EIP-AGRI Workshop

New value chains from multifunctional forests

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2. Introduction

EU forests serve a wide range of economic, social and environmental purposes and provide around three million jobs. Wood remains the main source of financial revenue and forest biomass represents the biggest source of renewable energy in the EU. However, forests also provide a large range of other products, such as cork, resins, mushrooms, nuts, game or berries as well as recreational services which are increasingly being valued on the market. Promoting new value chains for such products can be a powerful economic incentive for integrated forest management schemes, increasing forest multifunctionality, contributing to sustainable forest management and fostering rural development.

The EIP-AGRI workshop "New Value Chains from Multifunctional Forests" was organised to share examples of existing innovative value chains around Europe and explore opportunities for developing new value chains of forest products and services which are currently less-used. In this respect, the workshop focused on four groups of products and services: food, non-food and agroforestry products and leisure and recreational uses. In short, the main aims of the workshop were:

1. **Exploring** a range of concrete examples of new value chains from multifunctional forests;
2. **Critically examining** the practical challenges and opportunities for setting up such new value chains;
3. **Promoting** the setting-up of **EIP-AGRI Operational Groups** (OGs) focusing on the creation and development of new value chains from multifunctional forests;
4. **Offering** some 'tips and tricks' for setting up OG partnerships for projects that could tackle the practical challenges identified in setting up new value chains;
5. **Presenting and spreading** all of this information to inspire the creation of new **OGs** and promote wider use and establishment of new value chains from multifunctional forestry.

Workshop participants

In total 76 participants from 22 countries participated in this workshop (for details see **participants list**). As the focus of the workshop was value chains, it was important to involve participants with diverse backgrounds, so they could address the different aspects of value chain establishment (for details see Figure 1). Although the majority of the workshop participants were from the public sector (e.g. research organisations, state institutions), there was also a significant share of forest and land-owners and entrepreneurs.

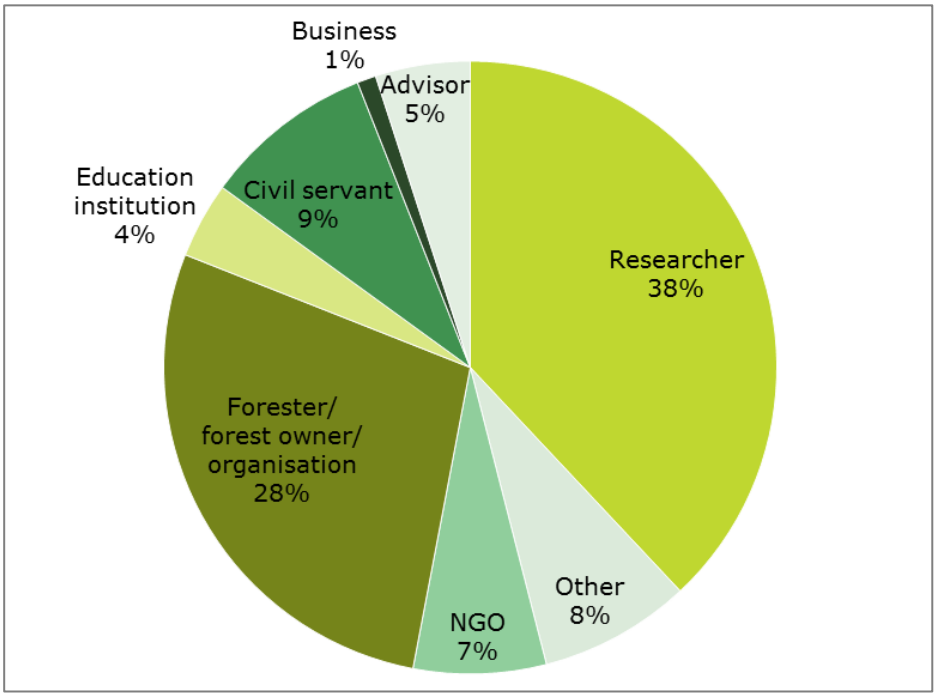

Figure 1: Background of workshop participants

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3. Value chains in the forest sector

Forests provide 25% of the resources for the EU **bioeconomy** and 50% of the EU's renewable energy. Forest and the forest based sector can therefore play an important role in shifting Europe towards an innovative, resource efficient and bio-based economy. However, in this context, the contribution of the forest-based sector has been mainly related to wood-based products and bioenergy. But forests are much more than wood. For example, non-wood forest products or "NWFP" (e.g. forest fruits, mushrooms, cork, pine kernels, acorns, medicinal herbs, essential oils, chestnuts etc.) also have an important potential to generate income and employment, especially in rural areas. The latest report on the state of Europe's forests (**Forest Europe, UNECE and FAO 2015**) demonstrated that the total value of NWFP in the Forest Europe region was estimated at 2.27billion Euros. Therefore NWFP represents around 10% of the value of roundwood produced from European forests, which is significant considering the lack of reliable data on NWFP and their role in development of formal and informal markets.

The EU's Bioeconomy Strategy addresses the production of renewable biological resources and their conversion into vital products and bio-energy.

However, to further increase the economic importance of forest products and services other than wood, a better understanding of the business opportunities and innovative business models/examples is needed. It is not sufficient to only know the availability and marketability of such products and services, but also the roles of different actors along the whole value chain. For the moment, the information on the dimensions and structure of such value chains is mostly not available or difficult to access.

For the purpose of this workshop it was considered that a value chain is a system whose constituent parts include material suppliers, production facilities, distribution services and customers linked together via the feed forward flow of materials and the feedback flow of information.

While 'supply chain' focuses its attention on the process of production and on delivery to the end-user, 'value chain' looks mainly at the value created throughout the whole process between the two ends of the chain.

Examples of new value chains

To shed some light on the business opportunities that can be developed around different forest products and services, the workshop started with an interactive poster session where a range of examples of existing value chains were presented and discussed.

The poster presentations included new value chains, classified according to four different product categories: **food**, **on-food**, **agroforestry** and **recreational and leisure uses**.

For example, in Catalonia (Spain) low quality cork or by-products of cork stopper production are used for 3D printing. This value chain includes forest owners and forest owners' associations, cork stopper producers, binder products manufacturers and 3D printer producers. This innovative use of the raw material, could increase the economic value of low quality cork by 50% and would at the same time help to promote a more active forest management. The latter is of particular importance in the Mediterranean region as it can have a positive effect on forest fire prevention.

Another innovative example of a value chain comes from agroforestry. In the UK, woodland eggs and chicken are being marketed in some of the major grocery store chains. This concept is based on poultry kept in forests,

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where they are fed with organic chicken feed and get also additional nutrients from forest fodder. Cooperation between farmers and tree growers is required. Furthermore, the added value of the product is recognised by consumers, who are willing to pay more for this type of product.

Further examples of new value chains presented during the workshop can be found in Table 1, while details can be downloaded here.

Table 1: List of posters presented during the workshop

Poster title	Presenter	Product category
"Rigoni di Asiago" CoC PEFC certified honeydew honey	Gian Antonio Battistel	Food
Wood, honey and aromatic plants	Luís Filipe Calaim	Food
Truffles from Mycoforest	Judith Evenaar	Food
Via Delicia- Local utilisation of edible non-wood forest products	Jiri Kadlec	Food
EcoSpruce: new added value products from spruce needles	Indrek Kuuben	Food
Mediterranean pine nuts from forests and agroforestry	Sven Mutke	Food
Finnish Pakuri: Speciality mushrooms	Hannu Pauli Kalervo Piispanen	Food
Amycoforest: mushroom production and forestry	Bruno Rolland	Food
Profitability of birch sap tapping in Finland	Henri Vanhanen	Food
The concept of complete forest utilisation	Nicholas S. Efstathiadis	Non-food
ResiVal: gumming and other NWFP in the sustainable management of the maritime pine ecosystem	António Salgueiro	Non-food
Phytoremediation services	Mindaugas Šilininkas	Non-food
High value 3D printed products from low quality cork raw materials	Maria Verdum Virgos	Non-food
Beealia: low input agroforestry system to produce high added value lamb and kid meat	Joan Alibés Biosca	Agroforestry
Livestock agroforestry - combining forestry with livestock husbandry: woodland eggs and poultry	Michael den Herder	Agroforestry
Herdade do Freixo do Meio, Montado System as an ancestral Agroecologic model	Alfredo Maria de Sousa Cunhal Melero Sendim	Agroforestry
How create sustainable tourism forest products	Christophe Arrondeau	Recreational and leisure uses
Trekking trail and forest exploitation in a fragmented forest	Corentin Bolyn	Recreational and leisure uses
Payments for recreational and commercial mushroom picking permits	Elena Górriz Mifsud	Recreational and leisure uses
Operational Group: OUI-GEF	Christophe Chauvin-Droz	EIP Operational Group

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4. Outcomes of the workshop

What influences the development of new value chains?

Participants of the workshop went on to discuss which factors have an important influence on the success of the value chains which were presented. The main factors highlighted during the discussion were:

Networking & Cooperation– the new value chains are based on strong collaboration between different partners, often coming from different regions and sectors. Trust, good communication and shared objectives are essential for a good functioning of a value chain.

Awareness of the multi-functionality of forests– the new value chains offer a good possibility to increase the awareness of different value chain actors (e.g. forest owners and managers, consumers) about the multi-functional purpose of forests. Such increased awareness, can contribute to the creation of more resilient forest ecosystems, a more sustainable production and use of forest products and services and an increased appreciation and value (added value) of forest based products.

Targeted resource management– securing a stable, sufficient and sustainable provision of raw materials is essential for the success of the new value chains. This requires targeted and modern forest management, which is not only focused on wood production, but recognises and fosters the production of a wider range of products and services.

Commercialisation of alternative forest products– the presented new value chains show the potential of also commercialising 'low value' forest products. They help to diversify and increase income for forest owners and strengthen the role of the forests in the context of rural development and bioeconomy.

Marketing – more importance is given to developing marketing strategies and approaches that successfully address consumers' needs and preferences. Understanding consumers is seen to be essential when developing products and business models. However, in more traditional forest product value chains this was seldom the case.

Social benefits and employment – the presented value chains offer new job opportunities in rural areas and thus contribute to a more equal distribution of income and socio-economic development in these regions. This is a pre-condition for a successful application of new value chains; as their success does not depend only on the entrepreneur, but rather on the support of the whole local community.

Tradition re-invented– the new value chains often rely on traditional knowledge and products, but use them in a new innovative way which better addresses the needs of the modern society and consumers.

Knowledge – creativity and knowledge are essential for creating new business opportunities. They should be applied in all fields of value chain creation. It is not enough to create an innovative product, it is equally important to develop a broader concept that will help to attract value chain partners and customers. Knowledge and experience sharing are important to create new ideas or improve existing value chains.

Public support– finally, most of the innovative ideas need some type of institutional support. This support is not only limited to financing innovative ideas (seed money), but also in other areas. In particular, adequate

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fiscal legislation and the regulation of the use of the natural resources are important factors that can foster or limit the development of new value chains.

Opportunities, challenges and support needed

Next, participants examined the different value chains, according to the categories in which the posters case studies were classified, according to the following questions

1. *What do the emerging new value chains have in common that makes them innovative or different from traditional value chains?*
2. *Are there any specific challenges which have been (or need to be) overcome to make the supply chains a success?*
3. *What are the 'enabling conditions' needed for the supply chains to successfully transfer to another context/region?*

The outcomes of the discussion are summarised according to the value chain category:

Food products

1. What do the emerging new value chains have in common that makes them innovative or different from traditional value chains?

Most of the value chains have their origin in **traditional uses**, but they have been developed to better meet **modern demands**. They are mostly based on **niche products** that are sold in limited amounts but have **high added value**.

2. Are there any specific challenges which have been (or need to be) overcome to make the supply chains a success?

Informal supply (e.g. hobby mushroom pickers) is a critical obstacle in securing **sufficient and stable supply** of raw materials. This also limits the interest to invest in the development of **processing infrastructures**. **Traceability** of the raw material and meeting strict **food safety regulations** are important factors that further limit the possibilities of food based value chains. Finally, more efforts should be put into developing adequate **marketing strategies**.

3. What are the 'enabling conditions' needed for the supply chains to successfully transfer to another context/region?

Better **coordination and integration** of the value chain actors, **simplified regulations** and stronger **business development support** were listed as the main conditions that would enable transferability of these value chains.

Non-food products

1. What do the emerging new value chains have in common that makes them innovative or different from traditional value chains?

These value chains are based on new, **innovative products** and business models, which target **new users, technologies and markets**. They strive to engage **local communities**.

2. Are there any specific challenges which have been (or need to be) overcome to make the supply chains a success?

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The main challenges are related to **capacity** (**knowledge**) of involved actors to develop the full potential of the ideas and understand the exact **market needs**. The development of these value chains is further limited by **strict legislations** on the use of natural resources, limited availability of resources (**money, time, people**). It is also restricted by only a limited willingness of the main actors to **share ideas** and **cooperate**.

3. *What are the 'enabling conditions' needed for the supply chains to successfully transfer to another context/region?*

A strong driver of successful transfer are **successful examples** which stimulate interest and willingness to apply innovative business models. Furthermore, favourable conditions for "doing business" (**policy, legislation and cooperation**), **availability of resources** and **support of local communities** are also seen as essential.

Agroforestry products

1. What do the emerging new value chains have in common that makes them innovative or different from traditional value chains?

These value chains are based on **traditional land uses and products**, but applying **new technologies**. The **environmental friendliness** of these products is considered as one of their main advantages.

2. *Are there any specific challenges which have been (or need to be) overcome to make the supply chains a success?*

Most of the agroforestry practices are **knowledge intensive** and require strong **commitment** of the land owner. Right **incentives** would enable a wider application of these practices. Ensuring **quality and quantity of products** is still a challenge. More efforts should be put into developing adequate **marketing** approaches.

3. *What are the 'enabling conditions' needed for the supply chains to successfully transfer to another context/region?*

Knowledge (e.g. transfer, advisory services, peer learning) is key for the success of these type of value chains. Increased **awareness and demand** for agroforestry products by the **consumers** are important enabling factors that can facilitate the transfer of such value chains to new regions. Finally, stable and **standard regulatory framework** (e.g. at EU level) is another important factor that influences the transferability.

Recreational and leisure uses

1. What do the emerging new value chains have in common that makes them innovative or different from traditional value chains?

These value chains mostly show a good **understanding of consumers' needs** by providing **tailor-made solutions**, which are **marketed** in a targeted way. They rely on a **good cooperation** of different actors form the rural (supply) and urban (demand) actors.

2. *Are there any specific challenges which have been (or need to be) overcome to make the supply chains a success?*

Nevertheless, better **capacity building** in terms of **communication** and **business development** is missing. Increased interest in forest recreation and leisure uses could provoke **negative side effects** (e.g. damage due to overuse). This requires better **regulation and organisation** of the use of these services and adequate **education of the users**. As in other cases, the **involvement of local communities** is essential to make these value chains a success.

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3. *What are the 'enabling conditions' needed for the supply chains to successfully transfer to another context/region?*

The transfer of such value chains very much depends on the local conditions, like the willingness of local actors to **cooperate** and develop good **trust**, the **capacity** of involved actors, the availability of adequate **supporting measures** (e.g. seed money) and the ability to include these types of uses into **forest management and planning** practices.

5. Possible role of Operational Groups in the establishment of new value chains

The EIP-AGRI is supporting innovation following an interactive bottom-up approach which relies mainly on co-operation, sharing of knowledge and intermediating advisory methods. This approach is applied through the creation of Operational Groups. These are groups of people (such as farmers, researchers, advisers etc.) who work together on a practical innovation project with concrete objectives. The types of projects or areas of action for Operational Groups can be very broad, but the project must contribute to the EIP-AGRI objective of promoting agricultural innovation that is more resource efficient, productive, low emission, climate-friendly and resilient and that operates in harmony with the essential natural resources on which farming depends. This might range from projects that target the development of new products, practices, processes and technologies to testing and adapting existing technologies and processes in novel geographical and environmental contexts.

Presently, Operational Groups have been almost exclusively applied in agriculture-related projects. Nevertheless, there are some examples where this instrument has been used to address forest and forestry related questions. For example, the **OUI-GEF Operational Group** (presented during the poster session) aims at developing technical and organisational innovations that help to build territorial forest strategies, which should help to promote a sustainable management that warranties the diversity of ecosystem services.

The workshop participants were asked whether and how the Operational Group instrument can be applied to support the establishment of new forest value chains. There was a general agreement that OGs can offer the opportunity to test innovative ideas (technological, organisational, social etc.) in forest product value chains and improved collaboration between actors coming from different sectors. In particular, this last cross-sectorial aspect seems to be an important advantage when comparing with other funding programmes with narrower scope.

Through the discussion, a number of concrete ideas for Operational Groups were proposed:

- testing application of new technologies for the traceability of wild collected forest products,
- implementing the use of organised use of cattle (mainly goat/sheep) to provide forest management services (e.g. forest fire prevention),
- improvement of wild plant quality for pharmaceutical uses,
- technology transfer in small scale use traditional production,
- soil quality management/improvement,
- test the application of regional management plans for forests, instead of local ones,
- developing an online platform for owners to directly sell their products to end-users,
- creating side areas for forest and field to provide and create ecological and tourism services,

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- setting up a new market providing new tourism products (e.g. mountain track with free wifi and all related products)

6. Conclusions

New value chains can offer a viable alternative to the traditional, wood-based value chains. They can help to diversify the income opportunities in the rural areas and increase the role of the forest based sector in creating a strong bioeconomy.

Nevertheless, to unlock the full potential of these value chains, further improvements are needed, particularly in following areas:

- **Business development** – identification of business opportunities, developing business plans and marketing strategies, understanding consumer preferences and needs, etc.
- **Cooperation** – in particular between value chain actors, local communities, supporting actors (e.g. institutional aspects) and sectors.
- **Capacity building and awareness raising** – all value chain actors (from forest owner to consumer) and cross-border learning.
- **Policy and legislation** – simplifying rules and procedures to enable the development of innovative uses of natural resources and safeguarding their sustainability and resilience.

All information and presentations from this workshop can be found on the EIP-AGRI website: http://ec.europa.eu/eip/agriculture/content/eip-agri-workshop-%E2%80%98new-value-chains-multifunctional-forests%E2%80%99

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AGRICULTURE & INNOVATION

The European Innovation Partnership 'Agricultural Productivity and Sustainability' (EIP-AGRI) is one of five EIPs launched by the European Commission in a bid to promote rapid modernisation by stepping up innovation efforts.

The **EIP-AGRI** aims to catalyse the innovation process in the **agricultural and forestry sectors** by bringing **research and practice closer together** – in research and innovation projects as well as *through* the EIP-AGRI network.

EIPs aim to streamline, simplify and better coordinate existing instruments and initiatives and complement them with actions where necessary. Two specific funding sources are particularly important for the EIP-AGRI:

- ✓ the EU Rural Development Policy.
- ✓ the EU Research and Innovation framework, Horizon 2020,

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Join the EIP-AGRI Network & Register via www.eip-agri.eu

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