



Regional Stakeholder Group

Fourth RSG meeting, 24 October 2016



Multipurpose trees and non-wood forest products, a challenge and opportunity

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SEVENTH FRAMEWORK
PROGRAMME



4-year project

- ❖ November 2012 = Month 1
- ❖ April 2016 = Month 42
- ❖ **October 2016 = Month 48**





Resource management

- ❖ Researchers reviewed the existing state of the art in silvicultural guidelines, forestry planning models and decision support tools.
- ❖ Then, in an industry which usually focuses almost exclusively on timber, they focused on improving and designing tools to enhance production of NWFPs.
- ❖ Researchers worked closely with their regional stakeholders to choose what to study & design Resource Management In-Depth Case Studies.
- ❖ Forestry research institutes in Spain, Portugal, Catalonia, Finland, Turkey, Germany and Latvia.





Research focused on NWFPs which were already important crops in the countries in which they were studied, e.g. bay leaves, chestnuts, lime flowers, cherries, cork, pine dew honey, pine nuts, sorbus fruits, boletes, blaeberrries and cowberries.



Promoting wild mushroom yields by forest management

Jari Miina, José-Antonio Bonet, Sergio de Miguel, Juan Martínez de Aragón,
Mikko Kurttila, Kauko Salo and Veera Tahvanainen

The issue is ...

Annual production of wild mushroom varies considerably due to different factors. The prevailing weather – rainfall and temperature – is one of the key factors, but for example watering for promoting mushrooms is infeasible. Also, local site characteristics such as elevation, aspect, soil type and site quality are mostly uncontrollable. On the other hand, stand characteristics, and hence also forest management, affect the yields of mycorrhizal mushrooms as they are in a symbiotic relationship with the trees. Thus, identifying those stand characteristics and treatments most suitable for mushrooms would help promoting wild mushroom yields.

From a StarTree perspective

Currently in Finland and Spain, wild mushrooms are principally opportunistically harvested and can therefore often be considered side-products of forestry. However, increasing opportunities to obtain monetary and other benefits, such as recreation or picking for personal consumption, can have an effect on forest management as well. Therefore we need to understand the factors affecting the variation in yields in order to enable forest managers to coproduce timber and mushrooms.

The long-term monitoring of mushroom yields and the use of modelling techniques were used to identify key considerations for controlling the yields of mushrooms. Most importantly we wanted to know which kinds of forest stands (tree species, stand age, density, etc.) are most suitable for good crops. It has been suggested that the fruiting body production of the mycorrhizal fungi is linked to the photosynthetic activity of the host tree, and thus ensuring the vitality of the stand would lead to greater mushroom yields. For example, thinnings are one way of increasing the growth of trees.

The aim of the following two case studies was to prepare empirical models for predicting the annual yields of wild marketed mushrooms in spruce stands in Finland and in pine stands in Spain. These two examples on different tree species, as well as climatic and site conditions will highlight possibilities to enhance mushroom yields by forest management.

Case 1: Mushroom yields in spruce forests (Finland)

Boletus spp. and *Lactarius* spp. are among the most marketed wild mushrooms in Finland. These species are also appreciated in international markets, especially *Boletus* spp. The official list of marketed mushrooms comprises 31 edible species, of which we studied only mycorrhizal fungi.



Mycorrhizal cepts (*Boletus edulis*) growing in a Finnish 30-year-old spruce stand which produced high yields (23–46 kg/ha) few years after the first commercial thinning. Photos: Kauko Salo



<http://star-tree.eu/final-results/reader>

“The information on site and stand characteristics which are most suitable for wild mushrooms can be used in planning forest management operations...”

“The production of timber and wild mushrooms are not competing with each other, and hence the co-production of these two products is a suitable option. Moreover, the co-production would create significant additional income for forest owners.”

Caveat:

This work was done in Finland and Spain: the results may not be applicable to other regions.

Managing forests for multiple purposes

Spreading the berries beneath the boughs: bilberry & cowberry in timber production

The forest floor could offer opportunities for added income in timber production stands, without detracting from the main business.

Berries spread naturally beneath the branches of wild forests; why not also in forest stands dedicated to wood production?



StarTree's revised guidelines for bilberry and cowberry detail how to optimise stand management for the joint production of timber and berries.

Market prices paid to berry pickers and berry-picking costs were used in calculations. This means the results are most relevant when the forest owner directly or indirectly benefits from managing the stands for both timber and berries.

Who benefits?

<http://star-tree.eu/final-results/snapshots>

Full report:

<http://star-tree.eu/results/deliverables#wp-2>

Caveat:

This work was done in Finland: the results may not be applicable to other regions.

What's best for bilberry (*Myrtillus*)?

Pine:

- Even-aged forest management is most profitable on sites where bilberry yields are likely to be high.
- More frequent & heavier thinning and 20 years longer rotation are recommended.
- In sparse, mature pine stands, a longer rotation results in higher bilberry harvests.

Birch:

- May be as profitable as for pine but empirical knowledge is scarce.
- More frequent and heavier thinning and longer rotation also recommended.

Spruce:

- No gain by thinning more frequently and heavily.
- In uneven-aged management, the stand basal area would be constantly at a level that enables good bilberry yields, which is better than under the current, even-aged, management system.

Mixed stands:

- Spruces are mostly thinned out, leaving mainly a mixture of pine and birch, favourable for bilberry.
- Heavier thinning and longer rotation are recommended.

What's best for cowberry (*Vaccinium*)?

Pine:

- Treeless open habitats are most suitable.
- Cowberry yields increase a few years after regeneration cutting in pine stands.
- The highest cowberry yields happen at the beginning of the rotation; thinning in young stands would promote cowberry yields but this is not profitable for pine.
- Heavier thinning treatments at the end of the rotation are recommended for increased yields.
- Sparse mature pine stands are also suitable for cowberry: longer rotation lengths would maintain both cowberry production and forest cover.



A Bayesian Belief Network approach to assess the potential of non-wood forest products for small-scale forest owners

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Boreal forests



Warm pine forest



Mediterranean forest

1. Introduction

Non-wood forest products (NWFPs), i.e. products of biological origin other than wood derived from forests, other wooded land and trees outside forests (FAO, 1999) are an integral element of sustainable forest management in Europe. In the wake of contemporary international policies NWFPs are being considered as important means for business diversification and income generation, particularly in regions where wood is not the most profitable product. In the most recent State of Europe's forests report, the total economic value of NWFPs in the Forest Europe region accounted for 2,7 mio €. Thus there seems to be high latent potential to strengthen the economic viability of rural economies.

In this context we aim to:

- support people who give advice to forest owners (e.g. forest extension services, forest owner associations, forestry consultants) to
 - attract forest owners to engage in new NWFP businesses and
 - foster the sustainable management of forest resources
- support small-scale forest owners as regards the co-production of wood and non-wood forest products in order to
 - diversify their product portfolio
 - distribute related socio-economic risks
 - contribute to biodiversity conservation

2. Method

In our application, the BBN is applied in order to shed light on a FMU's potential to integrate one or more of regionally available NWFPs in its forest management concept.

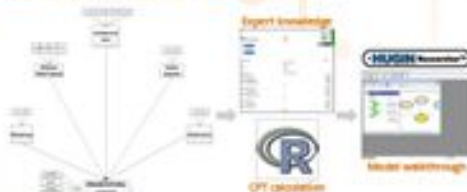
A Bayesian Belief Network (BBN) is a kind of probabilistic graphical model that may be applied to a wide range of environmental problems, inter alia due to the powerful probability theory involved. BBNs are understood as useful tools to model ecological predictions and to aid resource-management decision-making. They consist of two structural components:

- a causal network (often referred to as the directed acyclic graph), and
- conditional probability tables (that quantify the relations in the network)

1. Causal network



ii. Conditional probability table



3. BBN development

The development process can be clustered in two main steps:

- Structural development
- Parameter estimation and quantitative evaluation



[1.] In an initial meeting, led by a domain expert, cognitive mapping was applied to identify relevant criteria and their relationships in order to design a basic structure of the BBN. The suitability of the network was assessed with regard to data needs for single NWFP species. In the following criteria were refined and the BBN structure adapted within a two-day workshop by the core development group. Further development was based upon two distinct case studies (i.e. North Karelia in Finland, Styria in Austria). [2.] Currently, the BBN is evaluated against its feasibility and applicability to be applied to 4 clusters of NWFPs (tree products, mushrooms & truffles, understorey products, animal products). Domain experts will be consulted in order to fill the conditional probability tables (CPT) for each criteria and each NWFP cluster respectively. An approximation approach is used to feed the CPT values into the HUGIN software and to reduce the elicitation burden of the experts using the R package. Finally, the approach will be tested on the level of a Forest Management Unit (FMU) for each case study.



Dark spruce forest



European beech forest



Forest products

http://www.star-tree.eu/images/posters/PDF/s/bayesian_belief_network_approach.pdf

“A Bayesian Belief Network (BBN) is a probabilistic graphical model that can be applied to a wide range of environmental problems, inter alia to aid natural resources management decision-making.... Two case studies demonstrate that BBNs can be used to transfer expert knowledge from science to practice and thus have the ability to contribute to improved problem understanding of non-expert decision makers for a sustainable and holistic management of forest resources”- *Managing for NWFPs - an assessment on the forest holding level* in Wild Forest Products Conference abstracts: <http://www.star-tree.eu/events/final-conference>

Potential for use in Scotland?



inity

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Resource management - in-depth findings

StarTree deliverables D2.1, D2.2, D2.3, D2.4

<http://star-tree.eu/results/deliverables#wp-2>

Useful contact: Jon Sheppard

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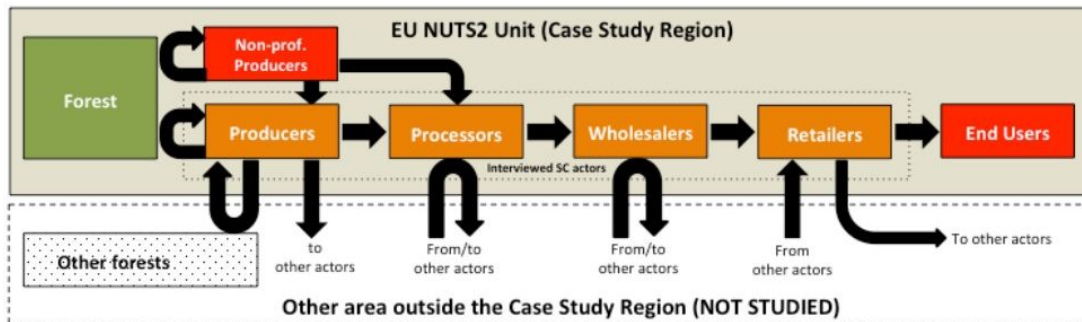
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Economy & marketing

WP3 researchers had a strong focus on bulk trade and four-stage supply chains (producer, processor, wholesaler, retailer):



- Producer** An economic actor who gathers NWFP from forestland for commercial purposes (in NWFP supply chain, the producer is also known as commercial picker). A picker is a person who gathers NWFP in the forest, and it can be considered a producer if it sells its harvest for commercial purposes.

- Processor** An economic actor involved in the NWFP supply chain that purchases raw or semi-processed NWFP to transform them into a final or semi-finished product.

- Wholesaler** An intermediary actor along the supply chain that links two or more actors at different level.

- Retailer** The actor of the NWFP supply-chain that sells goods to the end user (restaurants are a particular type of retailers).

Similar to approach used by Sathre (2009) → from supplier to consumer





But also found that “a large part of the traded NWFP are sourced informally”

“a clear dualistic structure of the market with the main end-users situated in the western European countries and the main producing companies located in the East of Europe...

“[and] another and hidden dualism that is referred to formal and informal market... NWFP collected and consumed locally in restaurants and local handcrafts. The main target of the report was the formal market and the general understanding of the structure of the formal NWFP supply chains, nevertheless, during the data collection, we observed in several regions flourishing business activities that fulfil the local demand of NWFP based on local production of NWFP: a challenging issue to be considered in a political framework. Among the solutions highlighted in different case study regions, the case of North Karelia (Finland) is worth to be mentioned as active solution for rising up the informal market to formal market. Tax exemption for the NWFP informal producer (wild mushroom and berry pickers) allows for transposing the fiscal pressure to the second actor in the supply chain, which might be a processor, wholesaler or retailer; and simply account the purchasing volume and value without any additional taxation to the Fiscal Agency. On the contrary, case like Italy, where both informal producers and NWFP buyers are taxed, shows a trend toward the creation or stabilization of the informal market. In this situation, only few processors and wholesalers rely on the local production, and the international market become the main supplier for their needs.”

- *StarTree Deliverable D3.2. The regional markets of NWFP: current situation and effect on SME* <http://star-tree.eu/results/deliverables#wp-3>





Wild mushroom supply chains - differences of scale

"**In Spain** there is a deep-rooted tradition of mushroom picking and trade. Hundreds of tonnes of edible forest mushrooms are sold annually in local markets, contributing to a significant economic activity of several million euros and settling the rural population to the forest environment. Mushroom production is often the main source of income obtained from our forests. "

- [star-tree.eu/images/conference/Wild forest products in Europe book of abstracts 10102016.pdf](http://star-tree.eu/images/conference/Wild_forest_products_in_Europe_book_of_abstracts_10102016.pdf)

In Scotland, respondents to a wild mushroom supply chain survey indicated a trade of at most 23 tonnes per year. This figure is likely to include some double counting (due to buying & selling between wholesalers), and a significant proportion of the reported amounts may have been picked outwith Scotland.

Caveat:

The data collected on the mushroom supply chain in Scotland was insufficient to produce robust statistics or generalisations.





Wild Mushrooms in Italy: from a commodity to a recreational service

E. Vidale, G. Corradini, R. Da Re & D.M. Pettenella - TESAF Department, University of Padova



1. Introduction

Italy has a long tradition of collection and consumption of wild mushrooms (WM) from forests. In 2004 the National Statistical Institute (ISTAT) started to collect and publish data on WM production based on the amount of WM collected in the Italian forests by professional pickers [1]. After 2007 production experienced a sharp reduction due to changes in the international trade agreements with the Eastern European Countries. Years later the amount of wild mushrooms imported from the international market began to return to previous levels, while the internal production remained quite limited or negligible (Fig. 1). The enforcement of national wildlife transformed clearly the WM collection into a recreational activity enjoyed by locals and tourists [2]. The high demand of recreational WM picking pushed the policy maker to introduce a new law in the early nineties in order to reduce the pressure over WM.

2. Objectives

We tried to answer the following questions:
 - What happened in the Italian WM market in the last 30 years and in the attitude of the Italian forest owner?
 - Can recreational WM picking be a source of income for the forest manager? Is the income related WM picking adequately considered in forest management planning?
 - What is the structure of the international fresh WM trade today?

3. Methodology

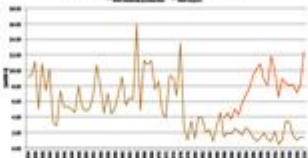
- Analysis of the WM production trade impact at different scales: local, national and international. Data have been collected through national and international database (ISTAT, EUROSTAT & COMTRADE) for production and trade analysis of WM.
 - Analysis of the legislative framework affecting the WM both as product and service (national and regional legislation-database were used).
 - Six case-studies in Veneto Province (Veneto Region - NE Italy) (Fig. 2). Data have been collected through a survey with all the local forest administrations or related Mountain Community Authorities, which are responsible for the sale of recreational WM picking (RWMP) permits.

4.1. The Italian change

While the WM industry started to explore Eastern European Countries in the late '70s, the regulator was addressed to regulate an over-accumulated forest activity promoting a shift on the use of WM from a commodity to a product coupled with a recreational service. Two subgroups of pickers are now present: a minority of professional pickers, and a large amount of people willing to collect WM for recreation. The national law (2002) stated the full property right of the landowner that has anyone to market its selling, identifying the edges of the forest WM considered as that enclosed a forest exclusively (see: nullius), because effectively using private goods. In property rights re-definition special attention has been given to recreational picking. The legislator started to ensure the sustainability of the WM sale, setting up harvesting limitations in order to reduce negative environmental impacts, where every region could modify the limits of harvest. The law merged several points contained in other decrees related to forest and land sector.

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Fig. 1. Italian WM commercial production and import



4.2. Towards WM tourism in Veneto Province

The effect of the national WM law and its implementation in Veneto Region, with the differentiation of WM pickers (similarly to other regions), with a clear distinction between professional and recreational WM pickers based on the daily allowed harvest (no limits for professional and 3 Kg for the recreational user). The implementation of Regional Law 22008 (and recently the R.L. 0112) allows a direct compensation from the recreational forest managers (private and public). The law doesn't address how to use the revenues and let forest managers to decide on them. In the six case-studies, recreational pickers were 60,111 (8.9% of the Province population). The percentage of pickers with regards the total municipality population has been found higher in those villages closer to the forest (see Fig. 2.8).

Fig. 2. RWMP distribution on the basis of municipal population

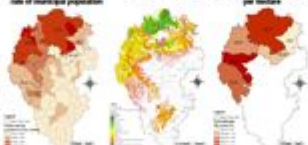
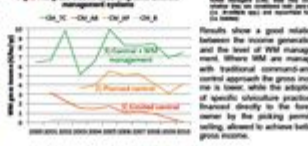


Fig. 3. Forest types



Results show a good relation between the income generation and the level of WM management. Where WM are managed with traditional command-and-control approach the gross income is lower, while the adoption of specific silviculture practices focused directly to the forest owner to the picking points, allowing to achieve better gross income.

4.3. The International Trade

From the '70s, a massive increase in WM imports from Eastern European Countries and Asia has been recorded. This growth is globalisation process of the Italian Wild Mushroom market (mainly based on boletus and chanterelles). The international trade has continuously increased all over where Italy plays an important role both as importer and exporter of fresh and frozen mushrooms, accounting for the 8.7% and 7% respectively of the total value imported and exported in 2012 (see Tab. 1 & 2 - source Comtrade).

Table 1. Top 5 global exporters (in million USD)

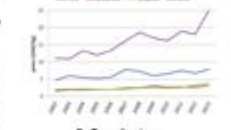
Year	2007	2010	2012
China	136.1	China	145.1
Netherlands	40	Netherlands	21.6
Poland	44.5	Poland	25.5
Germany	25	Germany	18.8
Russian Fed.	34.3	R. of Korea	44.7

Table 2. Top 5 global importers (in million USD)

Year	2007	2010	2012
Japan	112.9	Japan	90.1
Germany	75.4	Germany	85.4
Italy	52.8	France	52.8
France	51.7	Italy	41.2
UK	34.5	UK	26.7

The high dependency on the international trade and the lack of WM supply from the Italian forests might be feared for the entire sector in the coming future, especially in case foreign policy of export leader would change. Moreover, the price movement of WM in the international market (see Fig. 3) may cause the exit of some leading countries, toward other with higher purchasing power as it occurred to Italy with France.

Fig. 4. WM price by type



5. Conclusions

- In the '80s, the Italian WM market experienced a globalisation process, with an increase of imports from Asia and Eastern European Countries, while inside national boundaries, a new legislative framework started to change. WM, earlier a mere market, became a club or semi-private goods.
 - WM are now in Italy not only a commodity, but a product coupled with a recreational service, and in Veneto Region, the implementation of the law allows a direct compensation from the recreational WM picking to the forest managers.
 - The results on six case-studies in Veneto Province, show that when forest managers considers WM production in forest management, forest areas became more productive in terms of WM, and the number of recreational WM picking points, and related income, increases.

References cited:
 [1] ISTAT (2012). Rete Forestale - Contorno della silvicoltura italiana (Istat, Roma, Italy).
 [2] Vidale, E., Corradini, G., Da Re, R. (2010). Valuing mushroom forests. Forests: An International Journal. CABI Publishing, Wallingford.

Wild Mushrooms in Italy: from a commodity to a recreational service

- Market became globalised during 1980s
- At the same time, legislation was brought in "to regulate an over-demanded forest activity, promoting a shift on the use of wild mushrooms from a commodity to a product coupled with a recreational service. Two categories of pickers are now present: a minority of professional pickers, and a large amount of people willing to collect wild mushrooms for recreation"
- Landowners get benefit from picking: "Results show a good relation between the income generation and the level of wild mushroom management. Where wild mushrooms are managed with traditional command-and-control approach the gross income is lower, while the adoption of specific silviculture practices financed directly to the forest owner by the picking permits selling, allowed to achieve better gross income"

The legislation prioritised recreational picking over commercial picking.

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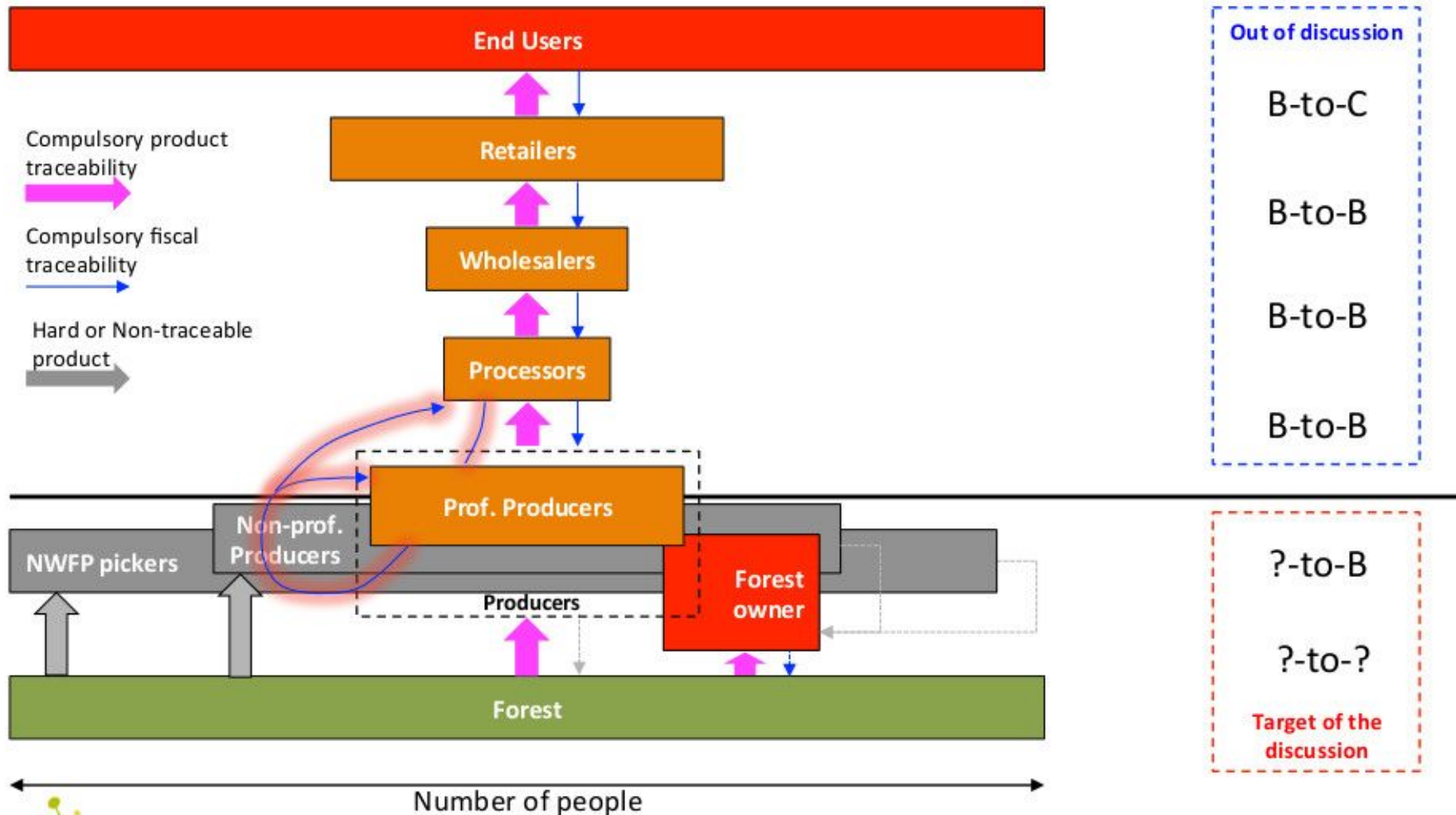
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Product & Fiscal Traceability



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TESAF

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Traceability of food

- Required by EU legislation (Article 18 of Reg 178/2002)
- “Almost no [wild mushroom distribution] companies comply” - WP3 colleague (researching fiscal traceability and economic consequences)
- “Someone is going to die sooner or later” - Scottish wild food distributor (concerned with food safety traceability and public health)

WP3 colleague proposed solution:

One aim for WP3 research was to produce proposals for EU legislation change around NWFPs. For this issue, they suggest Europe as a whole should adopt the Finnish approach, where pickers (obtaining a marginal, unpredictable and usually part-time income) are exempt from VAT and income tax, and the burden of tax (and proof) instead falls on the distributor who buys from them.

NB “Pickers [in Finland] may sell directly to professional kitchens, local consumers, retailers and local shops.”

- *StarTree Reader: Voluntary harvesting codes*

<http://www.star-tree.eu/final-results/reader>





Economy & marketing - in-depth findings

StarTree deliverables D3.1, D3.2, D3.3, D3.4, D3.5
<http://star-tree.eu/results/deliverables#wp-3>



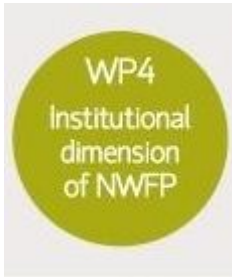
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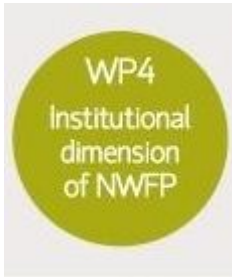




Institutions

“...to understand the role of institutions (policies, regulations, policy instruments and informal norms) in the provision and consumption of NWFP; to understand how such institutions shape the production and consumption of NWFPs, and clarify underlying causes and reasons for that; to understand whether and how such institutions can be changed and what is the role of public and private sectors in institutional change that promotes the diversification of forest activities and fosters the competitiveness of the NWFP sector in Europe”





The evolution of institutions for non-wood forest products

Good harvesting practises were found to be similar across all StarTree case studies:

- respect for nature
- respect for product
- respect for other pickers

Many people were more concerned about how picking was done than about who was doing it.

Brooks' theory suggested that informal norms – e.g. Local customs – inevitably become formalised into regulations: instead, StarTree research found that each stage is stable unless there are triggers for change.

Researchers concluded that copying & pasting regulations from one place to another is not a good response to a need for change, and instead they recommend a bottom-up, consultative approach.

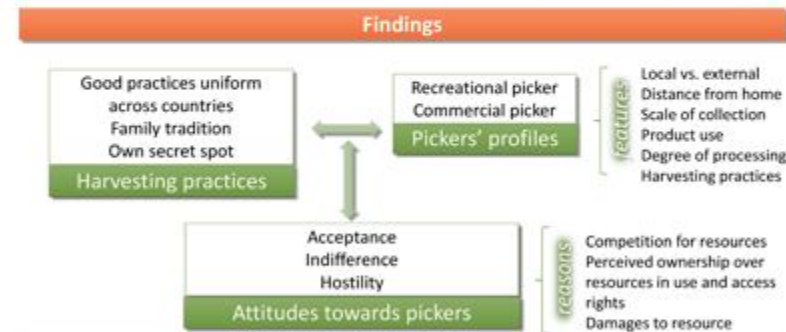
star-tree.eu/images/conference/Wild%20forest%20products%20in%20Europe%20book%20of%20abstracts%2010102016.pdf



Informal institutions governing access and harvesting of NWFP: findings from ten in-depth case studies

Prokofieva I, Górriz E, Chapman E, Corradini G, Dickson T, Ferreira A, Japelj A, Ludvig A, Martinez S, Mayr ML, Nedeljković J, Nonić D, Tahvanainen V, Thorogood A, Verdejo V, Voehl S, Wilding M.

Background	Material and methods
<ul style="list-style-type: none"> ✓ NWFP harvesting and trade is governed by an amalgam of formal and informal institutions based on statutory, customary and market norms and traditions ✓ Understanding the nature of local informal institutions and underlying social interactions is key for gaining insight into the influence of policies aiming to support and encourage NWFP sector development 	<p>10 case study regions</p> <p>Mushrooms, berries, herbs, moss, game 78 interviews</p>



Interactions between formal and informal institutions

Informal institutions frequently precede formal regulations
 Social control and social pressure complementary and substitutive to formal control
 Local informal codes of conduct for adhering to legal frameworks

Informal norms ease the pressure of formal regulations, and may enable the development of formal and informal economy, having a positive impact on local livelihoods and in some cases on the value chain

This poster highlights some of the results of the in-depth case studies documented in Prokofieva et al. (2015): Informal institutions and stakeholder perceptions of institutional role in selected regions. Project deliverable 04.3. Star Tree project (EU project 312191).



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Informal institutions governing access and harvesting of NWFP: findings from ten in-depth case studies

“Informal norms ease the pressure of formal regulations, and may enable the development of formal and informal economy, having a positive impact on local livelihoods and in some cases on the value chain”

In Scotland:

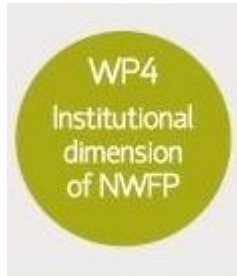
Our berry picking interviews fed in to this study – thank you!

http://www.star-tree.eu/images/posters/PDFs/IDCS_institutions.pdf



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Institutions - in-depth findings

StarTree deliverables D4.1, D4.2, D4.3, D4.4, D4.5
<http://star-tree.eu/results/deliverables#wp-4>

European
Non-wood Forest Products

Policy Portal

http://nwfp-policies.efi.int/wiki/Main_Page



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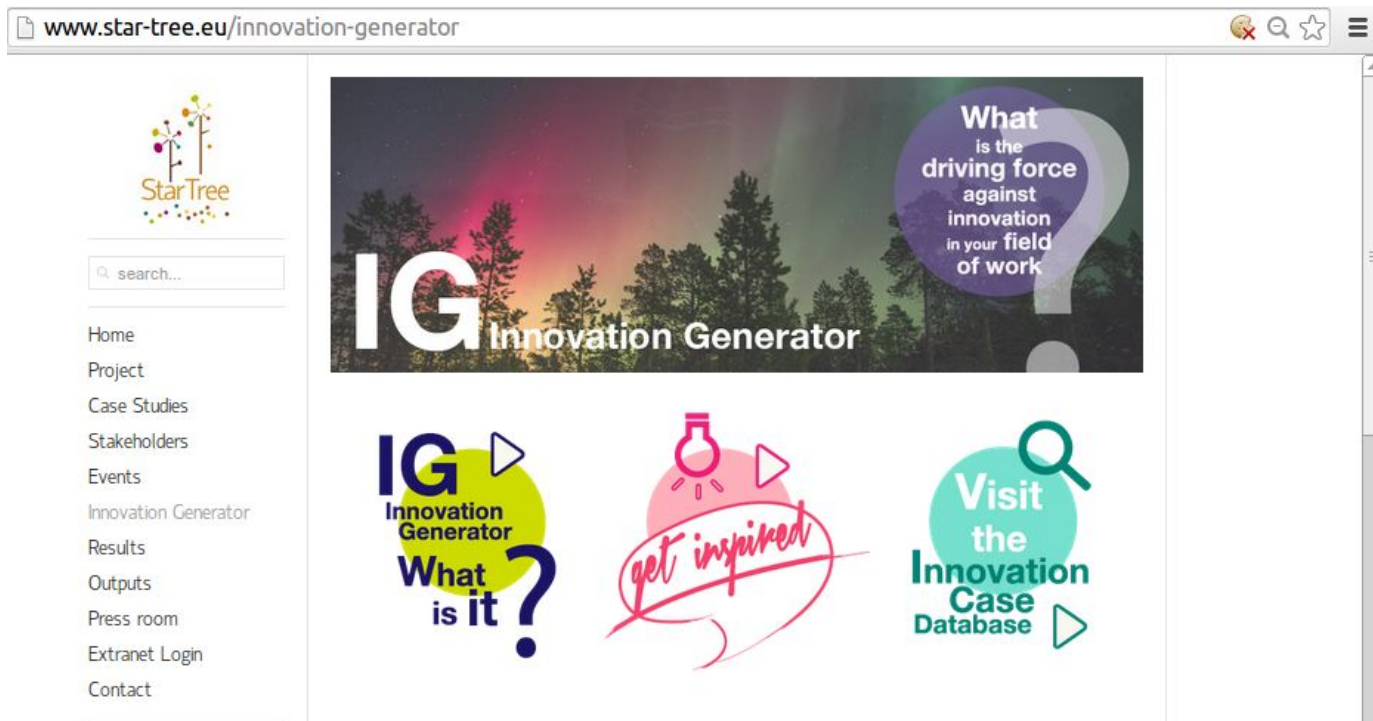
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Innovation systems and processes

The StarTree "Innovation Generator" - now online!



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WP5: Support for Innovation on private forest land: The practice of Entrepreneurship

Authors: Ludvig, Alice, Tahvanainen, Veera; Dickson, Antonia; Evard, Camille; Kurttila, Mikko; Cosovic, Marija; Chapman, Emma; Weiss, Gerhard

BACKGROUND

- Aim was to examine the characteristics of support for innovation processes in NWFP.
- Typical enterprises in the sector are small-scale and family owned.
- There is a large unused potential for NWFP to support rural development and livelihoods.

RESEARCH QUESTIONS

- What were the factors that supported their development and marketing?
- Which things were helpful for creating the innovation, developing the project and for marketing the products?

CONCEPT

- Four innovative cases in a "small" personalized sector were studied.
- There have been attempts to understand and assess the importance of the factors having impact on innovation, besides solely R&D (Edquist 1997, Edquist and Johnson 1997, Weiss 2011).

METHODS

- Empirical research in four European regions
- Semi-structured qualitative interviews with the people involved (the owners and other relevant personnel or stakeholders in each case).

4 INNOVATIVE CASES:

Introducing successfully novelties to the market

A Finnish Birch Sap Case (FI): New method of production



Scottish County Wines (Scot): From Oak leaves and Elderberries



Fine Pluck Wales (Wales): Varieties of home grown selected Teas



Mushroom Hotel (Cat): Payment Scheme for Mushrooms and Tourism



RESULTS

FINANCING +

- Mostly self-financing from main job, slow growth, low risk.
- Grants from regional sources (FI). ("no-one would have borrowed us money for that", INT 1, 5)

COORDINATION AND COOPERATION ++

- Networking via Research and Education organizations
- Own retail and institutional networks are very important.

INFORMATION +++

- Most was "self-taught"
- Some Advice, technical information, etc. of research institutes, regional authorities, regional development organizations. ("One day the knowledge took over", INT 3, W)



This poster highlights the results of four selected in-depth case studies documented in a forthcoming paper as part of the dissemination strategy in STAR TREE (26 project partners).



The Practice of Entrepreneurship: Support for Innovation on private forest land (Ludvig et al 2016)

Results: 1. Entrepreneurial behaviour

Motivation

Own initiatives to gather information, finances, networking, marketing (all cases)

Know-how

Entrepreneurs knowledge from earlier work and studies was utilized and helpful for the process (all cases)

Sources of Information

Most were largely self-taught (all cases)

Additional information acquired by own initiative from variety of sources (all cases)

More info:

http://star-tree.eu/images/posters/PDFs/IDCS_support_for_innovation.pdf

RS StarTree case study – Cairn o' Mohr Wines

<http://www.reforestingscotland.org/wordpress1/wordpress1/wp-content/uploads/2016/04/WP5-IDCS-Cairn-OMohr-Scotland.pdf>



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Innovation - in-depth findings

StarTree deliverables D5.1-7

<http://star-tree.eu/results/deliverables#wp-5>



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4th Regional Stakeholder Group meeting



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SEVENTH FRAMEWORK
PROGRAMME