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# **Teagasc Forestry Development Programme Peer Review 2013**

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## **Final Report**

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Author:	Peer Review Committee
Submitted to:	Dr. Frank O'Mara, Director of Research
Status:	Final Report

## **1. Introduction**

### **1.1 Teagasc Peer Reviews**

Teagasc is committed to carrying out regular peer reviews of its programmes to: (i) assess whether an effective and balanced scientific programme is being delivered which fulfils the mission of the programme and meets the needs of its stakeholders; (ii) to identify how the programme and operation of the centre(s) could be improved to make best use of resources; and (iii) to provide accountability for public funds expended.

This evaluation report presents the outcome of the Forestry Development Programme peer review held on 20 - 21 March 2013. The peer review was carried out under the auspices of the Director of Research and the Teagasc Business Planning and Performance Evaluation Unit by a Peer Review Committee (PRC) composed of the following experts:

Peter Savill (Chairperson), Eric Norland, Eugene Hendrick, James Bennett, Lance O'Brien, Jane Kavanagh (Secretariat) and James Maher (Secretariat) (Appendix 1).

The objectives of this peer review were to:

- Improve the programme's research and extension quality, including scientific and societal relevance of research, industry impact, research and extension strategy, management and knowledge transfer.
- Provide accountability to the Teagasc Authority, and towards funding agencies, government and society at large.

The panel felt that the peer review process, the self-assessment document and the format of the review were very effective. They requested that they are informed of progress with implementing the recommendations in about a year largely so that they could judge their own effectiveness as Panel members.

### **1.2 Teagasc Forestry Programme**

The Strategic Plan, set out in the document 'Growing for the Future - A Strategic Plan for the Development of the Forestry Sector in Ireland', foresees the output of timber from Irish forests increasing four-fold between now and 2030. The current agreed Programme for Government aims for an afforestation programme of 14,700 hectares per annum. By 2018, there will be over 800,000 hectares of forest: 12% of the total land area and over 50% will be privately owned. There are now over 360,000 hectares of primarily farmer-owned private forests in the country. Food Harvest 2020 puts forward recommendations designed to realise the potential of the forestry and bioenergy sector. The Teagasc Research and Knowledge Transfer programmes are seen as playing a critical role in making this a reality.

The Teagasc Forestry Development Department aims to drive and guide the expansion and development of farm forestry sector in Ireland, in consultation with its stakeholders, so that it can optimize its potential.

The objectives of the Programme are to promote and develop forests and forest management systems that maximise the potential of farm forestry from economic, social and environmental perspectives. These objectives are achieved firstly through the implementation of research projects and knowledge transfer activities in the areas of forest productivity, broadleaf tree improvement and conifer and broadleaf thinning and management. Secondly they are achieved through a comprehensive advisory, training and development programme of support to the farm forestry sector. The farm forestry sector relies on Teagasc for advice, training and research to improve its output, profitability and sustainability.

One of the problems that private forestry faces today is the fact that it is a new enterprise for most farmers. Most farmers would have grown up on a farm or working in some farm enterprise and would have a good working knowledge of livestock and crop production, but not of forestry. Most young farmers would have attended Agricultural College at some stage. There is only one Agricultural College which runs a forestry course. Because of this, farmers need a lot of independent help and advice on forestry. This is why the Teagasc Forestry Service is so vital to farmers.

## **2. Review of the Forestry Programme**

Overall, the panel was extremely impressed with the forestry programme: the quality is high and the department is working well. They were particularly impressed by the dedication, enthusiasm and technical expertise of the staff. The programme has strong leadership and management and the full integration of research and knowledge transfer is an important and positive development and is enabling much more effective translation of research to advisors, whilst also ensuring that researchers are better informed of the industry's needs. The quality of the Knowledge Transfer function is particularly effective, and a small team is managing to deliver a high quality and comprehensive range of supports to the industry. The research team lacks critical mass and will need to adopt a fresh strategy as part of a larger team in order to have a more significant impact.

The panel felt that the programme was highly effective in contributing to policy aims at national level particularly in relation to wood mobilisation from the private sector. The work is highly relevant to the growers and the wider forest industry and is clearly appreciated by stakeholders, as judged by attendance at meetings and other local events.

There are major resource challenges to service the level of work currently and into the future. Given the continuing growth in the farm forestry sector, the programme management will face significant challenges in managing stakeholder expectations. The current moratorium on recruitment will make it very difficult for Teagasc management to help meet these growing challenges by way of additional staff. Given these challenges, there is a need to develop a medium-term (five-year) strategy for the Department.

### **2.1 Reflections on Quality**

The quality of the programme is impressively high in terms of both the research and the knowledge transfer activities and materials. The panel felt that the research on tree improvement needs to be incorporated into a more structured national research and application programme.

There is strong leadership in the programme which is clearly appreciated by the staff and stakeholders.

Some of the research is internationally competitive and makes a significant contribution to the field. The knowledge transfer activities have very high national visibility. The panel is impressed with the way the knowledge transfer staff are keeping up with, and applying new technologies for disseminating their work.

### **2.2 Reflections on Productivity, Relevance and Impact**

The panel feel that the peer reviewed research publication rate from the department is low and that over a period the researchers should reach the productivity norms for

Teagasc. By contrast both the research and knowledge transfer staff contribute to a level of popular and technical output that is exemplary.

In appraising a researcher's (and the department's) performance, due recognition should be given to demonstrable impacts on practice. In particular, publications in journals, such as *Irish Forestry*, that attract significant attention from practitioners and professionals should be given due recognition when considering Impact Factors.

### **2.3 Reflections on Sustainability, Vitality and Feasibility**

Sustainability, vitality and feasibility are strongly challenged in the face of reduced resources. In this context, and in view of the increasing number of growers and levels of harvesting, the panel questions the feasibility of continuing to offer the full range of services and provides recommendations accordingly.

The Department needs to develop a clear vision and plan for its future in the face of the increasing demand for services and the serious constraint on resources. It will need to examine in detail its current activities and delivery methods and identify novel and innovative approaches to delivery of programmes in the future.

## **3. Review of Forestry Research**

### **3.1 Reflections on Quality**

As stated in 2.1 above, the quality of the research programme is high and it is being implemented by a staff of hard-working and enthusiastic people, although, as noted, it is lacking critical mass. The panel felt that the research on tree improvement needs to be incorporated into a more structured national research and application programme to become fully effective. This should include closer linkages with the national seed stand and seed orchard system and with nurseries using selected and improved seed. These linkages should be developed in cooperation with the Forest Service, Coillte and the nursery sector. Collaboration with the Future Trees Trust on individual tree selection and breeding programmes should continue.

### **3.2 Reflections on Productivity, Relevance and Impact**

The panel feel that the peer reviewed research publication rate from the department is low and that over a period the researchers should reach the productivity norms for Teagasc, though the output of popular and technical material is exemplary.

The panel noted that Ireland is very reliant upon extremely few species in its farm woodland programme: predominantly Sitka spruce, alder, ash and oak. If serious problems arise with any of these, the consequences would clearly be very serious. Regrettably, a problem has arisen with the recent introduction of *Chalara fraxinea*, which is likely to kill up to 99% of all ash trees over the next 5-10 years. Other problems exist with oak (e.g. acute oak decline) in continental Europe and Great Britain. Fortunately, no serious pests or diseases yet exist with Sitka spruce, though organisms such as spruce bark beetle *Dendroctonus micans*, which occurs in Britain, pose a very serious risk. The panel believes that a researcher should devote some time to investigating possible alternative tree species in order to spread risks a little. Among these might be Atlantic or Lebanon cedars, Macedonian pine (already investigated, but only to a limited extent) and coast redwood. Among broadleaves, more promotion of alternative, but known species would be desirable, including possibly various maples including sycamore, cherry, sweet chestnut, hornbeam and *Nothofagus*. Forest plots at Avondale and the John F. Kennedy arboretum might serve as a guide.

Related to the above problems, over the past 10 years there has been a major influx of tree diseases and insect pests to Western Europe, including Britain. It is probable

some or all will eventually reach Ireland. Owners of infected trees will inevitably seek advice from Teagasc and, therefore, some capacity within Teagasc to provide such advice would be very desirable.

### **3.3 Reflections on Sustainability, Vitality and Feasibility**

As mentioned in 2.3 above, these characteristics are strongly challenged by reduced resources. By its nature, forestry is a long-term process, and to continue to produce useful results, many research projects need security beyond the normal 3-5 year funding period of projects.

## **4. Review of Forestry Knowledge Transfer**

### **4.1 Reflections on Quality**

The panel was exceedingly impressed with the quality of the Knowledge Transfer Programme. The programme delivery methods and techniques employed by the forestry advisors are innovative and comprehensive, and accommodate the learning and participation preferences of farmers of all ages, interests, and information technology abilities. They employ the latest technology as well as the tried-and-true methods of face-to-face interaction. The publications that have been produced are of high quality and accurately “translate” new knowledge from scientific findings into words and explanations for a general audience of farmers and others. The panel expresses concern about the Forest Investment and Valuation Estimator (FIVE). It is the panel’s understanding that there is not currently a process for updating the model to ensure that the model inputs and parameters are current. An inaccurate or incomplete model could seriously damage the high reputation that the knowledge transfer programme currently enjoys. The quality of the knowledge transfer programme is a credit to the leadership provided by the Department Head. Dr. Nuala NiFhlatharta has engaged very competent staff and gives them the latitude to deliver knowledge transfer programmes that are most relevant to their assigned regions. She represents Teagasc on numerous national committees.

The Teagasc Forestry Department has a very fine reputation within Ireland, but unlike the research programme, the knowledge transfer programme does not appear to be involved in international activities. The panel would encourage the leadership of the department and the forestry advisors to identify venues through which the knowledge transfer programme can both share and benefit from. The forestry story of Ireland, the response to afforest the country, is one that other countries would greatly benefit from knowing about. The International Union of Forestry Research Organizations (IUFRO) – Extension and Knowledge Exchange Working Party (9.01.03) would be a good place to begin (<http://www.iufro.org/science/divisions/division-9/90000/90100/90103/es>). Further, the panel suggests that Teagasc consider membership in IUFRO itself (<http://www.iufro.org/membership/members/es/>). The current funding policies and earning capacity of the knowledge transfer programme warrants an internal review. The Irish Forest Service is a noteworthy and critical funding partner for the knowledge transfer programme. Other funding arrangements and partners would strengthen the programme and provide greater reach to Irish farmers.

### **4.2 Reflections on Productivity, Relevance and Impact**

The panel truly marvelled at the productivity of the knowledge transfer programme. The forestry advisors are reaching thousands of farmers through their participation in one-on-one clinics, demonstrations, and field days. This is a reflection of the passion and dedication of the advisors to the restoration of the forestry tradition and culture in Ireland, the science-based practice of forestry, and their concern for their clients’ best interests. Productivity as evidenced by the usage of the forestry web pages is very

high, likely due to the level of interest of farmers as well as the very fine construction and content of the website itself. The knowledge transfer has some good data regarding the impacts of the programme, however it needs to be more robust in order to have a more complete understanding of the outcomes and impacts (summative evaluation) and in order to make changes in the programme (formative evaluation). More data can lead to better and more informed decisions regarding the overall knowledge transfer programme. The knowledge transfer programme is extremely well-aligned with national forestry policies and goals and the goals of its primary funding partner, the Irish Forest Service.

#### **4.3 Reflections on Sustainability, Vitality and Feasibility**

The knowledge transfer programme is extraordinarily strained by the recent reductions in resources, largely staff. Effective knowledge transfer and research programmes rely on human resources. In the face of declining public funds, the choices are: 1) reduce the programme as resources decline; 2) restructure the programme to match the resources available; 3) identify additional resources; or 4) a combination of these options. The sustainability of a viable and vital knowledge transfer programme necessitates a realignment of the programme, depending on the options shown above. Panel recommendations regarding this challenge are shown below. The stability of the knowledge transfer programme is not only a function of funding, but of the dedicated staff who press on even as resources shrink and their service areas expand. The cadre of forestry advisors who are currently employed are the face of Teagasc in their local areas and their dedication and hard work reflects positively on them and Teagasc.

### **5. Key Recommendations for the Forestry Programme**

#### **5.1 Main Recommendations**

1. The panel recommends that the Forestry Development Department takes time to pause and develop a five-year plan, including a plan for better profiling its work internally within the organisation.
2. The panel strongly recommends that an internal programme evaluation of the Department's research and knowledge transfer efforts, to include the inputs, outputs, outcomes and impacts, be undertaken. This information is necessary for the department to develop their five-year plan. A commitment from the Teagasc Board would be necessary to the effect that there would be no more reductions in staff (and, if possible, an increase) for this to be a success.
3. The panel recommends that the Department should develop joint programmes with industry and alliances with third level institutions, for example with UCD through the Teagasc/UCD Partnership,.
4. The panel recommends that the Forestry Department, with the assistance of Teagasc senior leadership, investigate and/or create opportunities to mobilise additional resources, such as contract staff, Walsh Fellows for both the research and knowledge transfer programs, and visiting scientists. Walsh Fellows would also contribute to raising the level of peer reviewed publications. Contributions from industry will also need to be examined.
5. In order to free up resources for Knowledge Transfer staff, the Department should explore opportunities for greater collaboration with other advisors in co-locations, i.e. Land Use Advisors, in relation to providing advice on afforestation in the context of whole farm planning. The Department should also examine ways to form partnerships with the private sector in providing science-based advice on afforestation.

6. In order to continue the development of the forestry sector to a high standard, the panel recommends that harvesting machinery operators should be trained to FETAC level. Subject to resources, the training could be provided by Teagasc. Funding should be sourced at a national level.

## **5.2 Other Recommendations for the Forestry Programme**

1. The panel recommends that possible alternative species to Sitka spruce, ash and oak should be investigated in order to reduce reliance on very few species.
2. Teagasc should develop some capacity among its plant pathology and entomology specialists to advise farmers on problems that might arise with tree diseases and pests.
3. The panel offers for consideration the concept of specialization in the forestry advisory staff. Currently, different staff members take responsibility for different aspects of the programme, such as the website and national events. In order to economize on the amount of time required to be an expert in all things forestry, the Department Head and forestry advisors should examine the concept of individual advisors being experts on specific forestry topics (e.g., hardwoods, conifers, planting, thinning) and sharing the most up-to-date information with their colleagues on a regular basis, such as periodic conference calls/webinars for themselves as an approach to continuing to build staff capacity and expertise in forestry.
4. The panel recommends that the knowledge transfer programme consider involvement in international forestry and knowledge transfer programmes, projects, working groups, and conferences, such as the research staff has done. Ireland's forestry story is special and inspirational, and probably not the only such story in the world. Other countries would greatly benefit from knowing how Ireland has approached the afforestation challenge and the success it is realizing through its integrated research and knowledge transfer programme.
5. The panel recommends that a process be developed to update and monitor the effectiveness of the Forestry Investment and Valuation Estimator (FIVE). While all models have limitations, an out-of-date and inaccurate FIVE, should it occur, would have highly negative consequences for the integrity and reputation of the Department and Teagasc. The panel suggests that, given the absence of a forest economist, the forestry department seek technical assistance from, perhaps, an agricultural economist, who has expertise in economic models as an approach to ensuring the accuracy of the model.

## APPENDIX 1: Forestry Programme Peer Review Committee Members

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