European Network for Rural Development

Developing mushroom production in Finland's forests

EAFRD-funded projects

FINLAND

Strengthening research and innovation links in agriculture and forestry

Location
Joensuu

Programming period
2014 - 2020

Priority
Fostering knowledge transfer and innovation in agriculture, forestry, and rural areas

Measure
M16 - Cooperation

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EAFRD 101 304.1
National/Regional 139 896.2
Private 60 300.1

Project duration
2015 – 2018

Project promoter
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The Finnish Natural Resources Institute used EAFRD funding to develop the production of mushrooms for food and medicine to give forest owners an alternative income source.

Summary

Finland's forestry sector has seen major structural changes over past decades, which have hit forest owners' incomes. The market for mushrooms for food and medicine is growing, providing potential new added value from forestry. Analysis was needed to ensure the safety and quality of the products produced for the market.


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The Finnish Natural Resources Institute used EAFRD funding to develop mushroom production methods, including field trials to find the best varieties, controls to ensure best practices and communication of information on the results. Amateur enthusiasts helped in the identification of species.

Results

Creation of a new value chain, providing additional sources of revenue for forest owners.

Development of new mushroom products for food an medicines.

Increasing numbers of forest owners participating in the project.

New start-ups launched to provide services to mushroom producers.

Lessons & Recommendations

- A major obstacle was disseminating real-time information on the project's activities. Social media and other communication channels were developed.
- Suitable field trial sites had to be carefully selected to gain reliable and comparable results.
- It is essential to develop transparent criteria for selecting pilot farms to avoid allegations of discrimination.

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Context

Finland's forestry sector has experienced major structural changes over the past decades, which have hit forest owners' incomes. The sector is often seen as conservative and slow in innovating, concentrating solely on production of round wood, pulp and paper, making forest owners vulnerable to changes in global trends and markets. Forest owners have been actively seeking wider income sources from their forest holdings.

The world market value of edible mushrooms was approximately EUR 30 billion in 2013. By 2020, it is expected to grow to EUR 45 billion. However, this figure does not include other products such as medicinal mushrooms worth tens of billions of EURO.

Although berries and mushrooms are one of the major export items of Finnish Wild Forest Products (WFP), there has not been systematic and active production until now.

This project aims to develop the primary production of edible and specialty mushrooms, allowing broader sources of income for forest owners. In the future, forest products such as mushrooms may create significantly higher added value for Finnish forestry than today.

Objectives

The project aims to develop techniques for cultivating edible and specialty mushrooms to make commercial production possible on a large scale. At the same time, the project focuses on developing analytical methods to ensure the quality and safety of the wild mushrooms that are produced and picked. The project will also produce data to develop processing. The results will boost export-driven mushroom cultivation in Finnish forests.

Activities

1) Development of mushroom cultivation techniques and forest trials

a. Crowd sourcing mushroom samples for cultivation throughout Finland.

b. Selecting varieties to cultivate through lab experiments.

c. Field trials with varieties and strains of mushrooms.

d. Feasibility analysis

The development of a new value-chain was initiated by announcing a public call for samples of potential mushrooms for cultivation. Crowd sourcing was used to collect a wide range of varieties of each target species. This was not possible using the project's resources and amateur enthusiasts allowed such accuracy in species identification.

Strains purified from public samples were then selected for field studies according to results gained from lab experiments. Field trials were set up in 108 locations across Finland from the south (North Karelia) to the north (Lapland). Mushroom yields will be analysed from 2017 after which a feasibility analysis can be conducted.

2) Quality control tools

a. On-site controls of cultivation practices.

b. Controls on collection, storage and pre-treatment of raw materials.

c. Controls on processing.

To assure a high quality product, the chemical and microbiological quality was screened to develop guidelines for producers, pickers and processors. This enabled common standards for a transparent supply chain from forest to consumer.

3) Dissemination of information

Besides a final report, the information gained will be disseminated via public presentations to stakeholders, direct communication and meetings, media (print, on-line). A working group will work directly with stakeholders to discuss and agree common production standards as well as to construct a new value chain.

Main Results

The project has generated a completely new value chain from forests, broadening forest owners' sources of income. Big actors in the food industry as well as typical SMEs working in processing forest foods have started developing new products.

In the RahaRääseikkö (Money from Thicket) project, the predecessor to the SieVi-project, the aim was to have 20 farms or forest owners join and start piloting the new production scheme. In RahaRääseikkö, over 250 farms and forest owners expressed interest in starting activities. The number has increased drastically for the SieVi-project.

Information on the project's activities was disseminated via newspapers and magazines. New start-ups have launched providing services to forest owners that produce mushrooms. The full economic impact of the project on rural areas and the processing can only be estimated after 5-10 years.

Key lessons

The main obstacle in completing the project was getting information on the project's activities and results in real time. The project's resources could not cover the demand from forest and farm owners for information. Their interest was overwhelming. The number of queries by mobile and email exceeded the capacities of the project's employees.

Direct communication with all of those interested in the activities was not realistic. Therefore other means to disseminate information such as via social media were developed.

Another obstacle was selecting field sites for testing and production. The project aimed to produce reliable data to support decision-making and planning with limited resources. Therefore the forest field trial sites have to be carefully selected to gain reliable and comparable results.

As more farms and forest owners have showed interest in becoming a pilot/test farm than the project can cover, it is essential to develop transparent criteria to select the pilot farms to avoid misunderstandings and a feeling of discrimination in the process.

Additional sources of information

www.aitoluonto.fi/tutkimus-ja-kehittaminen/hankerekisteri/hankerekisteri/sievi---sientenviljely-biotalouden-toimenpiteena/