Submission to the Department of Agriculture, Food and the Marine by the RDS

As part of the Public Consultation on

A discussion document on the potential for Greenhouse Gas (GHG) mitigation within the Agriculture and Forestry Sector

Founded in 1731, the RDS continues to fulfil its commitment to furthering the broad economic and cultural development of Ireland. The goal of the RDS Agriculture & Rural Affairs Foundation programme is to promote Climate-Smart Agriculture in Ireland.

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Summary

The Greenhouse Gas (GHG) mitigation strategy within the Agriculture and Forestry sector must address the twin challenges of climate change and food security. This strategy can be built around Climate-Smart Agriculture, utilising changes in land use to offset increased emissions from the planned expansion of the dairy industry.

Mitigation measures require changes in behaviour by a very large number of individual farmers and land owners with a wide range of managerial abilities, education and skills levels. The factors that will influence behavioural change must be understood and taken into consideration when devising policy measures.

Climate-Smart Agriculture will necessitate the adoption of win-win abatement measures by the majority of farmers together with much more ambitious targets for afforestation. Carbon neutrality will be seriously impacted by the harvesting of farm forestry from 2040 onwards and this must be balanced by a rapid increase in forestry planting targets over the next 5 to 10 years.

To achieve this increase in forestry planting it will be necessary to target land that is currently used for low intensity/low profitability drystock farming in the lowland areas of the west, east and north-west. In addition, a resolution must be found to barriers to planting such as the Hen Harrier issue in the marginal land areas suitable for planting. Additional funding will be required to achieve this increase in acreage planted in the short term but some of this funding could also be released from the current funding devoted to drystock, if the area under drystock can be successfully reduced.

Current research is demonstrating the potential of grassland for carbon sequestration. Ireland, with its very large area of permanent pastures and accompanying hedgerows and field margins, must get adequate recognition for the contribution that these make to carbon sequestration and as carbon sinks.

Climate change research is providing the knowledge around which successful strategies and policies are being constructed and must continue to get all necessary investment and support. Barriers to the adoption of the research based solutions in areas such as genetic selection and feed additives, must be removed and behavioural change encouraged and rewarded. A critical barrier to the adoption of technology is the continually advancing age of farmers and land owners. This issue must be addressed as a matter of urgency since we
have a very large well trained cohort of young people ready and anxious to get involved in farming.

Knowledge transfer and continuing education will play an increasing role in bringing about climate-smart agriculture. Support structures are essential for effective knowledge transfer. The Teagasc Advisory service is the key resource in linking the farming community to the knowledge and training necessary. The number of front line advisory staff has now fallen well below the critical level required to carry out its functions effectively. It must be restored to pre-2008 levels of staffing as a matter of urgency.

Introduction

The Royal Dublin Society (RDS) welcomes the Public Consultation and the opportunity to make a submission on the discussion document on the potential for greenhouse gas mitigation within the agriculture and forestry sector.

The RDS very much appreciates that the document is strongly knowledge based and builds on the significant research effort in Ireland in this area in recent years.

The RDS agrees that “sustainable intensification” of food production is the way forward. A coherent approach to the twin challenges of climate change and food security is necessary in Ireland and internationally. The strong involvement of Ireland in the new voluntary global initiative- the Alliance on Climate-Smart Agriculture- is very commendable. The ambition of developing “a world class agri-food sector, working within a carbon-neutral system of agriculture, forestry and land use” as set out in the NESC vision, is a laudable ambition but will present significant challenges.

The RDS has a long tradition of supporting forestry development in Ireland and is very pleased to see that Ireland is taking a lead in getting recognition of the role that forests play in carbon sequestration and promoting an increase in forestry to offset the impact of the increased output of agriculture as part of a balanced land use policy.

The RDS is very much aware of the different arguments and opinions in the broad area of climate change and on the differences in opinion on what needs to be done. It is clear that warming of the climate system is unequivocal and that human activity is influencing this. We need to build consensus on the
actions that are required, both nationally and by each individual, through an enhanced programme of applied research, knowledge transfer and education. Overall, the RDS supports the clearer focusing of policies and payments under CAP and Rural Development Programmes on climate-smart agriculture and on addressing the increasing age of drystock farmers and the difficulties currently being experienced by many trained younger farmers in gaining access to land.

**Behavioural Change**

While the Teagasc Marginal Abatement Cost Curve, Figure 2.6 in the discussion document, identifies win-win solutions at the national level, their achievement will be challenging. The challenge in generating the gains from Climate-smart Agriculture is in realising behavioural change. Farmer behaviour varies greatly and the underlying skills in relation to mitigation are not the same for all. For example, many mitigation options require levels of managerial ability that may not be present across all farmers. Monetary costs are not the only driver of farmer behaviour.

Each farmer will have an individual trade-off between profit, leisure time and other family and farming objectives, which impact on the adoption of time-intensive mitigation options. The farmer may often not face the damage/cost of greenhouse gas emissions directly or immediately and so will not have an incentive to reduce emissions. There is, therefore, a need for policy levers to incentivise farm specific costs of adoption which include such costs as the capital cost of new equipment.

Achieving Climate-Smart Agriculture needs to be undertaken carefully as it also coincides with a once in a generation opportunity to improve the productivity of the sector.

**Importance of Forestry**

There is a need for forestry to be more widely recognised as a key mitigation for national carbon emissions. Woodland creation is a highly cost effective and achievable abatement of GHG emissions when compared with potential abatement options across other sectors. It is one of the few measures that will provide not only an economic return on money spent on mitigation but also a host of beneficial environmental goods and services, as well as employment benefits e.g. ERSI report states that an increase in forestry to 17% coverage could add up to 23,000 jobs.
Government policy on GHG emissions must be coordinated and resources allocated to areas that will provide the most cost effective measures to mitigate climate change. The current GHG emission limits for Ireland are very challenging and if not met will come at a considerable cost to the exchequer.

Agriculture as the largest contributor to GHG emissions has made substantial reductions in emissions, but further reductions are limited due to technical barriers and physical limitations, all counterbalanced by expansion targets set as part of Food Harvest 2020. Forestry, however, is a proven effective carbon store and sink and unlike other sectors, abatement measures proposed do not conflict with sustainable forest management and will not incur substantial extra costs to existing practices. The forestry sector, complete with its expertise, grant support schemes, infrastructure etc. is well positioned to make a significant increased contribution to offsetting GHG emissions with existing technologies, if given the required commitment and resources.

The expansion of forestry must form part of a strategic land use planning process thereby ensuring that agricultural targets and environmental sensitivities are not undermined or adversely affected. Carbon neutrality will be seriously impacted by the harvesting of farm forestry from 2040 onwards and this must be balanced by a rapid increase in forestry planting targets over the next 5 to 10 years.

There is significant potential to increase the area under forestry in certain regional areas. Additional forestry expansion should be targeted at better marginal land in the Eastern half of the country and parts of the West. Much of this land is currently being poorly farmed by mainly older drystock farmers and yielding very poor levels of profitability, if any. Forestry will provide the best return from these areas and confer not only carbon sequestration but also monetary and employment benefits as well as renewable energy potential.

The case for increased afforestation is compelling but the current rate of annual afforestation of circa 6,000 ha falls far short of the 10,000 ha target, and even further from the required rate of 16,000 ha per annum to achieve 18% forest cover by 2046. There is a need for clear and ambitious targets that promote the opportunities for forestry, not just for environmental reasons but also for the economic potential of the sector.

If forestry is to be one of the key measures in reducing GHG emissions then a significant increase in annual afforestation is required. The forest industry needs a driver to ensure that ambitious planting targets are set and realised.
Definite and challenging targets should be set reflecting not only long term afforestation but also the opportunities for increased biofuels from short term forestry products. Achieving such a target will require incentives and investment but these are certainly preferable to the payment of penalties for exceeding its binding annual limit for non-ETS emissions. The change in land use from poor quality drystock farming to forestry may release some funds that could be diverted towards forestry payments.

The RDS very much agrees with the report on Economic Benefits from the Development of BioEnergy in Ireland to meet 2020 Targets. This report promotes the development of the bioenergy sector that can lead to both economic and environmental benefits. The cost effective harnessing of sustainable, indigenous, renewable energy resources is crucial to reducing our dependence on imported fossil fuels and reducing harmful emissions. It should also become an integral part of the switch from peat to renewable fuels in the remaining power plants that use peat.

Recommendations

Climate Change Action Plan for Forestry

Climate Change mitigation measures stated in broad terms have been incorporated into the Forestry Sector Action Plan 2014-2020. Being the same as those currently required for sustainable forest management, there is a danger that they may not receive the focus required. Climate Change is such an important issue that a separate Action Plan for the forestry sector is warranted. A separate plan would ensure that objectives are clearly stated and prioritised and that specific actions necessary to achieve these objectives are addressed. For example, increasing forest cover is a priority objective and 10,000 ha/year is the aspirational target; and while this will be delivered in part through the various grant schemes, it does not address the barriers or opportunities that exist in achieving this target. The Hen Harrier issue is a case in point. It is currently a barrier to unlocking large tracts of marginal farmland suitable for afforestation. Having the resolution of this issue as an action point will focus attention on what is currently a major obstacle in achieving the annual target.

Similarly, actions to future proof forests against climate change in order to ensure their sustainability need to be identified and prioritised. For example, long rotation lengths (>40 years) mean that planning for changes in species composition, increased wind speeds, incidence of flooding, fire, insect pests and disease outbreaks etc. that are predicted, need to begin now, as forests
planted today may experience different conditions by the time they mature. Recent increase in the incidence of storm damage to forests and the outbreak of Chalara on ash are indicative of the uncertainties that lie ahead.

A separate Climate Change Action Plan for Forestry will ensure that both the sector and the public are clearly informed of the contribution that forests make to the abatement of climate change and also the actions necessary to increase carbon sequestration and mitigate threats to the future sustainability of the forest resource.

**Recognise Importance of Grassland**

There is very little mention of the potential of grassland for carbon sequestration in the discussion document. While much of the research on this topic is ongoing, the sequestration potential of well managed permanent pastures and accompanying hedgerows and field margins is of such importance to Ireland that it deserves a section all to itself. A methodology for giving credit in the national accounting for the carbon sequestered in grasslands and field hedgerows should be devised.

Ireland, via its carbon efficient grass based production system, is amongst the most carbon efficient dairy and meat producers. It is necessary that carbon accounting recognise this advantage. Unlike other more localised environmental issues such as water quality or soil fertility, carbon emissions are substitutable. In other words, food that is produced more efficiently in Ireland reduces emissions globally if it replaces less carbon efficient food production elsewhere.

As a food exporting nation, attributing carbon emissions to Ireland as part of a target for emissions reduction, does not make sense. It makes more sense to aim for the production of food which has the highest carbon efficiency, subject to other environmental constraints, regardless of national specific carbon reduction targets.

**Importance of Research, Knowledge Transfer and Education**

The research carried out to date in the area of climate change and greenhouse gas production in Ireland has been very important in developing a rationale for policy in this area. Ongoing support for research in this area is needed in order to identify ways in which the “emissions gap” might be bridged. Research on changes to diet composition, feed additives etc that can reduce methane output in the rumen should continue and the system within the EU for the approval of effective products must be based solely on scientific evidence and be able to respond more rapidly.
Genetic selection is one of the most effective and efficient ways to increase production efficiency and the carbon content of each unit of output. It may also have the potential to produce ruminants with lower levels of methane production in the rumen. Work in this area needs to be increased at a greater pace and given access to technologies that will enhance and speed up the process.

Ireland is recognised within the EU as one of the few countries that had maintained an effective knowledge system in agriculture over the past 30 years and this has been of enormous benefit to the sector. Having the applied research, knowledge transfer and agricultural education resources located in a single state supported organisation, Teagasc, is seen as a vital resource necessary to bring about the behavioural change that will lead to a Climate-smart Agriculture. However, the number of front line advisory staff in the national advisory service will have declined to some 200 staff by the end of 2015. This will represent a reduction of over 50% since 2008.

Currently the Teagasc advisory services supports 44,000 farmer clients through its knowledge transfer programmes and the dramatic reduction in advisory staff numbers is severely limiting its capacity to make the desired impact. This reduction in numbers of front line advisory staff coincides mainly with the normal retirement of staff recruited at or following Ireland’s entry to the EU in 1973, when the advisory service was expanded to help farmers meet the challenges and opportunities of EU entry and to avail of the training and farm modernisation schemes.

Unless this issue is addressed immediately and as an exceptional measure, the capacity to provide the knowledge transfer initiatives and leadership necessary to bring about the behavioural changes and the adoption of appropriate practices will no longer exist.

Adult training programmes, delivered by the Advisory Service either as part of schemes or as part of new advisory programme initiatives, have been shown to be very effective in bringing about changes in behaviour or attitude and should be included as part of any Climate-Smart Agriculture initiatives.

The number of young people who have achieved at least Level 6 training in agriculture and are interested in pursuing careers in farming is at an all-time high. Unfortunately, the average age of land owners continues to increase by about 6 months each year and is now close to 60 years of age. This problem is most acute on drystock farms and on farms that, for whatever reason, do not
have an immediate successor within the family. Initiatives in the past number of budgets have been of some assistance but have had only limited impact.

An ageing population of farmers, receiving the majority of their income from direct payments and social welfare pensions, are not the people likely to respond to the challenges of climate-smart agriculture and probably represent the greatest risk to the achievement of national targets for mitigation and land use changes. A much more radical approach that understands the concern of land owners while at the same time takes advantage of the security provided by retirement pensions and changes in payment schemes will be necessary.

**Constraining agricultural activity to limit emissions**

While constraining agricultural activity is an option that may have to be considered to close the emissions gap, it is a very undesirable option as Ireland’s grass based dairy and beef production is, by far, the most environmentally sustainable model.

The outcome of this measure would be counterproductive as agriculture production will simply move outside Ireland to areas of the world where GHG output per kilogram is less efficient.

**Conclusion**

Climate change and food security are the most important issues of this century. Ireland has a responsibility in both areas: to be smart and effective in the way we produce higher quality food and to be responsible and diligent in tackling our greenhouse gas emissions commitments.

The need to produce sufficient food to feed the increasing world population, in a carbon efficient matter, should be paramount in future policy development. Climate-Smart Agriculture has a triple win of objectives at its core: increasing farm productivity and incomes; building resilience to the impacts of climate change; while reducing agricultural greenhouse gas emissions.

Agriculture emissions vary greatly across the EU and the RDS strongly believes that Ireland has a unique opportunity to provide the practical and policy leadership to chart a path to implementing Climate-Smart Agriculture in Europe.