneficial aspect of any of the farm level funding RDP measures that target business restructuring, modernisation, scheme establishment/ participation. The proposed planning measure should incentivise the applicants to prepare a forward plan that sets out the direction they are taking the farm over the next three/ five years. It should clearly indicate the changes in key farm **physical** metrics that result through availing of the main RDP measure applied for.

The plan should be based on the setting out of main physical targets for the farm over a three/ five year period starting with the current year position.

The basic physical plan could include the following:

	Current year	Year 1	Year 2
Farm system description (e.g. spring milk / suckler to beef)			
Land Owned (ha)	Ha	ha	ha
(including ha purchased)	Ha	ha	ha
Leased / Rented Land (ha)	Ha	ha	ha
Breeding Animal Numbers			
Breeding Replacement Numbers			
Other stock numbers			
Number of stock sold			
Number of stock purchased			
Annual Investment in livestock €			
Annual Infrastructure Investment €			
Weekly labour hours by owner	Hrs	hrs	hrs
Additional employed labour hours {include permanent/ casual labour and contract labour]	Hrs	hrs	hrs

A plan for physical investments should also be prepared giving some detail to the overall investments to be completed over the period – whether grant aided or not – in each year. This will help to identify the priority investments that are needed.

Plans prepared under this measure could help ensure that applicants will put together the plans to reflect the applicant's actual intentions for the business rather than structuring the plan to ensure success in an application process. It would be anticipated that incorporating business planning into the application process will focus the applicant to provide justification for receiving the financial help from the relevant scheme and also will help the scheme to deliver improved competitiveness for the industry.

For applicants that are successful in drawing down funding under the specified measure, an additional monetary credit could be given to those applicants that have completed this physical plan to allow them to retain professional input to upgrade this plan to a full financial plan for the period complete with cash flow, balance sheet and sensitivity analysis. This credit would help to offset the cost of engaging an adviser in the preparation of this financial plan. The final completed financial plan could be used to assist the applicant in assessing the yearly financial impact of the future plans for the business. It would also assist in drawing down additional credit funding to further invest in the business.

4. Farm Development Schemes

The Teagasc National Farm Survey results for average gross and net new investment per farm and the difference between them from 2005 to 2011 are outlined in tables 8 and 9. Table 8 shows the figures for all farms while table 9 shows figures for dairying. Net new investment is equal to gross new investment in machinery, buildings, quotas, and land improvements (including forestry) minus sales and capital grants received during the year. As can be seen from the tables the increase in the level of investment coincides with the level of government grants for farm investment. It is also evident

from the tables that the difference between the gross and net investment converges as the level of as the level of government grants for farm investment declines. This is an indication of the impact of the availability of grant aid on the willingness and confidence of farmers, particularly dairy farmers, to make investments.

Table 8. Average gross and net new investment per farm and the difference between them (€) between 2005 to 2011

	2005	2006	2007	2008	2009	2010	2011
Gross investment	7192	6965	12250	19479	6473	5782	6601
Net investment	5939	5989	9937	15506	1502	4618	5702
Difference	1253	976	2313	3973	4971	1164	89

Table 9. Average gross and net new investment per dairy farm and the difference between them (€) between 2005 to 2011

	2005	2006	2007	2008	2009	2010	2011
Gross investment	13250	13425	27532	48860	13623	13627	19258
Net investment	11933	11728	23534	40695	974	11516	17091
Difference	1317	1697	3998	8171	12649	2111	2162

There are other reasons why grant aid is beneficial. It brings farmers in contact with professionals for the planning process, which would ensure that more thought-out plans are developed, based on needs and appropriately phased to suit the farm business.

There is also evidence that planning permission is not being sought for the vast majority of developments that require it. This is partly due to the fear that sizeable payments will have to be made for development contributions, but mainly because of the absence of grants.

Grant aid would help ensure tax compliance of the farmer and any farm building contractor involved and their compliance with health and safety laws.

Modest rates of grant would ensure that grant aid would be availed of by more farmers and the cost of developments would not be influenced by the rate of grant.

A guarantee that the grants would be available throughout the period from 2014 to 2020 would give farmers the confidence to invest and would allow for a planned and phased approach to developing/expanding a farm business. To avoid tying up future funds that may not be required we propose that an applicant who has been successful in gaining grant aid in the start of the programme will become a priority applicant for future funding of other investments if the proposal was included in the original plan. This may help to reduce overinvestment in the initial stages in an effort to secure grant aid, thus allowing a more planned investment and less risky debt profile at farm level while dampening a surge in demand for farm building development at national level.

Farms and farmers aspirations should be assessed by planners to determine the most appropriate developments based on need, potential and financial viability.

Existing and proposed schemes

The view of DAFM and the EU seems to be that grant schemes where everyone who applies can get a grant is a thing of the past and that targeted schemes (TAMS) will only be considered from now on. The present Dairy Equipment Scheme (DES) is working well. The marking system, tranche release system and other conditions can lead to delays and frustration of farmers waiting to get approval to go ahead. It can also make the scheduling of building a new milking parlour or installation of milking and cooling equipment difficult. The aid is targeted at new entrants, young trained farmers and smaller scale producers. This is good for family farms and for new entrants to dairying. The DES should be retained and made user friendly, if possible. The investment aid could be increased to include some small amount of aid for the construction of the dairy and milking parlour.

A new sustainable farm development scheme would be very worthwhile. There are a lot of farms who were not in a position to avail of the FWM and FIS schemes or have still more investment to do to make their farm business sustainable in the long term. Attracting successors on farms will depend on having good, safe and labour efficient facilities available. A condition of receiving aid could be that the farm would be cross compliant at the payment inspection. Expanding farmers have no choice but to invest in storage for animal manures.

Good animal health and welfare and safe food will result from sustainable farm development. Supporting animal health and welfare and safe food go hand in hand with the remit of the DAFM and the goals of Animal Health Ireland. The benefits will be better disease control, reduced losses and lower veterinary bills. Achieving milk quality standards will be easier where facilities are adequate and modern.

Items to consider for grant aid under a new scheme

Cross compliance measures: farm waste storage or storage structures in general, pollution control, soiled water tanks, silage pits, gutters and rainwater pipes, farmyard drainage.

Farm infrastructure: paddock fencing, farm roadways and water supply system, small scale land drainage to improve marginal paddocks, lower outfalls, tap springs i.e. deep cut-off drains and install interception drains around farmyards.

Animal housing: aid for cubicle houses for cows and weanlings, slatted cattle housing and calf housing would be beneficial especially for new entrants and those expanding. With larger herds of dairy cows and more emphasis on compact calving investment in calving facilities will be essential. These facilities are below par even on farms where major expansion will not be envisaged. The possibility that diseases like Johnes will be a problem in future will make the design and availability of calving facilities all the more important.

Animal health and welfare and labour efficiency: calving facilities, calving gates, cattle handling facilities, cattle crush, and crush head gates, drafting systems,

concrete for first 100 metres of farm roadway, ventilation improvements in existing housing, cattle underpasses, meal feeding systems, augers and feed bins for milking parlours.

Health and Safety items:

- Safety rails on silo walls
- Safety fencing/solid cover for external slurry and effluent stores
- Safety covers on external agitation points or manholes
- Removal of existing internal agitation point and replacement by gang slat
- Replacement of damaged slats (single/twin/gang) by gang slats
- Replacement of a hinged door/sheeted gate with a sliding/roller door on animal housing
- Energy efficiency: Energy saving solutions, e.g. solar panels – perhaps in co-operation with SEI, grant for 3 phase electricity
- Rainwater Harvesting Scheme (RHS): retain RHS, even though the uptake has been low there is likely to be increasing interest in it in future.

Machinery: Provide some incentive to increase the use of slurry spreading methods that improve N recovery, without driving up the cost of purchasing these machines. Farmers who; get their adviser to prepare a nutrient management plan, carry out frequent soil sampling and the use environmentally friendly slurry spreading machines could attract a payment to defray some of the extra costs.

Support for Pig producers:

The retention of TAMS is fully supported. Certain additional areas could also be covered including:

1. Grower/Finisher accommodation: either new or converted buildings. Some smaller breeding units will cease production due to finance and/or animal welfare regulations. It would be a good option for them to convert their breeding accommodation into finisher accommodation. There is a demand for this in many areas. Also, some other units could expand their existing breeding units and finish the pigs off site on these converted farms or new finisher sites. Therefore, provision of grant aid for new finisher accommodation would also be worthwhile. This will help achieve the expansion targets required in Food Harvest 2020.

2. Repairs/Maintenance: due to poor profitability over the past numbers of years very little has been spent on repairs and maintenance to the detriment of many units. Due to animal welfare regulations sow housing investments have also been prioritised over repairs and maintenance. To remain in production these units now need to reinvest in items such as slats, feed systems, water supply systems, ventilation, insulation, etc. TAMS would be of benefit here.

3. Items such as water meters, water systems, rainwater harvesting systems, etc., should also be supported. This will help reduce volumes of manure produced, with positive impacts for producers in terms of costs and the environment. This is an area which is continually stressed to producers.

4. Pig producer discussion groups.

5. Management & Handling Systems: e.g. Feed Delivery Systems, water medication systems (fixed & portable), Ventilation Systems. Also energy Efficient Systems: e.g. Ventilation, Insulation, heating.

Support for the Equine industry:

The equine sector is a significant contributor to the Irish economy. The Irish thoroughbred industry is worth in excess of €1bn to the economy and the Irish sport horse industry a further €708million per annum. There are opportunities for development in both industries. Financial support for development of facilities would stimulate opportunities for profitability in both sectors. There has been no widely accessible support for these industries for a period of five years. Although LEADER are providing support under Axes 3 and 4 it significantly excludes thoroughbreds, facilities for the breeding and training of horses as well as artificial insemination facilities. Many individuals with hopes of expanding/ developing enterprises on farm are not meeting all of the criteria set out by LEADER.

Currently the usage of AI in the Irish sport horse sector remains extremely low at 16% and it is one area where advancement would be hugely beneficial to the industry. When compared against many of the European studbooks that have a usage in excess of 80 and 90% Ireland is at a significant disadvantage.

Any grant aid provision for facilities in future should have a requirement to attend a Business Planning course as a pre-requisite for eligibility. Previous schemes have not placed enough emphasis on this aspect.

Suggested facilities to be included for support:
Artificial Insemination Facilities and Equipment
Stabling and Manure / Soiled Water storage facilities
Arena – Indoor and Outdoor
Lunge Rings and Gallops
Fencing
Handling Stocks
Horse Walker
Horse Treadmill
Horse Swimming Pool
Cross Country Courses/ Training Facilities
Reclamation of land

Support for Sheep producers:

The retention of TAMS and a more rapid application/approval process would be of benefit to the sheep industry. Other areas for which grant aid is not available that should be considered are:

1. Fixed handling facilities for farms where the holding is predominantly in a single block. Good handling facilities facilitate more efficient use of labour but more significantly improve animal performance and welfare.

2. Electronic readers, load cells & associated software. The requirement to allocate all sheep born after 31st December 2009 with an electronic

identification will in the coming years result in the vast majority of the national breeding flock being identified electronically. The use of these electronic identification systems to capture management data is possible if flock owners invest in the appropriate electronic equipment and associated software. The establishment of Sheep Ireland allows for data captured on commercial farms to be evaluated under the national sheep programme and to aid the development of the sheep industry nationally.

3. Grant aid to replace timber slats in sheep houses with plastic slats. This measure coupled with grant aid for the erection of external agitation points in slated sheep houses would significantly reduce the labour requirement for emptying slatted tanks, increase operator / animal safety and animal welfare

4. Grant aid for additional waste storage facilities particularly farm yard manure generated from waste fodder, animal bedding and during the lambing period should also be considered. Climatic conditions are frequently not suitable to allow for field storage and the prevention of nutrient loss from field stored FYM. Appropriate storage facilities, safeguard the environment, maximise nutrient retention and allow for the stored animal waste to be land spread at the most appropriate time.

5. Risk Management

Climate change, increased price volatility and an E.U. policy shift away from trade distorting import tariffs and export subsidies mean that European producers will be more exposed to economic and environmental risk in the future. European proposals on support for rural development suggest that "a risk management measure should be set up to assist farmers in addressing the most common risks". It is important to note that risk arises (and affects farm incomes) through a number of different channels and that to be effective, risk management strategies must account for this. There is no "one size fits all" solution to the host of unforeseeable outcomes which can undermine agricultural income.

For this reason, European risk management strategies must respond to the entire spectrum of risk types to be affective. For example on-farm risk can be reduced using more reliable breed selection and superior drug/pesticide types; market risk exposure can be minimised and hedged against using financial derivatives; mutual funds, insurance and government intervention can be used to compensate for the impact of negative environmental outcomes when they *do* arise.

Additionally, the potential losses associated with any risk will determine the institutional level at which it should be handled (See Table 10). Small operational losses and reoccurring risks are a natural feature of any farming enterprise while larger risks like market based price volatility may require financial risk management products. Environmental risks of a catastrophic scale which are beyond the capacity of private markets and agricultural producers to deal with alone require greater state intervention to ensure market stability.

Table 10. A menu of possible farm risk management instruments and strategies

	Farm/household/community	Government	Market
Risk Reduction	Technological choice	Macroeconomic policies Disaster prevention (flood control…) Prevention of animal diseases	Technological choice
Risk Mitigation	Diversification in production Crop sharing	Tax system income smoothing Counter-cyclical programs Border and other measures in the case of contagious disease outbreak	Futures and options Insurance Vertical Integration Production/marketing Contracts Spread sales Diversified financial investment
Risk Coping	Borrowing from neighbours/family Intra-community charity	Disaster relief Social assistance All agricultural support programs	Selling financial assets Saving/borrowing from banks Off-farm income

Source: OECD Secretariat (2009) based on Holzman and and Jorgensen (2001).

Recommendations:

Rather than simply offering compensatory support for losses, the state can empower farmers and private markets to manage certain risks alone. This leads to more efficient production choices and is less demanding on the state budget.

Advisory and extension services can educate farmers about on-farm risks and how to reduce them through superior technology employment. Additionally, risk mitigation through production diversification and other such risk management strategies can be developed at the local/farm/household level and advisory services can contribute to such developments. CAP Pillar II rural development funding could be used effectively for this purpose.

Collective action such as mutual funds can allow farmers to pool risk, so that the collective input of all can be used to compensate the few for some particular localised loss. Governments can assist in this process by developing the legal and institutional frameworks for such services and advising farmers about their development. It may also be necessary to investigate whether or not there is sufficient numbers and geographical dispersion of farmers in Ireland to make a mutual fund a realistic possibility. There may be scope for the development of a mutual fund across borders with European partners/farmers, as this would offer a greater number of fund participants (therefore greater potential compensation) as well as a more geographically and industrially diversified mutual fund portfolio. Research into such possibilities could be an effective use of rural development funding.

One of the reasons income stabilisation tools other than government intervention have received increased focus of late is because WTO green box rules and the budgetary crisis of the 1980s have increased pressure to decrease E.U. reliance on measures such as import tariffs and export subsidies to stabilise the incomes of E.U. producers. One

of the consequences of having such comprehensive government stabilisation policies for so long has been a stifling of demand for private risk management solutions and therefore a dearth of supply ("crowding out"). Financial derivatives such as futures and options provide good hedging capabilities with respect to price volatility, but due to extreme reliance on state stabilisation policies, many farmers are unfamiliar with these tools. Training and education regarding the use of such tools is required to bridge this gap. It is also necessary that these markets are effectively regulated. Furthermore, by ensuring that it "stays out of the way" the state can allow an independently orchestrated private risk management market to evolve instead public risk management programmes.

Natural risk factors such as disease, flooding etc are a major source of agricultural risk and have classically been managed using insurance markets, e.g. crop insurance. One of the main barriers to the establishment of healthy insurance markets is market failure arising out of asymmetric information, moral hazard and adverse selection. Additionally, natural events that negatively affect agricultural incomes can be catastrophic in scale, so that the threat of overly costly compensation can disincentivise insurance companies from taking on such liability. While governments often opt for subsidisation of agricultural insurance premiums to overcome these problems, there is sufficient evidence to suggest that this is not the best course of action. Even in the face of a "catastrophic" natural event in a region, yield liabilities, when compared with global reinsurance markets, are relatively small. In addition, crop insurance programmes have failed to overcome problems of moral hazard and adverse selection. In other cases crop insurance regimes can be associated with fraud, waste and abuse and government payments to the insurance companies can provide them with excessive rents (GOA, 2007). Under government subsidisation schemes, agricultural insurance premiums can rise significantly further increasing the cost on limited public budgets. Some countries possess long-term databases on risk, coverage, indemnities, etc. that help in reducing information asymmetries (OECD, (2009)). Rather than costly subsidisation schemes, the development of such an historical database for Irish farmers may be a far more effective use of rural development funds.

In the medium term, "contract purchase schemes" are likely to be the main mechanism for the alleviation of price risk. Further research and follow up knowledge transfer is required to advise on their use. To facilitate their use, it would be useful to produce template contracts and to monitor their performance.

6. Capacity Building and the Improvement in the Competiveness and Sustainability of Irish farmers

As identified above, public and private returns to scientific developments and investments are only achieved if they are adopted and used by farmers. Recent innovations in knowledge transfer such as discussion groups and public programmes to increase their use have had a significant impact on technology use and adoption.

However adoption depends not only on the incentives, (both market and subsidy) to adopt the technology, but also the capacity to firstly become aware of the existence of the technology. The next step is to evaluate its potential use on the farm and then to assess and make the necessary (and possibly significant) changes to utilise the

technology. Capacity building is best done by combining demand in terms of incentives to adopt with supply in terms of support for capacity building.

In designing incentive schemes to facilitate increased competitiveness, it is important therefore to combine them with capacity building to maximise the effect. The EU Farm Advisory System is a useful direction in which to proceed.
In June 2010, the European Council adopted a new strategy for growth and jobs, the Europe 2020 Strategy, in which innovation is central. The European Council agreed that the CAP must play its part in delivering that strategy. The EU Commission, in its proposals for Rural Development policy post 2013 identifies innovation as a 'cross-cutting objective' (Art.5). In October 2010, the Commission published a Communication on the "Europe 2020 Flagship Initiative: Innovation Union"; the initiative envisaged setting up European Innovation Partnerships, one of which would deal with sustainable and productive agriculture.

The first of the proposed European Union priorities for rural development (art. 5 (1)), as set out in the proposals is:

> *"fostering knowledge transfer and innovation in agriculture, forestry and rural areas"*

Networking is critical both for efficient knowledge transfer and for effective innovation. The establishment of networks underpins current best practice thinking in relation to the processes of knowledge transfer and innovation (see Klerkx et al. 2009; Klerkx and Leeuwis 2008). Such best practice implementation is evident in Ireland. Hennessy and Heanue (2012) identify positive returns to Irish farmers in discussion groups in terms of increased profitability and higher rates of technology adoption because of the accelerated social learning that occurs through these networks. The positive impact of such small-scale networks or clusters is confirmed internationally (Butcher, 1998; Millar, 2010).

Broader networks such as the Dairy Efficiency Programme and the newer Beef Technology Adoption Programme, which are built around the discussion group methodology are also very successful in transferring knowledge, technology and best practice to farmers (see contributions to Heanue et al., 2012). In addition, multi stakeholder networks such as the Teagasc/Irish Farmers Journal BETTER Farm Programme and the Animal Health Ireland's Cellcheck project are successfully addressing beef efficiency and milk quality issues respectively through a networking approach (see contributions to Heanue et al., 2012).

For the forthcoming Rural Development Programme, the support of networking arrangements should be central to knowledge transfer and innovation actions. There are 2 significant proposals which would impact on the effective use of Pillar 2 supports: (1) Support for an expanded Farm Advisory System (FAS); and
(2) Support for European Innovation Partnerships (Agricultural Productivity and Sustainability).

Support for an expanded Farm Advisory System (FAS)

Under Article 13 of Council Regulation (EC) No. 1782/2004 each Member State is required to establish an approved Farm Advisory System (FAS) to advise farmers on land and farm management. The advice shall cover at least the Statutory Management Requirements (SMRs) and the Good Agricultural and Environmental Conditions (GAEC) referred to in Chapter 1 of the Regulation (Cross-compliance). The Regulation provides that farmers may participate in the farm advisory system on a voluntary basis and that priority shall be given to farmers who receive more than €15,000 in direct payments per year.

It is recognised that while the FAS has delivered in relation to environmental and animal welfare issues, it was really only dealing with a small part of the whole knowledge transfer system and it is recommended that the FAS model be expanded to support competitiveness and broader sustainability issues in addition to its cross compliance remit.

What?

- Promote and achieve improved use of resources, (Land, Labour and Capital)

- Promote the use of new research based technologies and systems, the adoption of new products, processes and farm systems.

How?

- Promote and achieve improved use of resources, (Land, Labour and Capital)
- Promote the use of new research based technologies and systems, the adoption of new products, processes and farm systems.
- FAS can be delivered by public or private advisers
- All farmers should have access to FAS
- FAS should be separate from control/ inspection systems
- Advice must be specific
- Advisers need to be suitably trained and qualified
- FAS should provide business supports to small farmers
- Farmers should pay a proportion of the cost of FAS

To date in the current CAP the FAS in Ireland is delivered by Teagasc and private consultants with training support from DAFM. The decision was made not to seek funding for FAS in Ireland even though the funding could have been availed of.

The value of work done by Teagasc and Private Consultants in the delivery and commitment to provide a FAS is recognised, in regard to the success of Irish farmers in claiming their entitlements in the form of direct payments.

The opportunity for engagement was greatly helped by the REPS programme and the requirements of that scheme. Looking to a future with objectives focused on productivity and sustainability as well as diversification and rural development, there is a need for a proactive, well co-ordinated advisory support.

Teagasc, with its mandate to provide and procure education and advisory services, is ideally placed to take national responsibility for the co-ordination and delivery of the FAS. Teagasc should be responsible for the development of programmes, their delivery internally or through competitive external sub-contracting. Programmes being formulated through stakeholder consultative processes in line with national and EU objectives could be delivered in a seamless manner throughout the country and evaluated in throughout their delivery and post delivery phases.

Support for European Innovation Partnerships (Agriculture Productivity and Sustainability)

The EIP on AP&S is seen as key to bringing research closer to practice via knowledge exchange and networking. This will promote innovative solutions to key challenges around agricultural productivity and sustainability. The EIP will be primarily implemented through actions via two EU policies: within CAP, RD policies and within EU Research and Innovation Policy, Horizon 2020. Both policies will provide opportunities for interested actors who can engage in actions on developing, testing and applying innovative approaches. Such actors will come together in networks called Operational Groups.

Within the Common Agricultural Policy post 2013 proposals, it is envisaged that future Rural Development Policy should provide co-funding for innovative actions of Operational Groups. As outlined in COM (2011) 627 final, the relevant key measures and the types of activities they will support include:

1. *Cooperation (Art 36)*
   Support under this measure shall promote forms of co-operation involving at least two entities and in particular:
   i) Co-operation approaches among different actors in the Union agriculture and food chain, forestry sector and among other actors that contribute to achieving the objectives and priorities of rural development policy, including inter-branch organisations;
   ii) The creation of clusters and networks;
   iii) The establishment and operation of operational groups of the EIP for agricultural productivity and sustainability as referred to in Article 62.

Support should be provided to networks in the form of Operational Groups under Art 36. Funding of up to 80% will be through this measure. Such networks could range in scale from discussion groups to broader multi stakeholder networks. Other proposed measures (Articles 15, 16, 18, 20) could be used to support aspects of the piloting, development, testing and application of innovations that the Operational Groups are engaged with.

2. *Knowledge transfer and Information Actions (Article 15)*
   Support under this measure shall cover:
   i) Vocational training and skills acquisition actions, demonstration activities and information actions. Vocational

training and skills acquisition actions may include training courses, workshops and coaching.

ii) Support may also cover short-term farm management exchange and farm visit.

3. *Advisory services, farm management and farm relief services (Article 16)*
   Support under this measure shall be granted in order to:
   i) Help farmers, forest holders and SME's in rural areas benefit from the use of advisory services for the improvement of the economic and environmental performance as well as the climate friendliness and resilience of their holding, enterprise and/or investment;
   ii) Promote the setting up of farm management, farm relief and farm advisory services, as well as forestry advisory services, including the Farm Advisory System referred to in Articles 12 to 14 of Regulation (EU) No HR/2012;
   iii) Promote the training of advisors.

Clearly aspects of this measure are as applicable to the FAS as to Operational Groups.

4. *Investment in physical assets (Article 18)*
   Support under this measure shall cover tangible and/or intangible investments which:
   i) improves the overall performance of the agricultural holding;
   ii) concerns the processing, marketing and/or development of agricultural products covered by Annex I to the Treaty or cotton. The output of the production process may be a product not covered by that Annex;
   iii) concern infrastructure related to the development and adaptation of agriculture, including access to farm and forest land, land consolidation and improvement, energy supply and, water management; or
   iv) are non productive investments linked to the achievement of agri- and forest environment commitments, biodiversity conservation status of species and habitat as well as enhancing the public amenity value of a Natura 2000 area or other high nature value area to be defined in the programme.

5. *Farm and Business development (Article 20)*
   Support under this measure shall cover:
   i) business start-up aid for, young farmers, non-agricultural activities in rural areas and the development of small farms;
   ii) investments in non-agricultural activities;
   iii) annual payments for farmers participating in the small farmers scheme established by Title V of Regulation (EU) No DP/2012 (hereafter "the small farmers scheme") who permanently transfer their holding to another farmer.

This will provide opportunities for Irish farmers to benefit from increased research and development funding under the Horizon 2020 programme. The programme is determined to address the issue of low/slow adoption of new technology in agriculture.

The EIP will achieve its aims through ('Operational groups') These groups will consist of advisers, researchers, farmers and business who will address specific challenges with a view to providing improvements over the course of the programme in terms of productivity and sustainability of producers and the industry.

Funding for the set of OGs (up to 80%) will be through the co-operation measure of Pillar 11 of the CAP.

What issues should it address?

- Productivity and sustainability issues ;or
- Research and knowledge transfer process issues

In order to ground the operational groups in reality they should be focused on what needs to be done and not on how this needs to happen. So for example there are issues around productivity;

- Soil fertility/nutrition
- Genetics, plant and animal
- Pest and disease control
- Animal nutrition and welfare
- Social and demographic

There are issues around sustainability;

- Economics
- Water quality and supply
- Climate change
- Biodiversity

Some of the productivity issues can be progressed in a European context. These will be successful only if they take account of and satisfy the sustainability issues. So it is better that sustainability be addressed with productivity rather than as an issue on its own. The same logic can be applied to the how in that the research needs and the appropriate knowledge transfer plan should be based on the plan to address the productivity issue.

7. Capacity Building for Cross Compliance

The 2003 reform of the Common Agricultural Policy (CAP) introduced a new system of payments for farmers and cut the link between support and production. In 2005, the Single Payment Scheme (SPS) replaced the direct payments to farmers that were previously in place. Farmers whose land is situated within a Disadvantaged Area are also entitled to the Disadvantaged Areas' Compensatory Allowance Scheme (DAS) if they meet the eligibility criteria. The annual value of these two schemes to Irish farmers is about €1.55 billion. With effect from 2007, the Cross-compliance checks also apply to farmers getting the Disadvantaged Areas' Compensatory Allowance Scheme and/or the Rural Environment Protection Scheme payments.

There are two types of checks carried out for the purpose of implementing the Single Payment/Disadvantaged Areas' Compensatory Allowance Scheme:

- Eligibility checks and
- Cross-compliance checks.

Cross-compliance involves two key elements:

- A requirement for farmers to comply with 19 Statutory Management Requirements (SMRs) set down in EU legislation on the public health, animal and plant health, animal welfare, and the environment.
- A requirement to maintain the land in good agricultural and environmental condition (GAEC).

Some 1,350 farmers (or 1 % of SPS applicants) will be inspected annually for GAEC and all SMRs that are applicable to them. However, 5% of farmers (about 5000) who have cattle must be inspected under Cattle Identification and Registration requirements and 3% of farmers (about 900) who have sheep.

Farm Advisory System:

Under the Farm Advisory System outlined above, Ireland has an advisory system in place and the names of the approved advisory bodies are published on the Department's website under Cross-compliance at http://www.agriculture.gov.ie/media/migration/farmingschemesandpayments/crosscompliance/farmadvisorysystem/CCFASAccreditedAdvisors101012.xls

Article 21d of Council Regulation (EC) No 1783/2003 on support for rural development provides that support may be granted (from the Modulated funds) to farmers to help them meet the costs arising from the use of the farm advisory services.

Initially the purpose of FAS was "to encourage farmer's use of Advisory Services in order to facilitate the Compliance with Standards pertinent to the Environment, Public & Animal Health, animal welfare & nature, including preparation of nature plans". The Council Regulation No 1257/1999 indicated the possibility to grant support to farmers to help them meet costs arising from the use of farm advisory services *(Art. 21d).*

Possibility to grant support for measures concerning the setting up of farm advisory services *(Art. 33).*

Teagasc Successful involvement in CC-FAS:-

- EU Stipulation that control and advice must be kept separate. DAFM are the control agency so can't disseminate advice. Teagasc has been the main disseminator of Cross Compliance advice in Ireland since 2007.

- 2008/2009/2010 – Cross Compliance farm walks/seminars and meetings at local and regional level. Initially in conjunction with DAFM but recently solely by Teagasc staff.

- 2011 seventy Cross Compliance Events took place nationally for all farmers by Teagasc and approximately 9,000 farmers attended these meetings.

- 2012/2013 more specific Cross Compliance Courses have been developed in conjunction with a self assessment booklet. Intention is to deliver these courses to Teagasc clients initially in 2012/2013 in a group format similar to DEP/BTAP groups. The consultations that we have in relation to SPS and the support for audit can all be considered part of FAS.

Challenges for FAS:-

- FAS education is desirable for all farmers receiving direct payments

- Teagasc main provider of CC services – limited due to staff moratorium etc. The failure of Ireland to apply the available funding to FAS has mitigated against involvement by private consultants

- Funding for Cross Compliance should be made available to individual farmers to receive Cross Compliance support and services

- Dissemination of Cross Compliance information has been poor by all agencies involved.

- Cross Compliance will be more complicated in the future with more EU regulations and Directives to be upheld. But whose responsibility is it to deliver this at farm level. Need buy-in from farm organizations, DAFM, Local Authorities and all Agricultural consultants.

- To date the approach to achieving Cross Compliance has completely focused on audit and penalty. The potential role of education and information support has been completely left out of the equation.

The Future of Cross Compliance:-

- While the future is unsure due to CAP reform, it is safe to assume that Cross Compliance is here to stay; the issue of delivery of Cross Compliance advice to all Teagasc clients must be part of our day to day dissemination work.

- Cross Compliance will be much broader post 2014 – see link below slides 30-40. The "Budget for Europe 2020" includes a major investment in the CAP section with €4.5 billion for research and innovation in the field of food

security, bio-economy and sustainable agriculture. There is a need for faster transfer of knowledge from research and expanded FAS requirements to practical farming. Member States' FAS coordinating bodies may play a coordinating role in this link in the future.

- There is a need to examine the possibility of incorporating into the FAS dissemination of information of achieving positive environmental outcomes which are beyond the scope of the strict cross compliance provisions.

- There is a need to consider the potential role of education. This could usefully be considered under the "Greening Measures"

- For non-Teagasc clients there is a need to put in place a structure which enables the private sector to deliver similar courses / services to farmers.

- A key tool in achieving cross compliance is well trained advisors who will target advice to farmers. There is a need to extend adviser training to the broader group of advisers/consultants who provide technical assistance to farmers

- Regional variations in advice is very important i.e. NATURA 2000 sites

- Control documents must be made available to advisory and farming bodies.

- Improved dissemination of information by DAFM on "Control mechanisms and more farmer friendly information is essential" but the disseminators must engage with DAFM to get the best advice possible to farmers.

- Improved tools for farmers to engage better with Cross Compliance and also Farm Level Indicators need to be developed to ensure the advice is adapted. This includes the development of a comprehensive information resource and the provision of improved recording procedures.

- Farmers should have the ability to seek professional support for FAS services and the opportunity to draw down the EU funding for this professional service.

- See conference proceedings from Agri-Environment Conference December 2013 http://www.teagasc.ie/publications/2012/1637/Al_Grogan_DAFM.pdf

8. Industry Competitiveness

Support should be provided for ongoing mentoring to enable the farmer/directors of dairy companies to be better able to appraise external factors and shape their business strategy accordingly.

Why do this?

Industry structure: This is fragmented when compared with our competitors (Fonterra, Arla etc).

Academic support: Macroeconomic analysis of dairy policies and markets may be satisfactory, but is not drilling down to the levels that support strategic product mix decisions. While some boot camp courses have been provided to industry boards, there is a lack of academic depth and capacity to support ongoing industry competitiveness analysis; hence we need an emphasis on mentoring.

Added Value: There is a need for investment in strategists to judge long term market trends and continually refine the business model and product offering so as to be one step ahead of the competition.

D. AXIS 2 – PROMOTING SUSTAINABILITY

Expenditure under Pillar 2 Axis 2, including REPS, afforestation and less favoured area payments, has been hugely significant to Irish farmers. Axes 2 expenditure at a EU level accounted for approximately 44% of Pillar 2 expenditure, whereas in Ireland was as high as 84%.

8. Less Favoured Areas/Areas facing Natural or other Specific Constraints

Policy Description and Context

The Less Favoured Area (LFA) scheme is one of the major instruments of the European Union's Rural Development Policy for 2007–2013. It is part of Axis 2 of this policy that aims to 'improve the environment and the countryside by supporting sustainable land management' (European Commission, 2009). Less Favoured Areas are defined as areas 'where agricultural production or activity is more difficult because of natural handicaps, e.g. difficult conditions, steep slopes in mountain areas, or low soil productivity in other less favoured areas' (European Commission, 2009).

The LFA payment scheme has been in place since 1975 to support farming and countryside management in these areas and to negate the risk of widespread land abandonment. Currently, 57% of the utilizable agricultural area in the EU is classified as LFA, with ca. 1.4 million farms receiving direct support under the scheme. For the period 2007–2013, €12.6 billion has been allocated to the scheme, corresponding to ca. 14% of the total Community funding allocation (European Commission, 2009).

Policy Issues

In Ireland land was first classified as disadvantaged arsing from Council Directive 75/272/EEC. Three categories of disadvantaged area were initially recognised covering 57.8% of eligible land area. Following a number of review phases the total now classified as disadvantaged comprises nearly 75% of national eligible land area. Total payments in Ireland under the Income Support measure for Disadvantaged Areas measure (which is co-financed from EU funding) was in excess of €460 million. In 2007 family farm income in Disadvantaged Areas was 50.7% of that in non-Disadvantaged Areas rising to 71.19% in 2009.

O'Donoghue et al. (2012, unpublished) have provided an additional short statistical analysis of the Less Favoured Areas as defined by the Disadvantaged Area Scheme (DAS). Analysis is drawn from the Teagasc National Farm Survey and the Teagasc Simulation Model of the Irish Economy (SMILE). The report involved analysis of the Teagasc National Farm Survey in the context of a spatial analysis using the Teagasc Simulation Model of the Irish Economy and a viability analysis of the Teagasc National Farm Survey data.

Data in the Teagasc National Farm Survey were examined in order to describe the economic situation on farm, both for those in receipt of the Disadvantaged Area Scheme and all farms surveyed. Family Farm Income (FFI) on both DAS farms and

non-DAS farms is driven by size, intensity and system. The number of farms (and percentage of population) in the NFS sample receiving DAS is higher than those not receiving DAS (777 farms and 76.7% of population for the former and 286 and 23.3% of population for the latter).

The conducted financial analysis involved decomposing family farm income (FFI) into Gross Output, Direct Payments, Direct Costs and Overhead Costs. A key output from the analysis shows that Average Family Farm Income per farm with DAS payments is 54% of those for non-DAS farms. This is partially due to size differences as the average area is 36 hectares per farm with DAS and 45 hectare for non-DAS farms, a ratio of 80%. However although farms are smaller, the average FFI per hectare on farms in receipt of DAS payments is also smaller at 68%, reflecting the different agronomic quality of the land. Differences in the ratio are recognised, varying from 80% for sheep to 112% for Mixed Livestock.

In 2003, the European Court of Auditors criticized the designation of the intermediate LFAs and the lack of targeting of aid (Court of Auditors, 2003). In response, the intermediate LFAs were reviewed and redefined in Article 50.3 (a) of Council Regulation (EC) No 1698 ⁄ 2005 as those areas 'suffering from natural handicaps, which do not tend to change over time', and past references to socio-economic criteria were removed. A group of experts tasked by the commission coordinated by the commission's Joint Research Centre proposed eight common, that is, EU-wide, biophysical criteria for the new delineation of intermediate LFAs (Van Orshoven et al., 2008; Bottcher et al., 2009). These are (i) low temperature, (ii) heat stress, (iii) soil drainage, (iv) soil texture and stoniness, (v) rooting depth, (vi) soil salinity, sodicity and gypsum contents, (vii) soil moisture balance and (viii) slope. The scientific background, definitions and proposed threshold values for these criteria are described by Eliasson et al. (2010). These proposed amendments to the criteria on which eligibility for DAS payments will be made are detailed in Annex II of the documentation on 2014-2020 CAP Pillar 2 Rural Development Programme.

Research Evidence

Reviews of the proposed new criteria as applied to the biophysical conditions in Ireland have found that none of the proposed biophysical criteria, nor any combination of these, describe satisfactorily the geographical delineation of areas where agricultural productivity is known to be limited (Schulte et al., 2008). Studies showed that the proposed table of criteria was biased towards delineating LFAs in more continental and Mediterranean climates.

Previous studies had shown that under Atlantic climatic and pedological conditions, economic sustainability (Shalloo et al., 2004) and environmental sustainability (Schulte et al., 2006) of livestock farm practices, as well as land capability for agriculture (James Hutton Institute, 2011b) are primarily all determined by spatiotemporal patterns in soil moisture as demonstrated in the UK by Thomasson & Jones (1989), Rounsevell & Jones (1993) and Earl (1997). These studies show that excess soil moisture impacts negatively on grass growth, trafficability, herbage utilization and nutrient loss to water and is arguably the dominant biophysical restraint on strategic and tactical farm management decisions and farm system viability.

Excess soil moisture conditions and their spatiotemporal patterns arise from an inextricable interaction between climatic and pedological variables including the distribution, intensity and frequency of precipitation, the rate of evapotranspiration by crops and soil, the infiltration and percolation rates of different soils, and groundwater and surface water dynamics resulting from landscape topography. Neither climatic nor pedological variables alone can describe adequately the impact of excess soil water on the interaction between soils, crops and nutrient dynamics. Therefore, the third biophysical criterion for the new delineation of LFAs ('soil drainage') fails to describe adequately the areas subjected to frequent and prolonged excess soil moisture conditions, while the criterion 'soil moisture balance' has only been defined for situations where soil water is in deficit (i.e. drought conditions) and not excess.

Schulte et al. (2012) have provided a comprehensive review of the scientific evidence for the effect of excess soil moisture on soil management practises and on the economic and environmental sustainability of farming systems in Atlantic Northwest Europe with reference to the proposed new delineation of LFAs. They synthesize various empirical and modelling studies that have established and quantified the relationships between excess soil moisture conditions and agricultural systems in the Atlantic climatic region but with specific reference to grass growth, trafficability, herbage utilization, and transport and loss pathways of nutrients and pathogens.

Under Atlantic conditions, precipitation is generally high, but the key feature of Atlantic climates is that annual precipitation exceeds annual evapotranspiration, resulting in positive annual water balances. Precipitation is relatively evenly distributed throughout the year, although on average amounts tend to be higher during the winter. Evapotranspiration has a more pronounced seasonal variation, from <1 mm⁄d during the winter months to >3 mm⁄d during the summer. The combined effects of both variables gives rise to seasonal trends in soil moisture: SMD increases during the summer months when evapotranspiration exceeds rainfall, although prolonged and severe droughts, as defined by the proposed criteria for the new delineation of LFAs (Van Orshoven et al., 2008) do not occur (Schulte et al., 2006).

More significantly, most soils and regions experience excess soil moisture conditions for prolonged periods from autumn to spring, with soil moisture levels in excess of FC, corresponding to negative SMD. However, these generic seasonal patterns are subject to substantial inter-annual and geographical variability (Hudson & Birnie, 2000; Brown et al., 2008), depending on the rainfall amounts and patterns in different years (Lilly, 1999).

Impact on productivity

Excess soil moisture conditions have a pronounced impact on grass and crop growth in Atlantic climates. While monthly air temperatures facilitate in principle a very long growing season of up to 11 months, prolonged periods of excess soil moisture can reduce grass productivity during the winter months. Fitzgerald et al. (2005) have shown that annual grass productivity on poorly drained soils was reduced by 1.25–3.55 t ⁄ ha compared with the potential growth on well-drained soils subjected to identical climatic conditions.

In addition to reducing total quantities of annual herbage production, excess soil water can reduce the length of the grass-growing season. Schulte et al. (2006) demonstrated that at a regional scale, the length of the growth period may be reduced from a potential of 10–11 months when air temperatures facilitate growth to 6 months as a result of reduced photosynthesis These limitations of excess soil water conditions have a significant impact on farm practices and the overall viability of farming systems.

Impact on farm operations

Excess soil moisture conditions also affect farm operations by reducing the windows of opportunity during which land can be accessed safely by farm machinery without inducing soil compaction. The impact of excess soil moisture conditions on farm operations differs from their impact on herbage utilization, in that most farm operations only need relatively short windows of opportunity, i.e. a few days. For some operations (e.g. sowing of cereal crops), the timing of these windows of opportunity is crucial, while other operations (e.g. silage harvesting) allow more flexibility. In either case, for farm operations, the total annual duration of excess soil moisture conditions is of lesser importance than the frequency of the windows of opportunity with no excess soil moisture during which the soil is trafficable or workable. Fitzgerald et al. (2008) demonstrated that at a farm level, reduced trafficability results in an extension of the period during which grazing animals need to be housed by 45–111 days, as well as a reduction in optimum stocking rate by 0.6–0.9 cows/ha.

Impact on environmental sustainability

The reduced number of working days suitable for traffic in areas with excess soil moisture increases the risk that operations have to be performed under suboptimal conditions. This includes both trafficking of machinery (e.g. silage cuts, fertilizer applications, harvesting) and animals (grazing) and direct working of the soil (e.g. ploughing, seed bed cultivation) (Earl, 1997). Damage to fields by wheels can range in extent from 20 to 35% for each operation (Tullberg, 2000). This can have a consequential effect on environmental sustainability through compaction, which results in poor soil structure that in turn causes a reduction in rooting depth, workability and water infiltration (Creamer et al., 2010). This can contribute to waterlogging in flat areas or to overland flow, runoff and erosion in worst-case scenarios (Dexter, 2004). In addition, excess soil moisture constrains the windows of opportunity during which nutrients can be applied to soil with minimum risks of nutrient loss: these relationships between soil moisture dynamics and losses of phosphorus (P) through overland flow and nitrogen (N) through nitrate leaching were reviewed by Schulte et al. (2006). The three main environmental risks that need to be taken into account when considering the impact of excess soil moisture conditions on field-trafficking operations are (i) risk of erosion and runoff, (ii) impact on organic matter and (iii) impact on energy and materials use.

The research provided by Schulte et al. (2012) provides evidence that the spatiotemporal dynamics of excess soil moisture conditions are arguably the main biophysical constraints on farm practices in Atlantic climates, thereby influencing the nature and viability of farm systems in these regions. The reported research concluded that excess soil moisture constrains farm practices by (i) limiting grass

growth directly, and thereby affecting primary farm productivity; (ii) constraining the utilization of available herbage by grazing animals or silage harvesting through reduced trafficability of soils which in turn leads to increased requirements for indoor housing and feeding of farm animals, which increase direct costs to the farmer.

Together these constraints have a significant impact on farm practices and farm viability. In Ireland, 56% of intensive livestock farms (classified as farms with stocking densities in excess of 170 kg organic N per hectare, and therefore subject to nitrates derogations), contain land currently classified as LFA.

The farm system evaluations by Shalloo et al. (2004) and Fitzgerald et al. (2008) show that farm management is different on farms on which excess soil moisture persists for prolonged periods of time, with lower grass production, lower stocking rates, later turn-out dates and earlier turn-in dates, and subsequently longer housing periods and higher costs.

These findings have direct relevance to the new delineation of LFAs, as the objective of the proposed new delineation is to identify 'the most pertinent characteristics of land according to its suitability for generic agricultural activity' (Van Orshoven et al., 2008; Bottcher et al., 2009). While the original table of proposed biophysical criteria (Van Orshoven et al., 2008) included the duration of drought conditions (i.e. high SMDs), this reflected only one aspect of the impact of soil moisture conditions on farm practises, which is most prevalent in continental and Mediterranean climates. In the researched reviewed here, it was concluded that the constraints imposed by excess soil moisture conditions as prevalent in Atlantic climates are of equal magnitude.

Recommendations:

As a basis for further recommendations the following may be concluded:

- Under Atlantic climatic environments, excess soil moisture conditions occur frequently and for prolonged periods of time on a wide range of soil types as a result of interactions between climatic and pedological conditions.
- The incidence of excess soil moisture conditions is the main biophysical constraint on farming practices in these environments, causing reduced grass growth, reduced herbage utilization, limited windows of opportunity for machinery operations and as a result reduced or even prohibitively low economic sustainability for a wide range of farm enterprise types.
- Any restructuring of this programme should therefore recognise some of the unique challenges faced by farmers in a situation of excess soil moisture. Research has demonstrated that a failure to incorporate this condition in determining eligibility will leave Irish farmers at a significant disadvantage and will result in a significant reduction in income.
- Both modelling and empirical studies demonstrate that the economic and environmental sustainability of intensive livestock farming and tillage systems are particularly challenging in scenarios where the 80 percentile duration of excess moisture conditions exceeds 220–230 days.

9. Agri-Environment Schemes

Introduction
This submission sets out in a succinct manner a series of principles that will contribute to the establishment of an EU Pillar II policy / regulatory framework from which an effective Agri-Environment Scheme can be designed for Ireland.

Building on the sustainability strategy within Food Harvest 2020, the promotion of environmental sustainability is a critical component of the growth and marketing strategy of the sector. As the main land use in Ireland, the action of farmers in promoting environmentally sustainable farming will have one of the highest impacts on environmental public goods.

Given the cost to farmers in farming in sometimes economically sub-optimal fashion (for example farming with a lower stocking rate etc) or implementing environment enhancing measures that enhance the landscape, biodiversity, soil, water and air quality, farmers need to be compensated for these actions.

The objective of REPS was to reward farmers for carrying out their farming activities in an environmentally friendly manner and to compensate for the cost and opportunity cost of participation, while maintaining agricultural sustainability and profitability.
There is a continuing need for agri-environment schemes if Ireland is to meet increasingly ambitious environmental objectives.

Principles
Cross Compliance for the Single Payment Scheme now requires that there is compliance with baseline environmental standards. However, there is a demand to deliver environmental goods and services and outcomes beyond the baseline. Future schemes should build on Cross Compliance and deliver the wide range of important agri-environmental products and services that contribute the raw materials of the agri-food industry, and are valued by society.

The outcomes of the recent Court of Auditors report on agri-environment will act as a driver for the enforcement of targeting in future agri-environment schemes and will place increased pressure on the level of rigour associated with scheme design, prioritisation of objectives, implementation and environmental monitoring.
The new scheme should strongly reflect national agri-environment priorities and plan to ensure delivery of relevant and positive environmental impacts. It is essential that any new scheme has clearly defined and specific environmental objectives. Broad scheme objectives of climate change, renewable energies, water management and biodiversity should each have separate and clearly prioritised sub objectives.

The design of the new scheme must recognise, encourage and reward farmers for the delivery of high quality environmental goods and services from multifunctional Irish agriculture. The Burren Farming for Conservation Programme is a proven example of how agri-environment principles can be successfully applied in practice.

A new scheme should incorporate the capability to support the development of innovative Pilot initiatives, such as the Burren Farming for Conservation Programme and should also strongly reflect national agri-environment priorities.

Financial considerations

A fundamental principle of environmental measures is that they should be cost-effective i.e. able to achieve the policy objective at lowest cost. Cost-benefit frameworks that measure both the environmental benefits and the corresponding abatement costs associated with delivering the benefits are now expected in the implementation and design of all environmental policy. Teagasc research has highlighted that many environmentally enhancing measures produce a win-win situation, increasing both farm profitability and improving the environment.
Such measures have a negative marginal abatement cost. Wherever possible agri-environment policy should promote measures that achieve this, whether financial incentives are applied or not. Teagasc recommends that all agri-environment policy should be tested by a rigorous cost-benefit analysis.

Measures must be realistically costed and include transaction costs as well as the opportunity and monetary costs of participating in a measure, to reflect the cost of participation and implementation by farmers, and to ensure selection of measures on the basis of environmental merit rather than cost.

A critical level of payment will probably be necessary for the scheme to stimulate sufficient participation by farmers, and payment levels per farm should approach previous average REPS payments.

Resource allocation

The expected requirement for targeting will mean that difficult decisions will need to be made about resource allocation to different competing sub-objectives. The selection and design of measures should be informed by their effectiveness in addressing sub-objectives and should be guided by the cost-benefit analysis with higher measures that produce the highest return receiving more resources.

Where targeting is to be implemented on the basis of region, farm systems or environmental sensitivity, the criteria will need to be established on a strictly scientific basis. Measures should be evidence-based in terms of environmental benefits and costs. To promote targeting and effectiveness, there should be a clear justification from research evidence about how the recommended measures can achieve the desired environmental objectives, in what situations the benefit will be best realised, and in what situations a measure should not be selected.

On individual farms, objective targeting of options is required to maximise the environmental benefits. This will ensure that measures are selected to achieve the best match between scheme priorities and most appropriate objectives for individual farms.

Within a farm, resources must be targeted to maximise environmental benefit on a cost-benefit basis. A flexibility of administration is required to allow measures be located as appropriate.

Spatial targeting based on more local priorities is recommended on a regional basis, where possible. Examples include the Grey Partridge in Offaly, Natura 2000 areas, the Burren and other High Nature Value farming areas.

The Burren Farming for Conservation Programme which is the culmination of 15 years of consultation, applied research and innovation should be expanded. It now stands, uniquely, as a tried and tested model for the proven delivery of a range of environmental, agricultural and socio-economic benefits for the Burren, Ireland's flagship heritage landscape.

Availability of agri-environment to all farms:
Every farm has a capacity to deliver environmental benefit. Design of measures should support and enhance the verification of the sustainability of Irish food produce from farms who supply the majority of the production. This will support the environmental objectives of Food Harvest 2020 and contribute to verification of our green image. It will consolidate the benefits of the €3bn previously spent on agri-environment. Farms with neither Natura 2000 nor specific priorities could focus on measures that deliver multiple simultaneous benefits for climate change, water quality and biodiversity. Measures on such farms have the potential to deliver significant national environmental benefit.

Collaborative approach:
Many environmental objectives require co-ordinated efforts across multiple farmers within a region or landscape, especially for more threatened populations of farmland wildlife. The new scheme should facilitate and encourage group submissions by farmers, and payments should reflect the associated increased private transaction costs. Additional financial incentives are critical for collaboration. The most obvious case is the need for collective buy in by commonage shareholders (as is the current requirement for eligibility for commonages in agri-environment schemes in the UK), but there are potential benefits in other areas such as watercourses.

Education component
There should be an education component to future agri-environment schemes to provide life long learning with the intention of positively changing attitudes and behaviours. There is a significant cohort of environmental measures that have no net cost to farmers but deliver significant environmental benefit. Courses can facilitate both technical information in relation to the implementation of measures, but also measures to facilitate informed decision making so that farmers can choose measures that deliver environmental actions at least cost and potentially highest benefit to themselves.

Courses must contain a practical component preferably based on site for relevant issues. Professional development of farmer participants is essential to underpin the delivery of the scheme's objectives and should include the environmental impact of measures.

Up-skilling of advisers and trainers is also essential and a high standard should be demanded from those delivering courses to farmers.

A partnership approach using networks of government and non-government organisations with specialist knowledge should be facilitated to deliver the education component as has been successfully demonstrated by the development of Teagasc

Countryside Management optional REPS 4 Courses in collaboration with other organisations.

Monitoring
It is essential that the design and implementation of the new scheme results in payments for delivery of agri-environmental goods and services in an effective and efficient manner. Environmental monitoring should be implemented to demonstrate the environmental benefits. This is important to address key national environmental challenges, and to justify and secure a long-term commitment to agri-environment payments, especially in the policy domain after 2013. An on-going scientific assessment programme should be considered to monitor and assess evidence of delivery of the environmental objectives and value for money. A parallel programme of monitoring the implementation of the measures on farms will also be important.

Planning
A comprehensive programme of planning and preparation is essential for any scheme. It is essential that the evaluation process is built in from the start. A good example is the Dairy Efficiency Programme, where an evaluation plan was put in place at the start with parallel research effort undertaken.

Professional involvement
The resource of professional agri-environmentalists who have been trained and up-skilled with continued professional development should be availed of as a vital part of future agri-environment schemes. The importance of getting access to transfer knowledge and influence farmers on environment issues is crucial to the achievement of our ambitious environmental targets. The link between agriculture and environment in any advisory service is essential both for the sustainable intensification of some of our farms and for the management of our important environmentally protected areas – 60% of which are farmed and where farming is essential to maintain in favourable condition.

The success of REPS was due in no small way to the input of professional agri-environment advisers through:

- Raising awareness of environmental issues
- Knowledge transfer of agri-environmental technology
- Education and training, including practical skills
- Ongoing monitoring/management of the agri-environmental farm specific plan

Extensive and specialist technical expertise and knowledge have accrued in Ireland since the introduction of REPS in 1994 amongst agri-environment planners, specialists, government and non-government organisations. The process of scheme design should make maximum use of this expertise and experience available in Ireland. A national steering group should be established so as to ensure value for money and maximum environmental benefit, which would include farmers.

Scheme issues
Agri-environment schemes must fit into a broader framework of a planned programme to facilitate the workload so that the capacity of agri-environment professionals can be maximised to benefit the delivery of the scheme.

Schemes should be flexible to allow normal succession and transfer of farms to occur while facilitating participation in agri-environment measures during the process.

Anomalies between schemes should be addressed and the interaction of agri-environment schemes with other schemes should not lead to confusion over objectives of the measures.

10. Agri-Environment Scheme Operational Issues

Education component

There should be an education component to future agri-environment schemes to provide life long learning with the intention of positively changing attitudes and behaviours. There is a significant cohort of environmental measures that have no net cost to farmers but deliver significant environmental benefit. These courses can facilitate both technical information in relation to the implementation of measures, but also measures to facilitate informed decision making so that farmers can choose measures that deliver environmental actions at least cost and potentially highest benefit to themselves. Courses must contain a practical component preferably based on site for relevant issues.

Planning

A comprehensive programme of planning and preparation is essential for any scheme. It is essential that the evaluation process is built in from the start. A good example is the Dairy Efficiency Programme where an evaluation plan was put in place at the start with parallel research effort undertaken.

On Farm Targeting of resources

Within a farm resources must be targeted to maximise environmental benefit on a cost benefit basis. A flexibility of administration is required to allow measures be located as appropriate.

Spatial targeting

Spatial targeting based on based on individual priorities is recommended on a regional basis, for example the Grey Partridge in Offaly.

Availability of agri-environment to all farms

Every farm has a capacity to deliver environmental benefit. Design of measures should support and enhance the verification of the sustainability of Irish food produce from farms who supply the majority of the production. This will support the environmental objectives of Food Harvest 2020 and contribute to verification of our green image. It will consolidate the benefits of the €3bn previously spent on agri-environment. Farms with non Natura or specific priorities could focus on measures that deliver multiple simultaneous benefits for climate chance, water quality and biodiversity. Measures on such farms have the potential to deliver significant national environmental benefit.

Professional involvement

The resource of professional agri-environmentalists who have been trained and up skilled with continued professional development should be availed of as a vital part of future agri-environment scheme.

Collaborative approach

Additional financial incentives should be available for collaboration. The most obvious case is the need for collective buy in by commonage shareholders (as is the current requirement for eligibility for commonages in agri-environment schemes in the UK), but there are potential benefits in other areas such as watercourses.

11. Organic Farming

In order to support the Government target of 5% of UAA under organic production and to respond to the increasing demand for organic food, environmentally friendly farm practices and high animal welfare standards, an organic farming scheme and on and off-farm investment grant scheme should continue to be supported under the new CAP.

The new scheme should especially encourage producers who supply organic markets and support those who remain in the sector. A number of alterations to the present scheme are recommended, including:

- a separate and increased rate of payment for organic horticulture and arable producers.
- staggered payment rates to encourage more smallholders to enter the sector.
- in-conversion and organic payment rates to be altered so as to support organic farmers who remain in the sector.
- provision of funding for the delivery of accredited training both before and during participation in the Organic Farming Scheme (similar to REPS schemes) delivered by accredited tutors.
- clarify eligibility of Organic Farming Scheme applicants to enter other agri-environment and agro-forestry schemes.
- alter the minimum capital investment requirement of the on-farm grant aid scheme to allow greater flexibility for organic producers.
- Encourage Organic Producer Groups - *ref Article 28

The organic supply base in Ireland is relatively fragmented. The "producer group" model is especially relevant to the organic sector as it facilitates co-operation amongst suppliers, enhances the marketing of "niche" products and improves seasonal continuity of supply to both domestic and export markets. Support should be granted to organic producers who establish producer groups. These groups should be set up under an officially recognised set of standards. Support should be paid to the producer group and not individual participants.

*Support co-operation amongst Organic Farmers - ref: Article 36

Because the organic sector is relatively new and under-developed in Ireland in comparison to many EU countries, there is a great need to encourage the

establishment of clusters and networks so as to improve joint work processes, share facilities/resources and improve economic viability. Organic farming is closely linked to short supply chains, and the supply of local markets. Support for the establishment of networks and clusters, is key to the further development of the sector.

Improve knowledge transfer and dissemination within the organic sector – ref Article 15 and Article 16.

The continued provision of advisory and educational support for organic producers should continue to be funded. The DAFM/Teagasc organic demonstration farm programme should be continued with more emphasis to include provision of resources to support more on-going research monitoring in specific technologies and sectors (viz. BETTER farm programme) This will enhance knowledge transfer and information dissemination to the sector.

12. Forestry

Introduction

In making the submission it is important to point out that measures affecting forestry currently are situated across both Pillars of CAP and across the four axes of Pillar 2.

What should be the objectives of the future rural development policy?

The core challenges of protecting jobs (particularly in the agricultural sector), maintaining incomes and diversification are still of relevance. Newer challenges for EU Rural Development should focus objectives on issues related to tackling climate change and optimizing renewable energy sources. The conservation of biodiversity and the positive role of riparian forests in the management of water quality should also be prioritized. It is important that the benefits of forestry, and the requirements of forest owners, are reflected across these objectives.

Import substitution and use of natural resources:

The challenge of optimizing the use/return from our natural resources should also be a key objective. In relation to the overall sustainability of EU forestry we should consider two issues: that of import substitution to prevent illegal logging and deforestation in developing tropical countries and the use of indigenous sources of renewable energy (including wood) to reduce pressure on fuel displacing food and on increasing food prices in developing countries.

Agricultural Income support:

In relation to Pillar 1 we should ensure the continued payment of SFP on afforested lands. This is necessary to ensure that forestry as an enterprise is treated at least on an equal basis with other farm enterprises. If the suggested move from compensation to contractual principle + basic income support (Bureau and Mahé, 2012) is adopted forestry must be included in the restructuring of these measures.

Improved competitiveness (forestry and agriculture):

Pillar 2 Axis 1 focuses on improving competitiveness and facilitating restructuring, development and innovation. Incentives aimed at increased forest productivity would increase competitiveness while also increasing the carbon sequestration potential of the forest (Waring, 2000). In addition increased output in other agricultural sectors e.g. dairying could be offset either regionally or at farm level by balancing with carbon sequestration measures e.g. forestry.

Cohesion measures:

Ireland is relatively unique in Europe in relation to the age structure of our private woodlands. Infrastructural support is required to support forest harvesting and marketing developments and continued and more focused support for the development of discussion groups (knowledge transfer, skills training) and producer groups (capacity building, clustering) in forestry is essential. Measures which support increased competitiveness will, as a consequence, result in increased economic activity in rural areas.

Environmental protection and enhancement:

Objectives aimed at supporting environmental enhancement e.g. riparian forest buffers, forests with enhanced carbon sequestering ability, increased biodiversity in forests and the increased use of energy wood should be prioritized.

Support for afforestation and forest management:

In relation to the broad issues facing farm forestry in Ireland that should be supported in the new CAP, the main concerns are that there needs to be continued support for afforestation in the form of grants and annual premium payments. In addition support measures are necessary to ensure that new forests and existing forests are managed to ensure maximum return to the landowner and the maximum public good. Due to the age structure of our woodlands and the lack of forestry knowledge and experience of or farm forestry owners considerable supports are needed in the form of advisory, training, group formation and R&D support.

How can the RD policy instruments be made more effective?

Moving towards more objective-lead measures will ensure that CAP funding will provide greater value for money and be more measurable in that the schemes can be evaluated against the achievement of the objectives.

Competitiveness can be improved through further R&D in areas including financial and technical decisions support systems. Policy instruments should strive to add value to produce as well as enhancing the environment e.g. support for establishing "green" businesses. Support for biodiversity corridors between forests would deliver enhanced environmental objectives to both agriculture and forestry. Support for networks would more effectively augment knowledge transfer and capacity building between disparate groups in rural areas. Close-to-nature forestry supports which generate the need for the use of contractors with specialist and traditional skills can lead to

environmental benefits and additional indirect employment benefits resulting from increased tourism and recreational opportunities.

Because of the discrete and diverse nature of farm forestry in Ireland, preference should be given to measures that will result in benefits to the greatest number of farm forestry owners and to the local community. A focus on directing resources towards clustering and groups will ensure the maximum benefit in relation to the number of forest owners availing of initiatives and the efficient use of scarce resources (as clustering tends to promote participation thereby encouraging the use of the resource). The increasing use of geospatial datasets will create further efficiencies in the use of resources.

How can the management/implementation of the RD policy be improved?

With a tightening budgetary situation all future objectives should have an in-built value-for-money filter. Measures need to be quantifiable, targeted and have clearly outlined objectives.

Supports should be objective-led so that success or failure can be readily ascertained within a specific time-frame. Supports in sensitive environmental areas should be allocated on a competitive basis so that maximum environmental benefits are achieved.

Each support measure should be evaluated against the criteria adopted at the UN Conference on Environment and Development in Rio de Janeiro in 1992. This is summarized as the attainment of balance between society's increasing demands for forest products and benefits, and the preservation of forest health and diversity.

Ireland is in a unique position having only 11% (745,456ha) forest cover (EU average~30 %.) The Irish Programme for Government has an afforestation target of 14,700ha per year which acknowledges the existing shortfall in meeting forecasted demands.

While over half of the forest estate is publically owned (397,805 ha public/ 53%), it is primarily the private estate which presents opportunities for expansion.

There are approximately 17,000 forest owners in Ireland; the vast majority of whom are new to forestry and therefore have limited knowledge of managing their forests.

Objective of Forestry Schemes:

The objective of the forestry programme in Ireland is to develop the industry to a scale and in a manner which maximises its contribution to national economic and social well-being on a sustainable basis and is compatible with the protection of the environment.

Recommendations

- Forestry, as a viable farm enterprise, should continue to be supported on an equal footing with other farming sectors.

- A forestry advisory service should be part of any national forestry program. Forestry is still very much at a developmental stage in Ireland with the inexperience of forest owners being a major issue both pre and post-planting.

- The existing forestry schemes should continue to form the back bone of support for forestry. This includes support for the afforestation of land and annual premium payments to provide interim income. This is essential due to the long-term nature of forestry.

- Support should be provided for the management of forests (Woodland Improvement) and the provision of infrastructure (roads) is essential to ensure development of the resource.

- Funding should be available to build knowledge capital through forest discussion groups, forest owner groups, training and education. The Teagasc Forestry Development Department has actively promoted and facilitated the development of forest owner groups through the ongoing provision of advisory, technical and organisational support. These groups present huge potential for social capital; group learning and discussion, group thinning, and for some; business development. They provide an ideal vehicle for imparting training and encouraging optimum use of the resource that is farm forestry.

- Agro-forestry (AF). Agroforestry covers a range of production systems which mixes trees with crop/animal production. The positive effects overall are an increase in the productivity of the land area. Combinations of trees with crops have been documented to result in a 20 to 40% increase in wood biomass plus agricultural products from a given area. Combined production is improved because of (a) better use for available light over the whole year on a given area and (b) better nutrient capture by deeper rooting trees.

- Growing of mixed forests - to date support for forestry funded predominantly monoculture plantations. Although this is economically sound practice, there is a potential risk in the context of environmental impact or indeed disease outbreak. Mixed forests are more sustainable economically, socially and environmentally.

- The development of tree improvement in the context of disease resistance should be supported. In order to improve timber quality. Disease resistance research and development is vital and must be specific to geographical areas.

- Support to forest owners affected by outbreak of tree diseases and other biotic and abiotic risks - in the context of recent outbreaks of Ash dieback and Sudden Oak Death, affected areas very often require destruction and replanting.

- More flexibility within schemes for objectives other than timber is desirable to encourage multiple use forest management e.g. tourism, environment, energy.

- Schemes to cater for sites with environmental designations / sensitivities / unenclosed land.

- Under current forestry support schemes some potential sites are not eligible for grant support due to environmental constraints. A more flexible approach on sensitive sites would make more land available for forestry while carefully taking environmental issues into account.

AXIS 3&4 – ENHANCING QUALITY OF LIFE

The resources devoted to axis 4 (LEADER) contribute to the priorities of axes 1 and 2, and in particular to axis 3, but also play an important role in the horizontal priority of improving governance and mobilizing the endogenous development potential of rural areas. Axes 3 and 4 focus on the inclusive growth element of the Europe 2020 objectives of Smart, Sustainable and Inclusive growth and are aimed specifically at the CAP general objective of "Balanced territorial development". While the focus of these axes is on social inclusion and economic development in rural areas, the knowledge transfer and innovation component of these axes is cross-cutting across all of the Pillar II specific objectives of:

Competitiveness and farm viability;

Food chain organisation;

Ecosystem enhancement and management;

Developing a carbon resilient economy; and

Social inclusion and economic development in rural areas.

What should be the objectives of future rural development policy?

Support under axis 4 offers the possibility (in the context of a community-led local development strategy building on local needs and strengths) of combining all three objectives of competitiveness, environment and quality of life/diversification but also:

- to assist in the new market orientated CAP and be consistent with other EU policies- economic cohesion and environment
- create sustainable jobs, innovation and services in rural areas
- encourage diversification of the rural economy
- create rural vitality which is closely underpinned by agriculture
- encompass the main characteristics of LEADER in rural development
- build on developing partnerships between Teagasc and LDC's to facilitate the provision of services to a wider network of rural dwellers and farm families
- encourage farmers to identify and develop 'second order benefits' from previous rural development and environmental schemes.

How can the RD policy instruments be made more effective?

- Support the multiple roles of farming and agriculture as the provider of public goods such as:
    - the environment, rural landscape and its biodiversity
    - historic features of the rural landscape
    - literary and musical traditions
    - rural cuisine
    - retention of farmland features and
    - architectural features in rural villages.

- Support for communication infrastructure in rural areas to facilitate tourism and local business start-ups
- Support infrastructure to facilitate this multiple role - infrastructure to include rail, roads, tourist trails
- Assist in providing development and marketing opportunities for this multiple role
- Support the development of second order benefits – not just for their intrinsic value but the potential they can offer. Environmental schemes up until now have aimed at environmental objectives through paying for environmental management actions; 'second order benefits' have not been considered, e.g. building on environmental benefits generated as a result of previous rural development schemes i.e. the production of food products within a particular setting or habitat using traditional methods of production.
- Move from prescriptive type objectives and prescription based developments and give support to initiatives which are linked to a particular areas ensuring differentiation, based on a particular settings or methods of production e.g. Burren Lamb (e.g. this would allow organic produce to be further differentiated. Supply of appropriate accommodation in particular areas with established amenities and facilities should also be supported - in other words the initiative would reward the desired result rather than a product in isolation.
- Support social & economic synergies.

How can the management and implementation of Rural Development instruments be improved?

- Setting clear and measurable objectives which are needs based
- Objective led strategies will ensure that outcomes can be measured
- Quantifiable indicators - economic, environment and socio economic, incorporating built–in value for money filters

Significance of rural policy to cohesion

Pillar II of the CAP has a significant role to play in delivering territorial cohesion but must take account of both regional and local conditions, characteristics and requirements when devising development strategies.

13. Promoting the Economic Development of Rural Areas

Ireland delivers Axis 3 measures (Quality of Life in Rural Areas and Diversification of the Rural Economy) using the Axis 4 (LEADER) approach. Activity levels under Axes 3 and 4 of the programme have substantially lagged behind those seen to date under Axes 1 and 2 and this reflects the delay in commencement of measures under these axes until mid- 2009. The slow progress on Axes 3 and 4 reflects the late commencement of activities but also a number of challenges in relation to the operationalisation of the Leader approach and the capacity of the Local Action Groups which have potential implications for the attainment of targets under this part of the programme (Indecon, 2010).

Axes 3 and 4 of the Rural Development Programme Ireland registered its first full year of expenditure in 2010 and spending increased significantly in 2010, admittedly

from a very low base in 2009. However there was expenditure of around €48 million under Axes 3 and 4 of the RDP in 2011. This marks around 45% of the total expenditure (€108.6 million) to date. Projects funded under this part of the RDP support sustainable development, a long-term process that requires time in order to fully assess the impact of the funded interventions (DAFM, 2013).

Rural Development

Former LEADER companies now Local Development Companies (LDC's) are currently the local structures responsible for the administration of funds for LEADER-type actions under Axis 3 and 4 of the RDP.

LEADER characteristics

- Area-based approach; bottom-up ; partnership and Local Action Group structure;
- Innovation;
- Integration;
- Networking and cooperation between areas; and local financing and management.
- Transferability; and
- Sustainability.

The RDP measures administered by LDC's which have had the greatest impact on rural development include the following:

Tourism

Tourism is a critical area for Ireland and support under this measure is important for the future of rural tourism in Ireland. Just over €5m expenditure was registered in 2011 under Encouragement of Tourism activities with support provided for a wide range of tourism actions. In total 390 tourism actions were supported with an additional 525,768 tourist visits recorded. This increase reflects the need to look to the natural resources of rural Ireland to support the development of Ireland as a premier tourism destination. Funding in 2011 supported initiatives in the areas of improvement and development of tourism infrastructure, support for collective marketing, networking and promotional activities in specific areas of interest, and the measure has provided significant support to the development of new festival offerings (DAFM, 2013).

Diversification

Support under the Diversification measure showed a slight increase in 2011 with spend of €1.3m registered while support under the Business Creation and Development measure is still low with just under €4m registered expenditure for 2011. This reflects the difficult economic environment and the challenges that continue to face rural entrepreneurs. This support along with enterprise support provided under other economic measures generated just over 650 jobs in rural communities in 2011 (DAFM, 2013). Humphreys (2011), cites initiatives such as LEADER as being particularly important in promoting the agenda of innovation.

Training and Information

A significant increase in expenditure approved under the Training and Information measure reflects the need for support for this kind of activity in rural areas. Support under this measure facilitates the provision of valuable learning opportunities for rural dwellers not only to build their capacity to fully participate in their own development but also to provide the information and training necessary to ensure the sustainable development of the rural economy into the future. Investment in training in 2011 included training in a variety of areas such as rural tourism, ICT, renewable energies and agri-diversification and resulted in 17,121 people receiving 9,637 days training in 2011 (DAFM, 2013).

Social Inclusion

Since January 2010, the Local and Community Development Programme (LCDP) aims to tackle poverty and social exclusion through partnership and constructive engagement between Government and its agencies and people in disadvantaged communities. The implementation of those elements of the programme which are delivered by Local Development Companies (LDC's) is managed by Pobal, whose role and functions include programme guidance, assessment of strategic and annual plans, financial administration, programme monitoring, and technical support. These supports are targeted at individuals who are unemployed with particular focus on the long term unemployed; disadvantaged young people and the underemployed i.e. seasonal workers/low income farm families etc.

In the Framework of the LCDP, the LDC's have submitted plans for Social Inclusion to Pobal (June 2011) to address the following objectives:

- Promote awareness, knowledge and uptake of a wide range of statutory, voluntary and community services
- Increase access to formal and informal educational, recreational and cultural activities and resources
- Increase people's work readiness and employment prospects
- Promote active engagement with policy, practice and decision-making processes on matters affecting local communities.

According to the Pobal report on the LCDP for 2011, the programme exceeded most Programme targets in 2011, with the exception of beneficiaries participating in labour market training and individuals supported to employment (which was compensated for by an over achievement on "individuals supported into self-employment"). LCDP caseload numbers have increased significantly by 56% between 2007 and 2011. This is despite significant budget reductions made to the programme in 2009 and 2010 (Pobal, 2012).

The LDCs have delivered numerous actions and initiatives that are designed to impact on rural communities from enterprise initiatives to supporting the creation of employment and an entrepreneurial culture, outreach and access to services and training, and addressing isolation and rural social exclusion. In 2011, 38 of the companies were operating in rural areas (including small rural towns), where 62% of the total LCDP allocation to the delivering companies was spent (Pobal, 2012).

Challenges for Rural Development

Evidence of LDC participation in localised interagency responses is commonly cited in end-of-year reports. These actions range from information and awareness raising events to provision of accredited training based on needs identified in the area, however, a key challenge for these components of the RDP has been to attract significant project proposals during the current recessionary climate and ensuring that the LEADER Local Action Groups (LAGs) have the infrastructure and capacity required to accelerate the allocation of funding to projects and actions so as to meet the programme targets.

There are a number of significant challenges that LDCs experience in implementing LEADER and LCDP in rural areas. Many of the innovative projects and enterprises that are eligible for funding under the LEADER programme are, by definition, outside of conventional agriculture and fisheries (Heanue et al, 2010) and as such, represent uncharted water for rural dwellers. The need for applicants to have matching funding was considered to be a major challenge for many potential applicants. Other challenges included access to services and the dissemination of information to individuals and communities in remote rural areas.

The National Rural Network has acted as a valuable source of information and as a neutral forum for exchange of ideas and feedback on the RDP and it is hoped that it can continue to play this important role. (Indecon, 2010)

As part of the wider reform of local government announced in October 2012, the local development structures will be brought within the control of local government. According to Humphreys (2011), this is not a scenario favoured by the local development sector as it is considered that the sectors (local development v. local government) operate with very different institutional cultures.

Some impacts of Rural Development funding on the Rural Economy

Many successful projects have been established and funded through the RDP which will have lasting impacts on rural areas. A sample of these is presented below. These particular initiatives are all quite simple in concept; participants do not require educational qualifications; the initiatives involve an integrated local partnership approach, the benefits accrue to rural dwellers and they are representative of the type of initiatives which can incrementally have a lasting impact on the rural economy.

- Outreach is a key feature of any rural strategy in engaging with rural communities. Many rural LDCs provide outreach clinics, to service all parts of the county and ensure access to their services. Galway Rural Development is indicative of this and delivers their employment mediation service on an outreach basis in three different locations.

- Another example of an innovative rural outreach service is the ‘information mobile unit’ developed by the LDC in Roscommon which attends Castlerea and Elphin Marts. This one-to-one confidential service provided smallholders and low income rural households with an opportunity to access information on issues such as welfare, income supports, rights and entitlements, training/employment opportunities and much more.

- Both Galway Rural Development and Roscommon Partnership identified training opportunities based on consultation with local employers in the emerging wood harvesting sector, and as a result developed local tailored training programmes. The core element of training was on chainsaw operation in timber harvesting. The programme was delivered from and in co-operation with Teagasc staff in Castlerea and co-ordinated by the LDC. The participants gained NPTC City & Guilds certification in chainsaw operation and FETAC Level 5 certification in Health & Safety, and Occupational First Aid.

- Another example of tailored supports is the Crossroads Programme hosted by Monaghan Partnership in co-operation with the Rural Development Programme and Teagasc, which explores in a group setting how to get the most from the farm holding and examines opportunities off farm.

- Breffini Integrated Ltd have assisted new and existing small scale food producers to maintain and develop their business - this led to a Farmers Market being set up in Cavan Town every Friday with eight stallholders supplying an extensive range of food. To complement this, LCDP funded a Food Handlers HACCP training programme for those working in or seeking employment in the food business.

- In Westmeath, the RDP funded a specialist food consultant to assist local food producers. A Westmeath Food Network was established. This led to initiatives, such as two Christmas Fairs and 'The taste of County Westmeath' event (Pobal, 2012).

Recommendations

The proposal for the RDP 2014-2020 states clearly that measures funded must contribute to the objectives of innovation, environment and climate change mitigation and adaptation which are considered cross cutting. One of the recommendations that arose as a result of consultation with interested parties on the RDP 2007-2013, was that the proposed 2014-2020 RDP would include reinforced strategic targeting for rural development policy in better coordination with other EU policies. New measures proposed include: Farm and business development; Co-operation – on and off farm partnerships; Producer groups; and Support for areas facing Natural or other Specific Constraints. Given that the primary focus of these objectives is to facilitate diversification of farms and to enable wider restructuring to happen in the sector, Teagasc recommends that a guaranteed percentage of Axis 3 and 4 funding should be earmarked for farm households.

If activities under the forthcoming RDP are to be cross-cutting and facilitate innovation, the measures adopted in the Irish Rural Development programme will need to allow for a more integrated cross-thematic approach to rural development and will also need to allow more flexibility around the fostering of innovation. Support under axis 4 offers the possibility, (in the context of a community-led local development strategy building on local needs and strengths) to combine all three objectives of competitiveness, environment and quality of life/diversification.

Multi-objective integrated policies

Within the current policy context an important cross-cutting objective is the provision of incentives to reduce greenhouse gas emissions. From the perspective of agriculture and forestry, this may include incentives to develop renewable energy or facilitate the provision of carbon offsets through the planting of forestry. The agricultural, forestry and agro-forestry sectors are multi-functional with multiple objectives. To be efficient, policies in these sectors should also be multi-objective, helping to provide not only economic outcomes, but providing for improved environmental and social outcomes.

Frequently gains from a policy intervention can be greater when actions are coordinated as opposed to individual uncoordinated actions. These include the delivery public goods such as landscape, biodiversity or environmental services, integrated food and forestry supply chains and producer groups. These gains can be considered economies or ecologies of scale. It would therefore be useful to incorporate features within rural development policy that would encourage greater cooperation and coordination of measures and the promotion of greater social capital.

- Integrating land-use, environmental and rural development actions

  Significant scope exists to achieve added value from schemes such as the Agri Environment Options Scheme (AEOS) and the Rural Environment Protection Scheme (REPS) which are funded under Axis II of the RDP. These schemes currently facilitate the generation of environmental public goods from private lands. However, additional outputs could be achieved if support was provided for farmers in these schemes to go one step further and link these environmental public benefits to community led LEADER type agri-tourism ventures. Examples of this type of cross-cutting approach were funded by LAG Westerkwartier in the Netherlands and presented at the 2009 Rural Development conference in Ireland. These included organising groups/clusters of farmers to adopt environmental measures such as hedgerow planting/management and /or measure under the Water Framework Directive such as restrictions on herbicides/pesticides in the vicinity of watercourses. The group nature of the project meant that the environmental dividend was greatly enhanced and it also put in place the building blocks for subsequent community/group driven agri-tourism activities such as cycle paths and river kayaking.

  An integrated multi-functional approach between agri-environment schemes, LEADER funded tourism/recreation/community activities and forestry schemes would encourage a greater diversity of environmental and rural development benefits and would in turn deliver better value for money from these schemes.

  Support for biodiversity corridors between forests would deliver enhanced environmental objectives to both agriculture and forestry. Close-to-nature forestry supports which generate the need for the use of contractors with specialist and traditional skills can lead to environmental benefits and additional indirect employment benefits resulting from increased tourism and recreational opportunities.

- Generating Added Value from Second Order benefits

Environmental schemes up until now have aimed at realising environmental objectives through paying for environmental management actions. A move from prescriptive type objectives and prescription based developments to support to initiatives which are linked to a particular area can result in 'second order benefits' e.g. the production of food products within a particular setting or habitat using traditional methods of production. This would allow for differentiation of products based on a particular setting or method of production e.g. Burren Lamb. In the UK, DEFRA (Department of Environment Food and Rural Affairs) reported an increase of 8-12% in price for produce carrying the LEAF label. (Linking Environment and Farming) label (DEFRA, 2012). France has differentiated cheese on the basis of altitude, plateau, open space, hedges, woods, mountain pasture, while in Italy there are children's food products which are marketed as coming from specific farms in low impact areas. Support and encouragement for second order benefits would allow for the further differentiation of both organic products and artisan foods. There would also be a need to assist in providing development and marketing opportunities for these multiple benefits.

Knowledge transfer and capacity building

An important component of the policy framework will be knowledge transfer and capacity building. There is some evidence that participation rates - particularly by farmer stakeholders - have been low for rural development policies. Mechanisms such as capacity building and human capital formation should be employed to improve the targeting and generate wider uptake of these policies. Capacity building is also important in relation to modernisation and improved competitiveness.

Greater capacity building using an integrated partnership approach to service delivery:

(a) Farm family support services

In many cases rural LDCs have cited that the present economic situation has left rural dwellers in financial difficulty and Teagasc research shows that the number of viable farms is dropping and the number of economically vulnerable farms has risen sharply since the economic crash (Teagasc National Farm Survey, 2011). A large number of farm families are already familiar with the network of Teagasc local offices throughout the country. Synergies could be developed between Teagasc and other organisations such as Pobal, Fás, VEC's, community enterprise agencies and Social Welfare offices to provide advice to vulnerable farm families. LDCs currently provide information and support in assisting access to Farm Assist to supplement family income. Such initiatives are having an unquestionable impact on the rural economy and strengthening the future sustainability of rural families. However, Teagasc could contribute to the impact of this service by facilitating the extension of these services to a much wider number of vulnerable farm families.

One such facility was set up in Scotland in recent years. Some of the services and support offered by UTASS (Upper Teesdale Agricultural Support Services Ltd) are as follows:

- Provision of venue & outreach facilities for a range of agencies & organisations

- Practical support with the completion and submission of complex forms and paperwork, including awareness raising re: CAP Reform regulations
- Production and dissemination of regular briefings consisting of essential information distilled and de-jargonised from DEFRA, EU etc. and pertinent to the running of livestock based farm businesses
- Topical presentations & awareness raising events
- Support and training in setting up of sustainable methods of dealing with on farm paperwork, including the computerisation of farm records
- Various training courses based on locally identified needs
- Provide outreach facilities

(b) Increase farmer participation in rural development programmes using an inter-agency partnership approach towards delivery of objectives

Structures could be put in place that would allow for knowledge transfer and innovation objectives which would be cross-cutting across a number of objectives by putting together integrated packages of information and training that would be aimed specifically at meeting the needs of farm families. This would allow for a more integrated approach to the planning and delivery of actions between organisations such as Teagasc and LDC's. There are already many examples of successful collaborations. Such structures would also be valuable to enhance the streaming of training activities to suit the educational needs/stage of readiness for business etc. Teagasc is in the process of collating information on the training and development needs in rural areas from recently conducted surveys of participants at its nationwide series of Farm Diversification Options courses.

Given Teagasc's extensive infrastructure and close contact with the farming community and particularly their clients, Teagasc should act as a service supplier to LEADER companies for schemes and services targeted at farm families, particularly in the areas of:

> Innovation: Focus on increasing the capacity of farmers to adopt new technologies and ways of working on their farms through increased emphasis on farmer education, so the capacity of farmers to innovate is enhanced. The innovation studies literature acknowledges that the majority of innovations in most sectors, including agriculture, consist of incremental not radical changes (Fagerberg, 2005). Heanue and Macken Walsh (2010) report that 25 percent of farmer respondents who were surveyed in 2007, were engaged in some sort of innovative activity – in other words, trying some change that they hadn't tried before – in an attempt to improve their farm's performance.
>
> Knowledge transfer: Give increased emphasis to agricultural knowledge transfer that focuses on areas outside of technical agriculture such as new ideas generation, farm diversification options, farm financial skills, off-farm business skills, succession issues and farm safety. Investment in education, training and extension for farmers is also required.
>
> Coordinated or cooperative action/Networks/Clusters: Support for networks would more effectively target vertical knowledge transfer to either geographic

groups or thematic groups but would also facilitate horizontal learning and capacity building between disparate groups in rural areas. This is of particular importance where individuals are innovating or diversifying into a new venture, or undertaking a new technology. Examples such as the County Clare Wood Energy Project - an example of a successful partnership between Teagasc and the Clare Local Development Company - show how the clustering of disparate farm forest owners can build a capacity to co-ordinate timber harvesting to supply local wood energy and timber markets. This approach would also have particular relevance to develop local expertise in sectors such as artisan food and rural tourism.

Developing Rural Tourism: The development of tourism in rural areas has the potential to increase tourist flows to less well known tourism destinations. A partnership approach between local and state agencies (LDC's, Local Authorities, Fáilte Ireland, Tourism Ireland, Teagasc, DAFM) and private operators is necessary for the exploitation of the potential of tourism in these areas. A Rural Tourism Partnership (RTP) could engage in a programme of joint actions targeted at developing and marketing rural tourism designed for specific market segments as well as the general tourist market. Branding, training, mentoring and resourcing local rural tourism groups would be key elements of the support provided through the work of the overarching RTP. Successful initiatives to date have involved the development of local rural tourism networks, local tourism coordinators or community tourism centres such as that established in Roscommon to promote tourism in the county. Such local initiatives can overcome the challenges of the dispersed location of rural tourism enterprises; micro nature of some of the developments; the limited marketing resources and the lack of a critical mass which restricts expansion and growth. This structured approach would also help to overcome the serious challenge of unapproved tourist accommodation which accounts for 66% of B&Bs, 24% of self-catering and 29% of hotels (Úna Bhán, Tourism Survey, Co. Roscommon, 2011).

Challenges and opportunities in developing Rural Tourism

Experience from other European countries has shown that successful rural tourism must involve the activation of the countryside capital, including natural resources (landscape, wildlife, air quality etc.) and cultural resources (foods, crafts, festivals). In Ireland, this would mean building tourism around historic features of the rural landscape; literary and musical traditions; rural cuisine; the retention of farmland features and architectural features in rural villages and ensuring a supply of appropriate accommodation in areas with established amenities and facilities rather than building around a product in isolation.

In Ireland, the success of the Great Western Greenway provides a facility for new and existing businesses along the 42km trail from Westport to Achill to leverage this infrastructure and develop new and exciting experiences along the way. The "Gourmet Greenway" is a food trail devised by Mulranny Park Hotel, in association with several Mayo food producers, to showcase artisan food producers in the vicinities of Mulranny, Newport, Westport and Achill.

However, to date, there has been quite a low level of engagement from Irish farmers in the area of rural tourism. A number of challenges must be addressed if this is to be reversed. These include the difficulty of monetising farm tourism at individual farm level; the reluctance of some farmers to give public access to their property; problems associated with access to land in group/joint ownership like commonage, bogs, hills/mountains, lake and sea shores. Despite the potential benefits from walking based recreational activities, public access to the countryside for walking activities in the Republic of Ireland and many other countries is often restricted. This is a serious constraint on tourism development especially in rural areas where it is now widely recognised that rural based recreational activities have the potential to deliver significant economic benefits through tourism based revenue and as such can be an important tool for rural and regional development (Moore and Barthlow, 1998; Lane, 1999; Vaughan et al., 2000; Fáilte Ireland, 2005). The results of a survey conducted by Howley et al. (2010) suggest that a significant number of landowners are willing to allow public access provided there is no personal cost to them. More generally, the analysis suggests that there is significant scope for policy intervention to improve public access to the countryside. There is also a growing demand for wet weather and water based activities, however, overland access to lakes and rivers can present a barrier to development.

In the UK, market based approaches where farmers are compensated for public access provision, have been employed as a solution to restrictions on access to farmland. The principle here is that a statutory agency compensates landowners for both access to their land and the development / maintenance of walking trails. Some examples of such initiatives include the Countryside Stewardship Scheme in England and the Tir Cymen Scheme in Wales. Initiatives under the Countryside Stewardship Scheme in the UK have had a limited impact on the provision of permissive footpaths and open access land as remuneration in the scheme is based on an 'income foregone' basis rather than an economic rent for the service provided (Mulder et al., 2006). The revenue lost – for instance in the form of animal or crop production - is replaced by the subsidy for increased public access. As such, the landowner is technically no better off in financial terms for allowing increased access which in turn provides little incentive for them to allow public access for recreational activities. The Woodland Welcome scheme, in contrast to the Countryside Stewardship Scheme, offered landowners remuneration based on an economic rent rather than just on the basis of income foregone (Mulder et al., 2006).

To encourage Irish farmers and land owners to allow access to their farms and land and to facilitate the development of clustered or shared interest features which would involve a number of land owners, financial support would need to be made available. A suggested Farm Tourism "Options" Scheme would encourage Irish farmers to allow controlled access by visitors to their farms to facilitate access to clustered or shared interest features (bogs, hills, rivers shoreline and commonage) involving groups of farmers. To achieve high engagement by farmers, such a scheme would need the involvement of the Department of Agriculture, Food and the Marine (DAFM) and Teagasc.

Tourism in rural areas can also provide opportunities in the area of job diversification, providing farmers, local businesses and even communities with the opportunity to

branch out and diversify in to other economic areas with a view to making their businesses more economically sustainable. An example of this being the Burren Ecotourism Network, a pilot project supported by Fáilte Ireland, Burren Connect, Clare County Council and Shannon Development. This project brings together 18 businesses, with another 20 about to complete training, many of whom may not traditionally have been involved in tourism in the area. Working together these businesses have now developed a number of ecotourism packages to offer to visitors in the Burren, ranging from farm tours/ walks, to food experiences and learn-to experiences.

As well as financial support, farmers and rural entrepreneurs would need advisory and business mentoring support. Local capacity building and networking would be required to combat the perceived poor communication channels between the tourism industry, visitors, tourists, service providers and the farmers. Support for rural tourism would generate multiple benefits similar to those achieved as a result of past agri-environment schemes.

Gender balance

Many farmers are not accustomed to creating products/services or to making independent decisions in dealing directly with the market. Macken Walsh (2010) suggests that the poor economic viability of many family farms contributes furthermore to a general reluctance towards entrepreneurship, which inevitably requires capital, investment and risk. Feelings of disillusionment and hopelessness may also hamper innovative self-led rural entrepreneurship.

Farmers' occupational identities are strongly rooted in agriculture and most farmers are not experts in the service-based, processing and marketing activities that are conventionally funded by LEADER. Moreover, some agricultural and rural development programmes target male farmers in isolation from their families. However, within increasingly diverse farm households there are members (farm holders, spouses and farm offspring) who have preferences and capacities to engage in alternative rural entrepreneurship. As such, the diversity of farm household members (and not farm holders alone), must be specifically targeted by contemporary rural development programmes (Macken Walsh, 2010).

14. Cooperation Activity

Rural artisan producers face particular difficulties in *accessing markets* for reasons including distance from the market, small scale, inconsistency in supply, and insufficient skills and resources. Cooperation activities, such as those possible under Article 36, can help producers overcome such constraints through providing structures that facilitate short supply chains and local market access as well as a supply base and certification and branding schemes to facilitate wider market access.

Cooperation types that have already been piloted or established in Ireland, i.e. producer groups and cooperation activities for cooperation in certification and branding, should be eligible for support. However consideration should also be given to more innovative types of cooperation activities that have not yet been tried in an Irish context e.g. federated cooperatives or umbrella cooperatives of producer

groups/small cooperatives. Allowing provision for applications from non-specified, experimental cooperation's is also be desirable as it would allow new and innovative cooperation types suitable to Irish conditions specifically to be fostered and piloted by Article 36.

In all cases, only newly formed cooperation entities should be eligible for support, i.e. the entity should be newly registered as a cooperation entity or it should be seeking new registration with the support of Article 36. (As well as serving as an unambiguous eligibility criterion, registered status provides an important regulative and protective function to the involved parties and their relatively uniform registered status allows for the design and application of strategic support, policy provisions and planning tools).

Eligible costs, or the rates of support available under each heading, may vary according to cooperation type as the supports that are of critical, major and some importance will vary. In the case of producer groups, critical eligible costs should include (a) animation, training and networking, and (b) promotion. Planning and strategising supports are of major importance whilst support for running costs and direct implementation costs/innovation is also important. In the case of cooperation for certification and branding, promotion costs should be critical eligible costs. Planning and strategising is in the major importance category whilst support for animation, training and networking, running costs and direct implementation costs/innovation is also important.

REFERENCES

Bogue, P. (2013) Impact on Farmers of Participation in Dairy Discussion Groups. Presentation made at the launch of the Independent Evaluation Report by Broadmore Research on the Impact of Participation in Teagasc Dairy Discussion Groups. Event Proceedings. Teagasc.

Bottcher, K., Eliasson, A , Jones, R., Le Bas, C., Nachtergaele, F., Pistocchi, A., Ramos, F., Rossiter, D., Terres, J.-M., Van Orshoven, J. & Van Velthuizen, H. (2009) Guidelines for application of common criteria to identify agricultural areas with natural handicaps. Office for Official Publications of the European Communities, Luxembourg.

Boyle, G.E. (2002) The Competitiveness of Irish Agriculture, Report for the Department of Agriculture and Food, The Irish Farmers Journal, Dublin.

Brown, I., Towers, W., Rivington, M., Black, H.I.J., Booth, P. & Barrie, D. (2008) The implications of climate change on land capability for agriculture. Report to the Scottish government. James Hutton Institute, Aberdeen, Scotland.

Bureau, J.C. and Mahé, L.P. (2012) CAP Reform Beyond 2013: An idea for a longer view. Studies and Research No. 64. Notre Europe.

Butcher, S. (1998) Where Do Farmers Get Their Information? Primary Industry Management, 1(2), pp. 12_15.

Cooper, T. Hart, K and D. Baldock (2009) Provision of Public Goods through Agriculture in the European Union, European Institute for Environmental Policy, http://wdl.wzw.tum.de/fileadmin/user_upload/Bilder/Aktuelles/IEEP.report_en.pdf

CSO (2012) Quarterly Household Budget Survey – quarter 4 2011. www.cso.ie /en/media/csoie/releasespublications/documents/labourmarket/2011/qnhs_q42011.pdf

DAFM (2013) Annual Progress Report of the Rural Development Programme 2007 – 2013 Year 2011. (Draft – unpublished)

DEFRA (2012) Green Food Project Conclusions www.defra.gov.uk/publications/files /pb13794-greenfoodproject-report.pdf

Dexter, A.R. (2004) Soil physical quality part I. Theory, effects of soil texture, density, and organic matter, and effects on root growth. Geoderma, 120, pp. 201–214.

Donnellan, T., Hennessy, T., Keane, M. and Thorne, F. (2011) A Study of the International Competitiveness of the Irish Dairy Sector. Rural Economy working paper series. http://www.teagasc.ie/publications/2011 /1004/ CompetitivenessofMilk Productionweb230611.pdf . Teagasc.

Eurobarometer (2012) What Europeans think of food security, food quality and the relation between agriculture and the countryside, Special Eurobarometer 389 / Wave EB77.2 – TNS Opinion & Social.

Earl, R. (1997) Prediction of trafficability and workability from soil moisture deficit. Soil & Tillage Research, 40, pp. 155–168.

Eliasson, A., Jones, R.J.A., Nachtergaele, F., Rossiter, D.G., Terres, J.-M., Van Orshoven, J., Van Velthuizen, H., Bottcher, K., Haastrup, P. & Le Bas, C. (2010) Common criteria for the redefinition of Intermediate less favoured areas in the European Union. Environmental Science & Policy, 13, pp. 766–777.

European Commission. (2009). Aid to farmers in less favoured areas. Available at: http://ec.europa.eu/agriculture/rurdev/lfa/index_en. htm; (accessed 23 June 2011).

Fáilte-Ireland (2005) Special interest tourism plans 2005. http://www.failteireland.ie. Fáilte Ireland. Dublin.

Finn, J.A. and Ó hUallacháin, D. (2011) A review of evidence on the environmental impact of Ireland's Rural Environment Protection Scheme (REPS). Biology and Environment: Proceedings of the Royal Irish Academy
112B. DOI: 10.3318/BIOE.2011.19.

Fitzgerald, J.B., Brereton, A.J. & Holden, N.M. (2008) Simulation of the influence of poor soil drainage on grass-based dairy production systems in Ireland. Grass and Forage Science, 63, pp. 380– 389.

Heanue, K. Macken-Walsh, A. and Maher, P. (2012) (Eds) Teagasc Best Practice in Extension Services Conference - Supporting Farmer Innovation. Teagasc Oak Park, ISBN: 1-84170-593-4.

Heanue, K. and Macken Walsh, A. (2010) The Rural Development Programme (2007-2013) and Farmer Innovation: A Review to Date and Look to the Future. RERC Working Paper Series 10-WPRE-07. Teagasc.

Hennessy T., A Kinsella, G Quinlan, B Moran (2012) National Farm Survey 2011, Teagasc, Oak Park.

Hennessy, T. and Heanue, K. (2012) Quantifying the Effect of Discussion Group Membership on Technology Adoption and Farm Profit on Dairy Farms, Journal of Agricultural Education and Extension 18.1, pp. 41-54.

Howley, P., Doherty, E., Buckley, C., Hynes, S., Van Rensburg, T. and Green, S. (2010) Public access to the countryside: An exploration of the costs and benefits of farmland walking trails. RERC Working Paper Series PUT 10-WP-RE-06. Teagasc.

Hudson, G. & Birnie, R.V. (2000) A method of land evaluation including year to year weather variability. Agriculture and Forest Meteorology, 101, pp. 203–216.

Humphreys E. (2011) LD in Ireland: From Innovation to Stagnation…but what next in times of crisis? http://ldnet.eu/LD+in+Ireland&structure=The+Local+Development+E-book Oct 2011.

Indecon (2010) Mid-Term Evaluation of the Rural Development Programme Ireland. (2007-2013).

Kelly, E., Heanue, K., and O'Gorman, C. (2012) Adopting Best Management Practices: The Influence of Farm Routines and Capabilities. In Teagasc Best Practice in Extension Services Conference - Supporting Farmer Innovation. Eds Heanue, K. Macken-Walsh, A. and Maher, P. p. 46. Teagasc Oak Park, ISBN: 1-84170-593-4.

Klerkx,L., Hall, A. and Leeuwis, C. (2009) Strengthening Agricultural innovation capacity: Are innovation brokers the answer? UNU-MERIT Working Paper Series. Maastricht, Maastricht Economic and social Research and training centre on Innovation and Technology, UNU-MERIT.

Klerkx, L. & Leeiwis, C. (2008) Matching demand and supply in the agricultural knowledge infrastructure: Experiences with innovation intermediaries Food Policy, 16.

Lane, B. (1999) Trails and tourism: the missing link. http://www.americantrails.org/ resources/economics/TourismUKecon.html (accessed 25/01/06).

Lilly, A. (1999) The use of inverse modelling and dipwell data in the calibration and evaluation of a soil water simulation model. Geoderma, 90, pp. 203–227.

Millar, J. (2010) The Role of Extension for Improving Natural Resource Management: The AustralianExperience. In: Jennings, J., Packham, R. and Woodside, D. (Eds), Shaping Change: Natural Resource Management, Agriculture and the Role of Extension. Australia: Australasia-Pacific Extension Network (APEN), pp. 102-110.

Macken-Walsh, A and Brosnan, K. (2012) The Potential of an Enhanced Cooperation Measure in the EAFRD (2014-2020): the case of Ireland. Teagasc (unpublished report).

Macken Walsh, A. (2010) Agriculture, Rural Development and Potential for a 'Middle Agriculture' in Ireland RERC Working Paper Series 10-WPRE-04. Teagasc.

Miller, A.C., Matthews, A., Donnellan, T., and O'Donoghue, C.,(2011) 2005Agricultural Food SAM (AgriFood-SAM) for Ireland. Trinity College Dublin, 111S Discuussion Paper No. 372.

Moore, R. and Barthlow, K., (1998) Uses of long distance trails. Report of Department of Parks. Recreation and Tourism Management. North Carolina State University, Raleigh, NC, USA.

Mulder, C., Shibli, S. and Hale, J., (2006) Rights of way improvement plans and increased access to the countryside in England: some key issues concerning supply. Managing Leisure, 11(2), pp. 96-115.

Holzman, R and Jorgensen, S. (2001) Managing Risk in Agriculture: A Holistic Approach: OECD. 2009

Pobal (2012) Local and Community Development Programme Progress Report 2011. Pobal.

Ryan, C., Heanue, K. and Devitt, F. (2012) Evolving Innovation Support Arrangements: A Focus on Innovation Brokering. In Teagasc Best Practice in Extension Services Conference - Supporting Farmer Innovation. Eds. Heanue, K. Macken-Walsh, A. and Maher, Teagasc Oak Park, ISBN: 1-84170-593-4.

Riordan, B. (2008) The Net Contribution of the Agri-Food Sector to the Inflow of Funds into Ireland: a New Estimate. Department of Agriculture, Food and Fisheries. Dublin.

Rounsevell, M.D.A. & Jones, R.J.A. (1993) A soil and agroclimatic model for estimating machinery workdays: part I – the basic model and climatic sensitivity. Soil & Tillage Research, 26, pp. 179–191.

Ryan, M., Heanue, K., Clarke, A., and Ni Dhubháin, Á. (2012) The Adoption of a New Forest Practice Needs More Than One Extension Approach. In Teagasc Best Practice in Extension Services Conference - Supporting Farmer Innovation. Eds Heanue, K. Macken-Walsh, A. and Maher, P. p. 21. Teagasc Oak Park, ISBN: 1-84170-593-4.

Schulte, R.P.O., Richards, K., Daly, K., Kurz, I., McDonald, E.J. & Holden, N.M. (2006) Agriculture, meteorology and water quality in Ireland: a regional evaluation of pressures and pathways of nutrient loss to water. Biology and Environment: proceedings of the Royal Irish Academy, 106B, pp. 117–133.

Schulte R. P. O., Fealy, R., Creamer, R.E., Towers, W., Harty, T. & Jones R. J. A., (2012) A review of the role of excess soil moisture conditions in constraining farm practices under Atlantic conditions. Soil Use and Management, 28, pp. 580–589

Shalloo, L., Dillon, P., O'Loughlin, J., Rath, M. & Wallace, M. (2004) Comparison of a pasture-based system of milk production on a high rainfall, heavy-clay soil with that on a lower rainfall, free-draining soil. Grass and Forage Science, 59, pp. 157–168.

Úna Bhán, Tourism Survey, Co. Roscommon, (2011)

Vaughan, D.R., Farr, H. and Slee, R.W. (2000) Economic benefits of visitor spending. Leisure Studies, 19 (2) pp. 12-15.