



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

15C684 - Irish private forest owners: The role of knowledge transfer and social networks

Final Report

This project was funded under the Department of Agriculture,
Food and the Marine Competitive Funding Programme.

SUMMARY

The objective of this study was to understand the factors that influence forest owners' engagement in the management of their forests specifically focusing on the role of knowledge transfer events and the social networks of owners. The study adopted a two-pronged approach; an owner focused approach as well as a wider forest sector approach (i.e. a 'Systemic Innovation' approach) to understand the broad range of factors potentially influencing the engagement of owners particularly in wood mobilisation. The key findings of the study were:

1. Knowledge Transfer events based on field days were successful in contributing to capacity development of forest owners in terms of self-reported learning and provided a "pathway" to practice change.
2. Comparing the profile of attendees at similar extension events overtime indicates that forest owners are "maturing" and with it their level of management knowledge.
3. At a broader level, extension services in Ireland lack competency in formal theory driven monitoring, evaluation and learning techniques.
4. Analysis of the forest sector innovation system (FIS) identified a number of interconnected systemic problems (blocking mechanisms) negatively influencing the potential for co-innovation and timber mobilisation including network problems blocking capacity development of new forest owners and knowledge infrastructure deficiencies blocking the reach and effectiveness of formal knowledge networks.
5. Deficiencies in the capacity of the formal institutions to engage with stakeholders directly and to facilitate constructive communication among stakeholders and the wider community is negatively impacting on the ability of the sector to come together to agree on a vision for innovation, and to promote the positive economic and environmental contribution of the sector to rural agrarian communities with little tradition of farm forestry.
6. Social network analysis undertaken found that being a member of such groups does influence opinion and in turn may influence decision-making.

KEYWORDS

Forestry Innovation System; Social networks; Capacity Building

ACRONYM

FOROWN

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Section 1

Start Date

01 January 2017

End Date

31 March 2020

Select Research Programme

CoFoRD

Please select the appropriate TRL Scale TRL 1: Basic

Principles Observed

NRPE Priority area

Sustainable Food Production and Processing

Total DAFM Award

€198,364.00

Total Project Expenditure

€191,815.80

Rationale for undertaking the Research

The share of private forest ownership in Ireland is currently 50.8%. Potential timber harvest in Ireland is expected to double by the year 2028, with almost all of the increase coming from the private sector. Demand for wood in Ireland is also expected to increase and will exacerbate current supply shortfalls unless wood mobilisation challenges are addressed.

Private forests established since 1980 are owned by just over 23,000 “new” owners who have limited experience/ knowledge of forest management. Their forests are small and often inaccessible, which makes economic wood mobilisation challenging.

If private forests are to deliver the forecasted increase in timber production, in a sustainable way, forest owners must be engaged in their forests and ensure that the necessary management and silvicultural operations are undertaken. In order to help policy makers and advisory services calibrate their approaches to ensure the delivery of ecosystem services, including timber, from private forests, information is required on owners’ forestry knowledge, their input into management, access to advisory services, awareness of the value of their forests and the factors that influence their decision-making and engagement with other forestry stakeholders.

Forest owners do not operate in a vacuum. Their engagement in their forests is influenced by what is going on in the wider forest sector. Thus a broader systemic approach to understanding how the forest sector and its value chains operates is required to determine whether current structures and institutions are conducive to fostering the changes needed to address the wood mobilisation challenge.

Methodology

The methods used to address the objectives of the study include:

- a) Face to face surveys of almost 200 forest owners attending KT events were conducted to evaluate the capacity building that occurred at these events. A subsample of 39 forest owners participated in follow up interviews to establish the ‘action behaviour’ management gap and identify factors constraining practice.
- b) Based on a review of the literature on private forest owners’ knowledge and decision-making and Sectoral Innovation Systems a method for analysing the Irish Forestry Innovation System was developed based on a series of semi-structured, face to face interviews with industry stakeholders. Interviews were conducted with a diverse group of 26 forestry stakeholders from across the forest value chain; these captured key insights into innovation performance in the sector. Analysis identifies barriers to wood mobilisation and suggests policy recommendation for how they can be addressed.
- c) Social network data for forest owners who were members of two Knowledge Transfer Groups (KTG) for certification were collected. Every member (12 in each group) of the groups completed a questionnaire at two points in time to provide these data.
- d) A postal survey facilitated by DAFM was targeted at ‘Hard to reach’ forest owners who do not actively manage their forests nor engage in the Forestry Innovation System (FIS) and KT networks. This survey attempted to address the knowledge gap in relation to the profile of ‘non-engager’ forest owners.

Project Results

1. Knowledge Transfer events based on field days were successful in contributing to capacity development of forest owners in terms of self-reported learning and provided a “pathway” to practice change. All owners who planned to undertake thinning following a KT event had moved along the pathway to practice change, i.e. either engaged a professional forester, attended further KT events and/or applied for a felling license. However only 3 owners had actually thinned in the intervening period with longer than expected timeline for processing of felling license applications (application in process) the most commonly cited reason for delayed management intervention.
2. Comparing the profile of attendees at similar extension events overtime indicates that forest owners are “maturing” and with it their level of management knowledge. This is related to their growing practical experience and the cumulative effect of knowledge gained at additional KT events over time.
3. Extension services in Ireland lack competency in formal theory driven monitoring, evaluation and learning techniques (MEL). As such events are grounded in mental models of how the change process operates rather than explicit and testable hypotheses and theories of change which enable practice improvement.

4. Analysis of the forest sector innovation system (FIS) identified a number of interconnected systemic problems (blocking mechanisms) negatively influencing the potential for co-innovation and timber mobilisation including network problems blocking capacity development of new forest owners and knowledge infrastructure deficiencies blocking the reach and effectiveness of knowledge networks. While formal institutions acknowledged the need to foster a culture of collaboration and formal networks within the sector (such as incentives to support owner and discussion groups), interviewees felt that the same culture of inclusiveness and co-learning is lacking in institutional communications with forest owners and value chain actors and between value chain actors and forest owners.
5. Deficiencies in the capacity of formal institutions to engage with stakeholders directly and to facilitate constructive communication among stakeholders and the wider community is negatively impacting on the ability of the sector to come together to agree on a vision for innovation, and to promote the positive economic and environmental contribution of the sector to rural agrarian communities with little tradition of farm forestry. While there are a number of separate initiatives and projects targeted at improving specific aspects of the FIS functioning, the sector remains fragmented and lacks overall guidance and coordination.
6. The social network analysis found that within the two KTGs there were key players in each group who influenced the opinion of others in the group. These findings suggest that being a member of such groups does influence opinion and in turn may influence decisionmaking.
7. Many of those targeted in the non-engager study had multiple plantations, only some of which were not thinned. The main reasons given for not thinning stands were: the site is too young; poor site ground conditions and risk of windthrow; poor access; and lack of knowledge. Thus despite efforts in this project we found few "non-engagers".

Section 2 - Research Outputs

Summary of Benefits / Improvements of Project Findings

Policy makers - the project demonstrates the effectiveness of knowledge transfer groups to not only facilitate vertical knowledge transfer (e.g. knowledge transfer from professionals to members of such groups) but also horizontal knowledge transfer (e.g. knowledge transfer within groups, i.e. from owner to owner) ; also shows that there are key players within such groups that could be useful "injection" points for information by extension agents and others. These key players are shown to be very effective diffusers of information.

The project also identifies that there is a number of interconnected systemic problems (blocking mechanisms) negatively influencing the potential for co-innovation and timber mobilisation including network problems blocking capacity development of new forest owners and knowledge infrastructure deficiencies blocking the reach and effectiveness of formal knowledge networks and provides recommendations as to how these can be addressed.

Forest owners - the project demonstrates to forest owners that being part of a group can result in peer to peer learning.

Extension agents - the project has contributed to the development of reflexive competencies and practices within the Teagasc Forestry development department through ex-ante evaluation of Knowledge Transfer (KT) interventions and follow up dissemination workshops with extension agents. Improved competency in theory-driven planning, monitoring and evaluation and learning (MEL) techniques supported by practical (MEL) tools will enable extension agents to better plan KT interventions and to subsequently assess and address whether the target of an intervention is being reached and how the process of knowledge diffusion, development and longer term practice change or impact is being met.

Summary of Staff Outputs

Research Output	Male	Female	Total Number
Post Doctorates	1	0	1
PhD Students	0	1	1

Summary of Academic Outputs

Research Outputs	Total Number	Details
PhD Theses	1	Evelyn Stoettner. The social networks of Irish private forest owners: their role in knowledge transfer and their influence on forest management activity. University College Dublin

Publications in Peer Reviewed Scientific Journals	2	<ol style="list-style-type: none"> 1. Kilcline, K., Ni Dhubhain, A., Heanue, K., O'Donoghue, C., & Ryan, M. (2019). Addressing the challenge of wood mobilisation through an innovation systems lens. Forest Policy and Economics, Revised paper submitted August 2020. 2. Kilcline, K., Ni Dhubhain, A., Heanue, K., O'Donoghue, C., & Ryan, M. (2019). Extension and Knowledge Exchange – Assessing Private Forest Owner's Management Capacity Development. Forest Policy and Economics, Planned submission (expected September 2020)
Peer Reviewed Conference Papers	4	<ol style="list-style-type: none"> 1. Extension and Knowledge Exchange – Assessing private forest owner's management capacity development. "Transformations Towards a New Era in Small Scale Forestry"; Vaasa, Finland; 11–13 June 2018. https://epublications.uef.fi/pub/urn_isbn_978-952-61-2790-3/urn_isbn_978-95261-2790-3.pdf 2. The relationship between social networks and opinions of peer Irish forestowners. Presented by Evelyn Stoettner at the IUFRO Small-scale Forestry Conference 2018 "Transformations Towards a New Era in Small Scale Forestry"; Vaasa, Finland; 11–13 June 2018. https://epublications.uef.fi/pub/urn_isbn_978-952-61-2790-3/urn_isbn_978-952-61-2790-3.pdf 3. Assessing the Irish Forestry Innovation System; presented by Kevin Kilcline at the 166th EAAE international conference "Sustainability in the Agri-Food Sector"; NUIG, Galway; 30/31 August, 2018. https://www.teagasc.ie/media/website/publications/2018/Kevin-Kilcline.pdf 4. Social Influence in small forest owners knowledge transfer groups. Presented by Evelyn Stoettner at the IUFRO Small-scale Forestry Conference 2019, Duluth, USA; 8–10 July 2020. https://iufrossf.dl.umn.edu/sites/iufrossf.dl.umn.edu/files/smallscaleforestryconference_book_20190627.pdf
Other	1	<ol style="list-style-type: none"> 1. Presentation entitled "Application of Evaluation Approaches at Project Level in Teagasc – The FOROWN project". Teagasc Evaluation Unit Seminar No. 2, Approaches to Evaluation, Teagasc, Oakpark, Carlow, 3rd December, 2018.

Intellectual Property

None

Summary of other Project Outputs

Project Outputs	Details	Total No.
No Response	No Response	0

Potential Impact related to Policy, Practice and Other Impacts

Impact	Details
Other	The ForOwn project has contributed to the development of reflexive competencies and practices within the Teagasc Forestry development department through ex-ante evaluation of Knowledge Transfer (KT) interventions and follow up dissemination workshops with extension agents.

Dissemination Activities

Activity	Details
Workshops at which results were presented	Presentation entitled “Application of Evaluation Approaches at Project Level in Teagasc – The FOROWN project”. Teagasc Evaluation Unit Seminar No. 2, Approaches to Evaluation, Teagasc, Oakpark, Carlow, 3rd December, 2018.
Seminars at which results were presented	<p>Presentation entitled “Extension and Knowledge Exchange – Assessing private forest owner’s management capacity development” presented by Kevin Kilcline at the IUFRO Small-scale Forestry Conference 2018 “Transformations Towards a New Era in Small Scale Forestry”; Vaasa, Finland; 11–13 June 2018.</p> <p>Presentation entitled “The relationship between social networks and opinions of peer Irish forest owners” presented by Evelyn Stoettner at the IUFRO Small-scale Forestry Conference 2018 “Transformations Towards a New Era in Small Scale Forestry”; Vaasa, Finland; 11–13 June 2018. https://epublications.uef.fi/pub/urn_isbn_978-952-61-2790-3/urn_isbn_978-952-61-2790-3.pdf</p> <p>Presentation entitled “Assessing the Irish Forestry Innovation System” presented by Kevin Kilcline at the 166th EAAE international conference “Sustainability in the Agri-Food Sector”; NUIG, Galway; 30/31 August, 2018. https://www.teagasc.ie/media/website/publications/2018/Kevin-Kilcline.pdf</p> <p>Presentation entitled “Social Influence in small forest owners knowledge transfer groups” presented by Evelyn Stoettner at the IUFRO Small-scale Forestry Conference 2019, Duluth, USA; 8–10 July 2020. https://iufrossf.dl.umn.edu/sites/iufrossf.dl.umn.edu/files/smallscaleforestryconference_book_20190627.pdf</p>

Knowledge Transfer Activities

Identify knowledge outputs generated during this project. Ex-ante evaluation of Knowledge Transfer (KT) interventions and follow up dissemination workshops with extension agents. Knowledge Transfer Evaluation workshop held with Teagasc Forestry Development Department to better plan, evaluate and improve Knowledge Transfer interventions

Identify any knowledge transfer activities executed within the project. Workshops were used to engage extension agents in the study design processes, to disseminate research findings, to introduce extension agents to theory driven evaluation concepts and complementary practical planning tools for extension interventions.

The FOROWN project team also facilitated workshops with the DAFM and Coford PAW (Promotion and Afforestation Working Group) in response to the MacKinnon Report’s call to, “take stock of a... multiplicity of campaigns and initiatives to promote forestry”. A stakeholder mapping exercise was employed to promote co-ordination and collaboration of activities within the Forestry Promotion Campaign 2019/2020 as part of a mid-term review of that campaign. In addition, theory-driven techniques based on aforementioned systems thinking were introduced and discussed and the usefulness of a logic model framework as a coherent mechanism to guide planning, monitoring and evaluation of future programmes was explored.

List any impacts resulting from the knowledge transferred during the project. Improved competency in theory-driven planning, monitoring and evaluation and learning (MEL) techniques support by practical (MEL) tools enable extension agents to better plan KT interventions and to subsequently assess and address whether the target of an intervention is being reached and how the process of knowledge diffusion, development and longer term practice change or impact is being met.

Section 3 - Leveraging, Future Strategies & Reference

Leveraging Metrics

Type of Funding Resource	Funding €	Summary
Other	€0.00	None

Future Strategies

The following is an outline of recommendation arising from this project:

- further investment in extension resources to facilitate the: development of a national network of owner groups; continued funding for discussion/producer groups; development of monitoring and evaluation competencies to improve the design and delivery of targeted services to the range of forest owners,
- development of policy evaluation tools is required to take account of potentially competing or complementary policy drivers,
- development of an independent overarching third-party organisation is suggested by the stakeholders to facilitate the formation and maintenance of innovation networks across the sector,
- identification of sectoral ‘innovation brokers’ through Social Network Analysis techniques is required to aid long term resource management planning.

For the recommendations of this research to be taken up by the sector further communication and collaboration is required with industry and policy makers. It was intended to facilitate a high-level forest research day in conjunction with the RDS in April. Due to Covid restrictions this will take place later and will provide an interactive forum where the main research outputs will be communicated and discussed with key industry stakeholders from across the sector including those who contributed to the research process.

Project Publications

1. Kilcline, K., Ni Dhubhain, A., Heanue, K., O'Donoghue, C., & Ryan, M. (2019). Addressing the challenge of wood mobilisation through an innovation systems lens. *Forest Policy and Economics*. Forthcoming (revised and resubmitted).
2. Kilcline, K., Ni Dhubhain, A., Heanue, K., O'Donoghue, C., & Ryan, M. (2019). Extension and Knowledge Exchange – Assessing Private Forest Owner's Management Capacity Development. *Forest Policy and Economics*, Planned submission (expected November 2020)