

ROSEWOOD Final Conference and Forest Innovation Workshop and January 15-16, 2020

Documentation of the Break-out Sessions

Table A - Supporting Wood and Biomass Mobilization

Facilitator: ZIESAK Martin (School of Agricultural, Forest and Food Sciences at Bern University of Applied Sciences)

Note taker: LINK Tabea

Introduction - Martin Ziesak

Greta Thunberg's arguments for fighting climate change are very valid. But saving the future of our planet means also continuing to harvest trees for a sustainable bioeconomy. Wood and biomass mobilisation were therefore inalienable in the fight against climate change.

CAREGA-Local charcoal as strategic tool for bioeconomy in "Vicenza Piccole Dolomiti" area - Marco Grendele, (Landes Group)

Background and motivation

- Valorizing the chestnut value chain was the starting point for the project
- Veneto region mountain valleys of the Piccole Dolomiti area are rich in chestnuts, but most of the village population abandoned their homes in order to move to cities
- Challenges lie therefore in property fragmentation and lost value/market for the traditional chestnut wood products as prices are too low for rendering exploiting their trees for small owners profitable
- Another challenge to wood harvesting is that a lot of forest plots are in high altitudes

CAREGA - project development

- Initiate proposal made to the Veneto Rural Development Programme in 2018, following the development of the project and a successful application for funding
- Foundation of the Association forestale Vicentina (owner's association) as operational group of the project

Main goals

Increase and boost the quality and value of wood products, while also improving forest management.

Two pillars of action:

- Forest management: Introducing shared management
- Charcoal production: An innovative carbon plant is at the heart of the project. Main advantages of producing locally are continuous supply of wood, no waiting time for the carbonization process and using oxidative carbonization.

Next steps

- Awareness raising and developing a sound market analysis as the value and USP is still not well known in the region.
- Address improvement of forest management and training.

The group discussion included the following topics:

- Branding products from local forests could be a new opportunity to increase value recognition of local forests
- Highlighting the European value of raw wood material, the contribution of forests to CO₂ mitigation etc., is very important
- Strong policy frameworks are needed to fully recognize opportunities from forests, especially social awareness needed
- Contracts for forest management around the charcoal project are very complicated; therefore, experience with forestry management contracts would be very helpful

Forest LidaRioja: Updating and enhancement of forest data in La Rioja region using remote sensing technologies: LiDAR and satellite data – David Garcia Castillo (AGRESTA)

Background

- Established in the framework of an EIP Agri Operational Group on forest inventory

Challenges tackled by the project

Facilitating sustainable forest management for wood supply, meeting the demand. One need is to improve forest planning in order to increase wood mobilization. Another challenge is fighting the increased risk of forest fires. LIDAR technology allows scanning of territory; with the technology it is possible to make a point cloud of the territorial environment, which is very useful for forestry inventories and forest monitoring as the image of point cloud makes interpretation of forest situation easier

LidaRioja – project development

- Opportunity to get funding for flights to extract data with Lidar through programme by the Ministry
- 2018: Data capture and analysis of available data supplemented by field data collection in order to match LIDAR point cloud with what is happening in the field
- 2019: delivery of products/forest management services
- Dissemination: First project workshop with 90 participants in La Rioja; second forest innovation workshop in Madrid with 75 participants.

Results

- All results available under forest-lidarioja.info; data government online tool also available
- Online tool: Shows all data available for La Rioja; possible to select any forested area in La Rioja to make an inventory of forests
- Vegetation fuel model mapping for forest fire prevention, which is already in use by government of Rioja
- Forest inventory of the main forest species for each 25 x 25 m pixel of the territory allows to assess the structure of the trees, helps forest planning and management
- Evaluation of poplar plantations and their supply potential
- Measuring supply to plywood plant
- Management carried out by forest firefighters and workers
- Technical training initiated on how to use the tool and its data with two-day seminars on the technology. Forest data will be made available publicly in order to make forest management more accessible and cheaper overall.

Operational group experience key points

- Working as a team most important. Everyone needs to have same objectives. Government is usually the customer, but in the group both sides customer and supplier work together
- Big opportunity to communicate and transfer results. Is particular important since most technical projects do not include dissemination means
- Constant inventory allows better forecasting and monitoring

The group discussion included the following topics:

- Expansion of Lidar technology to scanning forest road network possible, but not implemented in LidaRioja
- Availability of data for private forest owner is a point of discussion in many European countries. In Spain and Finland to some extent data on forest property is largely publicly available. However, given the technical level of data, experts/specialists are still needed to interpret and use the data.
- Regular scanning of forests is necessary to update data
- Costs are comparable to traditional methods of forest inventory. However, if entire regions were to be covered at the high precision the technology allows, costs approximately would be 5 to 10 times higher.
- Creation of a European wide forest data repository and network would be beneficial to all stakeholders

- LIDAR is not only useable for forest inventory. It is very versatile and bears great potential for digitalizing the sector in general.
- Branding all purposes of the forests could be easily done with LIDAR data or by using the data to assess, illustrate and disseminate the added value of forests
- Replication of the project in other regions envisaged. Currently pilots in Germany and Finland, but more partners sought for test and scale-up of the approach.

Main conclusions from the table discussions

- Better communication means are needed to boost awareness on forest value. Opportunities that lie in an active forestry sector/wood harvesting need to be explained better as people are not connected to reality of biomass harvesting opportunities.
- Social and economic aspects of forestry are often forgotten. Advantages of sustainable wood mobilisation need to be better known. Communication on these issues are therefore key.
- There is a need for digital infrastructure (e.g. funding for Lidar data acquisition) and adequately regulated access to data.

Table B - Supporting the Provision of Ecosystem Services

Facilitator: PETTENELLA Davide (SINCERE H2020 Project)

Note taker: GARCIA DE ARANA Ángela (CESEFOR Foundation)

Inishowen Uplands European Innovation Partnership Project - Henry O'Donell (Inishowen Uplands (EIP))

Inishowen is a small peninsula with 2500 farms, mixed farming mainly cattle and sheep, many consist of lowlands, uplands and commonage. The Project began with six farmers around a table to find innovative procedures to improve the profitability and sustainability of farming in Inishowen.

Objectives

- Upland grazing with cattle
- Agroforestry
- Establishment of diverse clover swards
- Establishment of red clover for fodder conservation
- Pond creation
- 11% of land of forestry (despite there's no history of forestry in Ireland)
- All kind of companies were buying land to plant trees, but they are causing displacement of local community.
- Climate change mitigation key problem: The Department of Agriculture and managers wanted to substitute some cattle areas, but foresters suggested agroforestry not to displace farmers and local communities.

Agroforestry supporting conventional agricultural enterprises

- Extending the grazing season
- Providing shelter to farm animals
- Prevent disease spread between animals
- Capture nutrients from the deeper soil
- Improve water infiltration/dry upland
- Reduce the need for housing of animals
- Increase biodiversity
- Increase carbon sequestration

Where to locate agroforestry:

- On existing boundaries beside hedges
- In exposed areas
- In wetter areas and areas where water flows can be reduced

- Beside existing trees
- Where we will increase the resilience of the farm
- To join upland corridors

White clover based diverse swards (very little research)

- Reduce nitrogen fertiliser use
- Improve drainage of soil, etc.

Farm ponds (there's a very poor use of them, although there's a huge amount in the region)

- Increase biodiversity
- Provide flood mitigation
- Farm water supply

Farmer participation:

- Approximately 30 farms.
- Full engagement with as many of measures as possible
- Detailed analysis of measures established and maintained on farm
- Detailed analysis of financial returns from measures
- One to one consultation and advise
- Group consultation and workshop sessions
- Detailed analysis of performance
- 21st of June 2019 was the deadline for receipt of farmers' completed applications. A second call may happen when level of engagement of each individual participant was measured to ensure full budget is allocated

Conclusions

- Agroforestry is a long term project and results will not be evident over a short period
- Measurements of results of all types is crucial
- Huge potential for climate change mitigation
- Ireland has no history of agroforestry
- Trees have a place in all farming systems and have an opportunity to provide additional income to farmers.

The group discussion included the following topics:

- What would happen under different climate change scenarios? Too much dead material doesn't capture carbon and is a risk for fires. Diverse swards increase the depth of the soil, huge benefit for carbon sequestration. Ponds also serve for carbon sequestration, adaption for agroforestry.
- Limit of the number of cattling is included in the management plan. It is using an ecological assessment pointing at the best local area, type of animals, etc.
- Trees shelter for animals is discussed, but open questions on what tree and what number to put where. Expert advice is needed, but not trial and error. It has to be considered in the long term. They will not plant conifers, they'll continue with diverse local species, but it depends on the negotiation with farmers.

Landscape Ecological Planning as a tool for Maintaining Ecosystems Services in Forestry - – Kirsi Marja Kprhonen (Metsähalulitus), presented by Kari Mäkitalo (Luke)

Metsähalulitus manages 9 mill hectares (land area). The organization existed before the Independence from Russian empire. Ecosystem services produced by Finnish foresters (based on Kniivila et al 2011): production, regulation, cultural and support services.

The economic value of the production services (including nature tourism) has to be measured. Planning levels in state Forests in Finland: Geographic information systems, Natural resources plan (Landscape ecological plan, Operational plan), Participation/collaboration addressing ecological, economic and social issues such as suomi people (the only indigenous people in Europe).

Natural resources and land use in the GIS system with tools for erosion control in Forestry. Lidar scanning is the main tool for mapping tree stand and other forest data. Biodiversity forms the basis for producing wide range of ecosystem services.

Principles of landscape ecological planning

- Landscape ecological plan is a multi target forest plan which combines ecological targets to maintain biodiversity and the management of multiple use of forests.
- Forest area is viewed in a big picture consisting of the protection areas, recreation and other special areas and multiple forests.
- Nature sites and other set aside and restricted forestry areas in multiple use forests are planned to supplement the protection areas and develop biodiversity entities.
- Landscape ecological plans are renewed (it's been done since the nineties and now revised)

Other key points

- Mapping of risk areas due to climate and other natural conditions
- Ecological network, Eastern Lapland
- Cultural heritage inventory
- Nature sites and ecological connections (Hirivasselkä reindeer corral area: 395 ha) with forestry limitations inside the fence.
- No forestry on valuable lands: Key biotopes and their valuable structural features are saved.

Climate Smart forestry Project targets:

- identify the importance of forestry areas in carbon sequestration and storage as a whole
- examine how carbon sequestration and storage can be enhanced thorough forestry measures
- create a carbon based classification method as a practical tool for planning forest use
- improve Metsähallitus' ability to make climate friendly decisions in its forestry activities.

Inclusive land use planning ensures local people's and interest groups' genuine influence

- Public participation is the means to provide the local people and interest groups the possibilities to influence their living surroundings and to take into account the traditional uses of state lands.
- To combine the various uses of state lands, Metsähallitus has adopted a holistic and inclusive land use planning: Natural Resource Plan, including the landscape ecological plans.
- Basis is the online geographic information system and everyday connections to local and regional stakeholders.
- Cooperation groups with local touristic companies, villages and reindeer herders.
- New participation methods, such as collecting data of sites of public interest via internet maps.

SINCERE H2020 project -Davide Pettenella (Università di Padova)

Overview

- Review and analyse innovations related to forest ecosystem services
- Develop, implement and analyse innovation action case studies
- Run a Learning Architecture for these innovations
- Synthesise knowledge & upscale findings into transferable innovative mechanisms
- Work towards a coordinated European Policy Framework for forest ecosystem services (FES) provision

Review and analysis in Europe

1. Connecting science, policy and practice: Inventory of Innovation Mechanisms in Europe:
2. Consulted DB: (various sources), classification of 83 experiences
3. Inventory of innovation mechanism in Europe
4. Synthesis report on best practice design and Implementation of Payments for FES and other Innovation Mechanisms to support biodiversity, improve water management, to improve soil management and/or prevent soil erosion and to improve carbon sequestration and conservation.
5. Demand for policy support report.
6. Pan European survey on forest landowners and manager perceptions on FES.

Other activities and key points

- Learning architecture for innovation: Co-creation, co-design & co-implementation

- Innovation Actions for Forest Ecosystem Services: several successful projects in Italy, Spain, Russia, Finland, Peru, Denmark, Switzerland, Croatia and Belgium.
- Transferable innovation mechanisms
- Towards a European Policy Framework for FES:
 - Science-policy-practice interaction throughout project
 - Event: Synthesising results and delivering policy recommendations – SynPol (2021)
 - Policy brief with suggestions for a coordinated European policy framework for supporting IM for the supply of FES

The group discussion included the following topics:

- Responsibility for carbon sequestration public but with the support of companies. Forest market collapsed because of lack of support.
- Biorefineries and wood as a source for energy raise some worries when looking at the impacts on forest society, because this has not much value. Forest management is a key factor. For 20 years they managed a forest and now they'll get some benefits. The private public ecosystem is important.
- Not only wood - pulp factories are very important but in the future you have to improve that: cattle, road construction, and diverse the business and ecology system.
- Governance is a key issue to cope with climate change, also local perspective on how to manage, job creation, collaboration, etc.
- Support forest management by promoting the total protection of ancient forest but now forests are aging, now taking species from outside the area.
- Traditional management trying to be recovered including local and ancient knowledge. But there is a Budget reduction 30% of %. Private companies are crucial in supporting forest management.

Main conclusions from the table discussions

- Great role can be played in the future by agroforestry system (many different definitions and visions). For this, traditional local knowledge is important.
- There is the need for consolidating real participation in land use planning.
- A possible reduction of public support to the provision of forest ecosystem services (see payments scheme under RDP, 2nd pillar budget cut) is critical. Enlarging the support by the private sector to ecosystem service provision (PES and forms of financing) is needed.
- Wood mobilisation is a concept not totally suited to the demand for innovation. Forest products are more than simply wood and timber (i.e. products with high added-value potential and positive impacts on employment).
- Bio-refineries development could be a risk by increasing the demand for low-quality wood (biomass) and therefore poor level of forest management and low income for the forest owners.

Table C – Managing Impacts related to Climate Change

Facilitator: COCCHI Maurizio (Resilient Forests LIFE project)

Note taker: LEPISTÖ Tanja (East North Finland Regions)

Themes and business cases of the Food Forest Concept in standard forestry areas – Marieke Karsenn/Frank Gorter (The Plant)

There is a growing demand for maintaining and restoring biodiversity in forests. Food Forest concept is one solution to combine people's needs to utilize private forest as the source of income, produce local food and food based services and increase the biodiversity of forests.

By changing and increasing the variety of plant species in the forests and producing food without pesticides and fertilizers, the concept offers to:

- restore the soil
- regenerate life

- resilient forests, less a monoculture
- sequester carbon
- hold water much better and
- connect forestry with our health and food systems

There are already positive results of land productivity compared to wood harvesting. But research concerning the economics of different levels of Food Forest Concepts is still needed.

Production and use of "kilometer zero" substrates for nurseries – Rafaleal Caceres (IRTA)

Forest residues, branches, leaves, stumps can be exploited for producing growing media for nurseries in a circular economy approach, reducing the use of peat and coconut fibre. Benefits of using local forest based residues for growing media of nurseries are:

- increase of managing the forest biomass
- reducing risks of wildfires
- improving the sustainability of the growing media production

Research is still needed to address the issues of profitability of this method and maintaining the biodiversity and fertility of sites where the forest residues are harvested. Best practices can be reflected to Finnish science based guidance for the density of harvesting energy wood.

Main conclusions from the table discussions

- Use of natural resources is not itself automatically sustainable. Developing substitutions from one resource to another has to be based on science and measurable sustainability.
- Global trends such as local food, do it yourself food, ethical and ecological food, awareness on climate and biodiversity within consumer behaviour support the idea of Food Forest Concept.
- Diversity of species and ecosystems as well as of human's nature based productions is a key to resilience and a prosperous economy based on the sustainable use of resources of resilient nature.

Table D - Improving Sustainable Forest Management Approaches and Tools

Facilitator: VENTRE Toni (Mediterranean Forest Model Network)

Notes: HAVUKAINEN Ilari (Regional Council of Lapland)

Mediterranean Model Forest Network - Toni Ventre

It is the world's largest network dedicated to sustainable landscape governance. The idea is to move away from valuing forests only for timber towards a vision where social, environmental, economic and cultural benefits would be considered equally. There are six networks globally: Canada, Asia, Africa, Mediterranean, Northern Europe and Russia, Latin America.

Development of a uniform support system of Wood flow management for more effective Forestry development in Latvia - Janis Magaznieks (SIA Management of Latvian timber measurement and accounting)

Latvian wood industry has adopted a systematic standard and model for measuring of quantities throughout the whole supply chain of timber. Previously this was not the case. It was a starting point for a common project idea already in 2005. Despite papers are still used, the project targets towards more ICT based system and seamless data flow serving all the partners equally. The project implementation has been planned around following six steps:

1. Masterdata development and maintenance: systems need to communicate with each other. It took one year to decide on classifications and codes for the system: organisations, assortments, reject reasons, matrix or measuring specification, trucks...).
2. Database API service development for organising e-waybill flow (Delivery instructions, Delivery message, Shipment status, Measuring ticket)
3. Waybill format papiNET xml. from the forest owner until industry (papiNET)

4. Agreement on measurement equipment working principles (e.g in Latvia 30 types, from one-year-old to 20yo)
5. Volume and quality assessment Standards (from person measuring logs in the water from a barrel to digital solutions)
6. Business process and data flow analysis for receiving and sending data from forest machinery by using StanForD 2010

The short-term goal for the project is that in few years they will convert the whole system how the timber flows in Latvia where 54 % land area is covered by forest. At the moment the system can produce a testing report in 70 seconds instead of earlier two days. Next steps are scale-up and including more pieces from the value chain like harvesters.

The group discussion included the following topics:

- Latvian model is based on Swedish measuring system and the two biggest players of the market where agreeing the terms for this strategic development while they control 80 % market, which is around 11 million m3 in total harvesting.
- Money from EU and public sector was in key role for such a development step

GO SPNA - Precision silviculture in Nouvelle Aquitaine - Henri Husson (CNPF)

Two tree species (Chestnut and Maritime pine) were chosen to be focused on through several type of actions. Actions such like mobile apps, measurement guiding, forest management guiding and training for foresters were directed towards private, regional and national forest owners. Also, the quality measures and different types of training and mobile apps were introduced and adopted in the project. Also synergies and opportunities for EU projects were looked at.

The mentioned carbon label raised some questions and it is under command of Minister of Energy and Centre for private forest owners. The basic idea is to encourage the forest owners to understand the concept of carbon storage and the ways to sustain and increase it based on actual calculations. This adds also to the ROSEWOOD Project database where there are several tools for sustainable forest management.

Main conclusions from the table discussions

- It is more and more important to bring the forest sector and forest biodiversity to the same table. It's necessary to improve cooperation and closing the gap between environmentalists and industry. More emphasis should put to this kind of cooperation.
- There is not enough knowledge transfer yet nor cooperation between citizens, forest productive sector and environmental stakeholders working not only for protected areas of the forests.
- The public sector has great responsibility for tool development to improve inventories, data and its quality, such like updating 3D data. Around EU, countries have good examples how to get data from private forest, but the public sector has to create equal opportunities. This includes also capacity building on forest management among forest owners.
- More focus is needed on defining an effective way to promote awareness of citizens about the role of sustainable forest management to maintain forest multifunctionality.