

INTEGRATING PRIMARY PRODUCERS INTO BIOBASED VALUE CHAINS

SESSION #3: INNOVATIONS AND CHALLENGES IN PRODUCTION AND MOBILISATION OF BIOMASS

07 December 2023



Integrating Primary Producers into BioBased Value Chains

Session #3: Innovations and challenges in production and mobilisation of biomass

AGENDA SESSION #3

Thursday 07 December 2023 from 9:00 am to 12:00 pm CEST

09:00 – 09:15	Main room – Presentations in English/French Warm-up: Where are we located?
09:15 – 09:35	From Trash to Treasure: Innovative soil substrates from food waste Natalija Burgieva, MamaOrgana (North Macedonia)
09:35 – 09:50	Planning, harvesting and storage: big challenges in fiber crops production Soazig PERCHE, Chamber of Agriculture of Brittany (France)
09:50 – 10:10	Understanding the dynamics of mobilising producers Sophie RABEAU EPSZTEIN - Chamber of Agriculture Normandy (France)
10:10 – 10:20	Short break

10:20 – 11:20	Break-out rooms Moderated in your language by a facilitator in your region. Collective discussions. See page 2
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	Short survey: give your feedback on the training



FROM TRASH TO TREASURE: INNOVATIVE SOIL SUBSTRATES FROM FOOD WASTE

Burgieva Natalija, Mama Organa BIO
CEO/Founder
Skopje, 2023

PRESENTATION 



PLANNING, HARVESTING AND STORAGE: MAJOR CHALLENGES FOR FIBRE PLANT GROWERS

Soazig Perche

Chamber of Agriculture Brittany,
France



➤ Presentation prepared by



- Soazig Perche: Organic farming researcher and adviser at the Brittany Chamber of Agriculture



Brittany, 1^{ère} agricultural region in France and 1^{ère} agri-food region in Europe

27 000 EXPLOITATIONS
AGRICOLES



84 %

des exploitations
consacrées à la
production animale...



37%

... dont plus du tiers
consacrées à la
production laitière.

Source : www.agreste.agriculture.gouv

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Societal: Renewal of generations of farmers

Half of Breton farmers will retire in 10 years' time

Brittany is set to lose 25% of its farms in 10 years (-20% nationally)

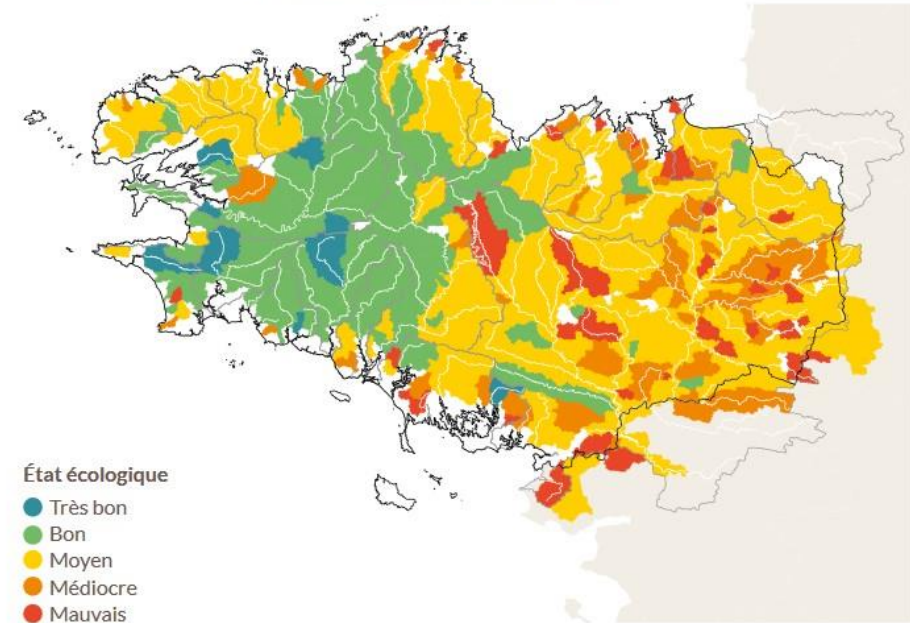
➤ The challenges facing agriculture in Brittany

- Environmental: The quality of watercourses needs to be improved

Pesticides in surface water

Nitrates in surface water

État écologique des masses d'eau « cours d'eau »
Période d'évaluation 2015 - 2017



Local authorities get involved in restoring water quality and limiting the impact of farming activities



Emerging fibre plant sectors in Brittany

What projects for the region?

➤ An overview of what's possible in Brittany today

Cereal straw

Farm know-how and equipment
But competition from livestock needs

Flax fibres

Emerging, fast-growing private initiatives
West Brittany zoning for the moment

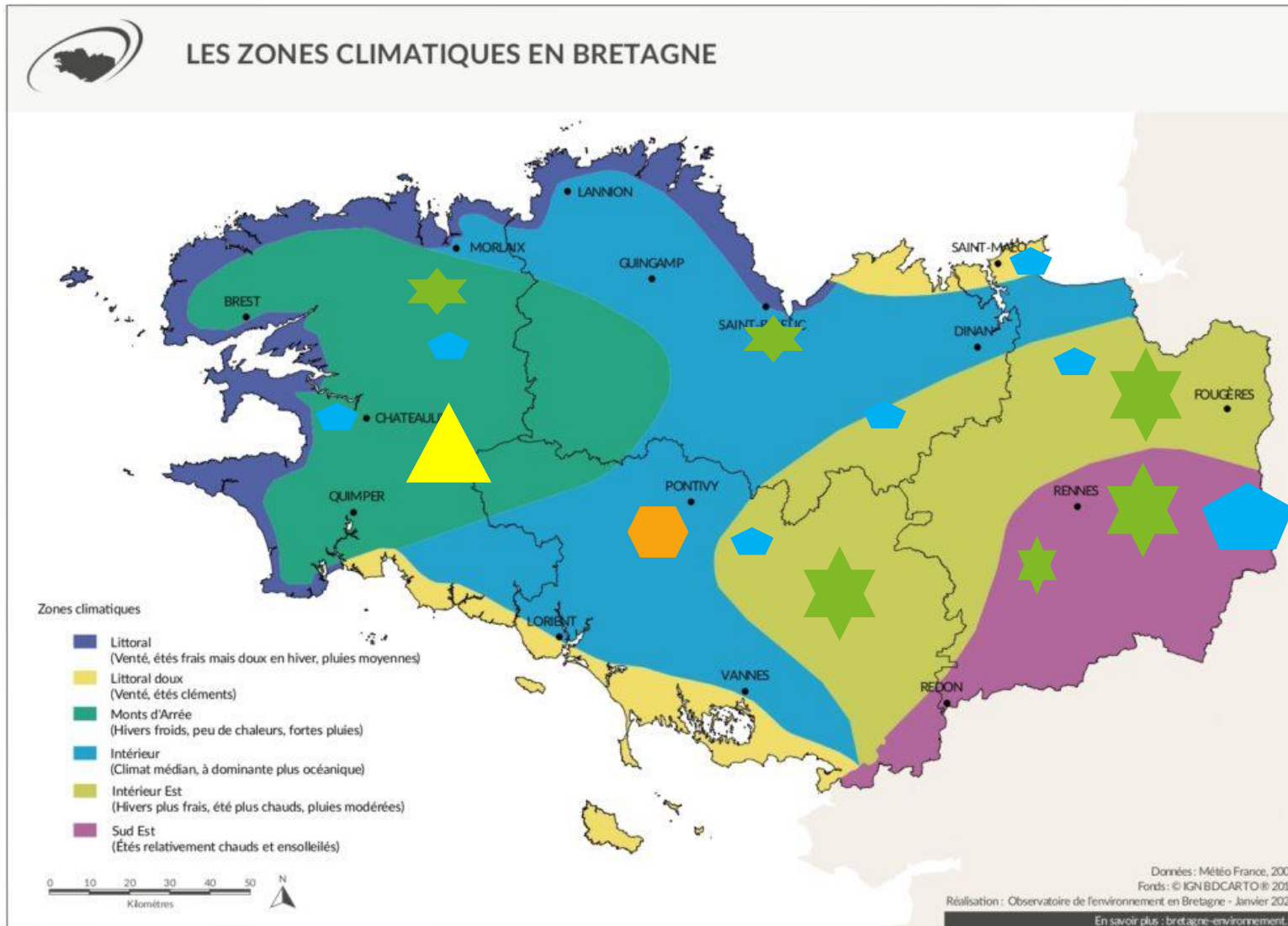
Hemp fibres

Still confidential in Brittany - very little effective
cultivation equipment / no primary straw processing
facilities in Brittany

Miscanthus

A variety of initiatives over the last 10
years - both individual and collective

Emerging projects in Brittany





Emerging fibre plant sectors in Brittany

What are the plans for farmers?

Flax and hemp: heritage plants in Brittany



A curiosity about technology

Hemp village

In Amanlis (35) during the
Fête des Jeunes
Farmers on 27-28/8/2023
3000 visitors in
a weekend



A popular success



Tasting of products from the local food industry



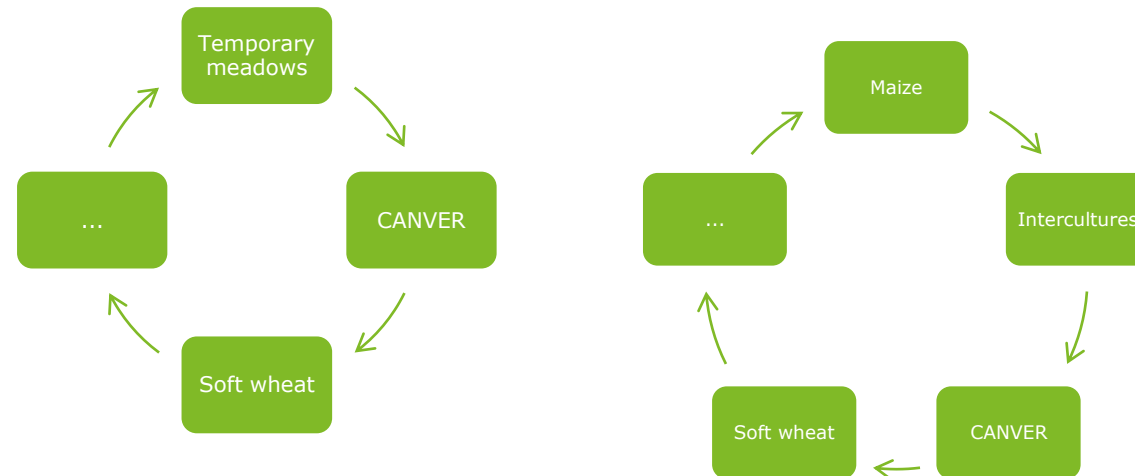
Demonstration of building expertise

Integrating a fibre plant into a cropping system: the agronomic basics

- **Choice of plot**: Good soil depth, absence of hydromorphy, soil pH and fertility, grass cover, compaction, etc.
- **Crop rotation**: No mustard cover for hemp - Variable crop return depending on the species: 4-5 years for hemp, 7 years for flax.

Points to watch :	
pH target: 6.5 minimum	If not, lime on installation
Compact soil	No compacted soil Deep ground cover essential Prepare the seedbed well: it's a small seed
Wet soil	Well re-wetted soil No damp, heavy or hydromorphic soil
Surface stones	Avoid their presence in straw bales → roll after sowing if necessary

Example of rotations





Integrating a fibre plant into a cropping system: the economic challenges

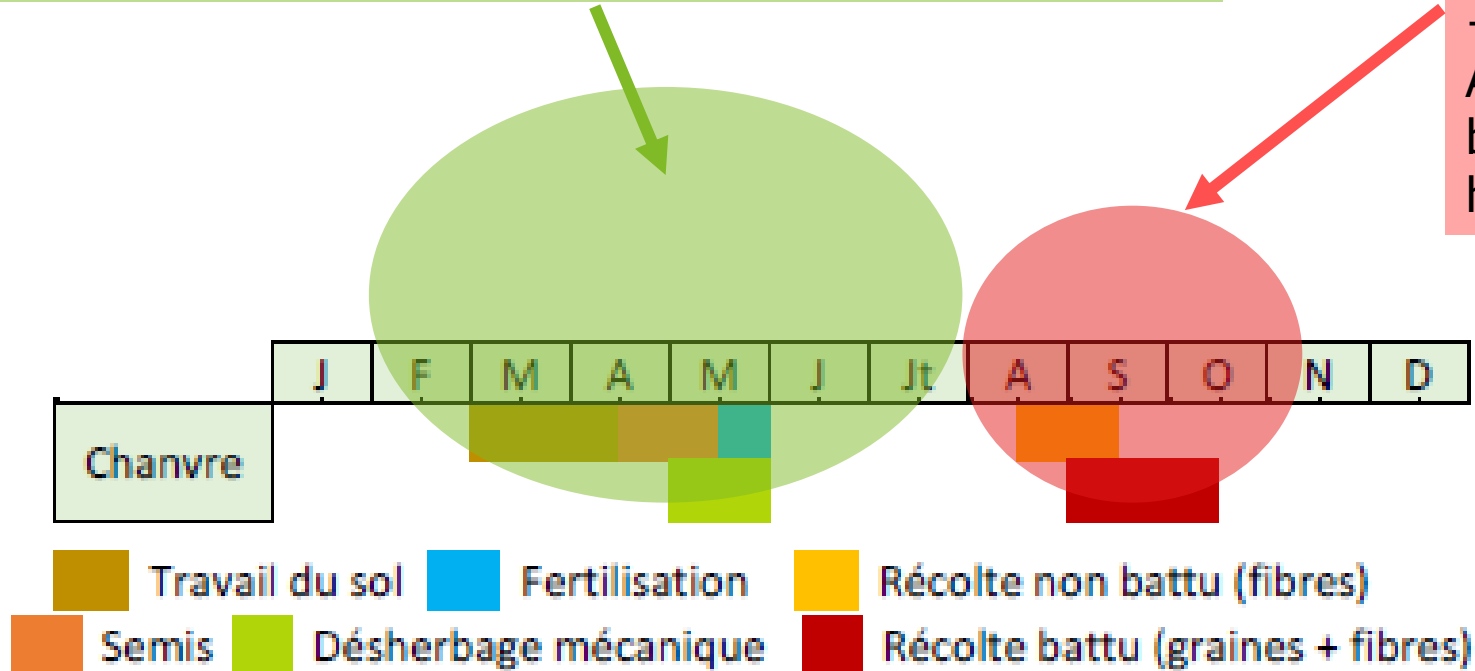
- Conventional: need to make the most of the straw "material" AND the seed
- Organic: the seed outlet is suffering from the drop in organic consumption

-> It is necessary to add value to the 2 products at current prices in the sector.

Integrating a fibre plant into a cropping system: the technical challenges

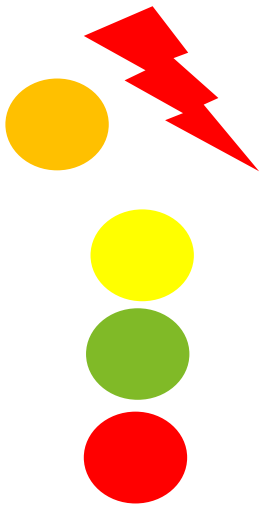
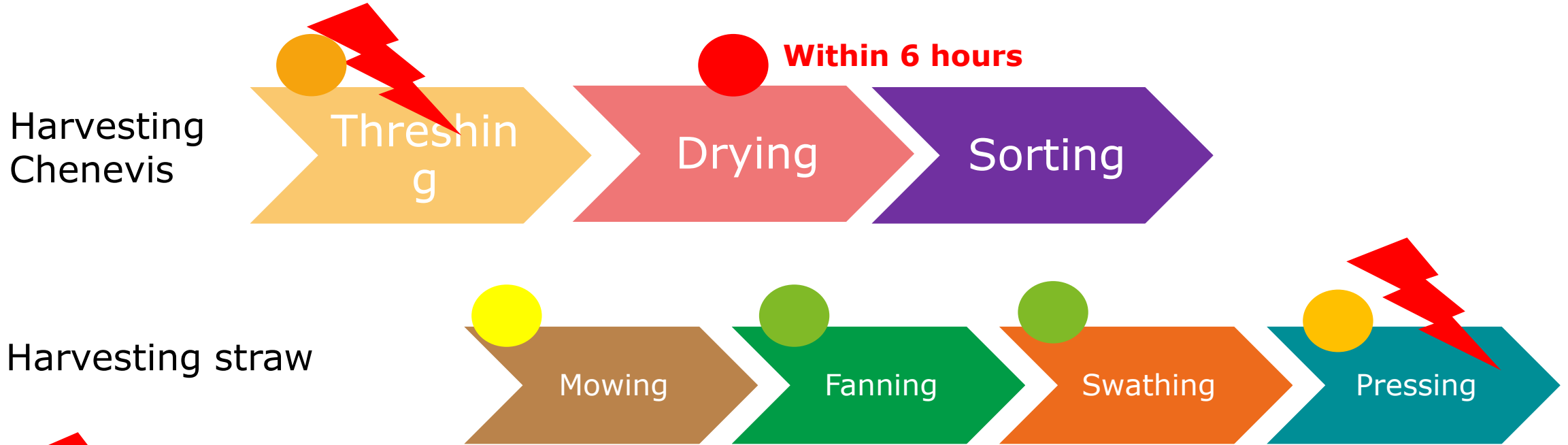
Classic control of a spring crop :
No equipment at stake
Simplified management: zero phyto - mechanical weeding rare

Fibre makes harvesting difficult
+
A very fragile seed to be dried within 6 hours of harvesting



Harvesting hemp: Securing the harvest first and foremost

Technique 1: Harvesting the seed and straw in 2 passes



Equipment available from ETA/CUMA but to be adapted specifically for hemp harvesting
Risk of failure - Preparation of equipment and driver expertise are crucial

Specific equipment but present on certain farms (e.g. Busatis section mower)

Common equipment used on farms or by service providers

There is currently very little equipment in Brittany

Hemp harvest in pictures

Incorrect setting of the threshing drum :
10 m in the field: 2 hours to break ground



Faucheuse à section
Busatis



Andaineur birotor



Round bale pressing



Integrating a fibre plant into a cropping system: the challenges for the sector and product standards



Example of **dryer boxes** with a biomass boiler (Agro-Logic in Mayenne)



The crop is poured directly into the caisson. deposited at the farm and then transported to the drying unit where the product is stabilised before sorting

Integrating a fibre plant into a cropping system: the challenges of organising logistics - storing hemp straw on the farm



On-farm straw storage: opportunity or obstacle depending on the situation

- Fibre industry practice: 6 to 18 months' straw storage on the farm
- Withdrawal according to the needs of the processor
- Use of buildings on the farm
- Investment in or hire of recovery equipment: telescopic forklift, farm valet, etc.



Integrating a fibre plant into a cropping system: the challenges of innovation and better market development



More attractive margins than in
Materials opportunities

Investment costs
very important

A sector to be evaluated on our
territory

Introducing a fibre plant to a farm: levers for mobilising farmers

Summary of a discussion meeting between a group of farmers and elected representatives from the Roche aux Fées Community (35)

- **Controlling the technical itinerary: Support and training**
- **Competence of service providers: ETA, CUMA on the adjustment and choice of equipment according to the outlets**
- **Economic profitability + Risk management (payment deadlines, investment aid, collective investment)**
- **Contracts with reliable partners for high added-value outlets**
- **Playing an active role in the sector to control the value chain**

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Point to watch: Harvesting hemp during the fodder harvest - How can we ensure that farmers and service providers are mobilised and available?

Overview of potential players in the fibre plant sector - Summary of a 1/2-day exchange of views between players in the hemp sector

- Regional environmental issues: water quality, biodiversity
- Strong societal expectations for the development of virtuous relocated industries
- Few economic levers for small communities

Local authorities

Industries 1^{ère} and 2^{ème} transformation

- Many project developers as end users of products
- 1^{ère} processing industries not very present in Brittany

- Diversification of crop rotation
- A taste for novelty
- Economic profitability of the business
- Working hours and availability / other farm activities
- Equipment to be secured
- Competition with other opportunities (energy production)

Farmers

Agricultural service providers

- Dynamic service providers in the West :
- experience of working in an equipment-use cooperative
- Very good network of private service providers - agricultural contractors - in the region
- But investment is needed + the challenge of a trained and available workforce

UNDERSTANDING THE DYNAMICS OF MOBILISING PRODUCERS

Sophie Rabeau

Chamber of Agriculture Normandy,
France



Available biomass

- What sources are available?
 - potential sources
 - \neq
 - sources that can actually be mobilised



Technical challenges

- Specificity of the equipment
 - Harvesting tool
 - Dryer
- Place of use
 - Storage
- => Resulting in specific costs



New markets, new players and new criteria

- **New contacts:** e.g,
 - energy suppliers/heating plant operators
 - suppliers of co-products and waste for methanisation
 - methanisation maintenance suppliers (e.g. spark plugs)
- **Different timescales:** multi-year contracts
 - A new concept for farmers: indexation to secure buyers and sellers?
- **A new profession:** simply being a supplier or investing in the industry? What skills do you need (legal, technical, sales, communications, logistics, etc.)?
- **New units and criteria:** MWh, silica content, etc.



Added value

- Making cultivation economically attractive
 - Buying biomass at the right price
 - Paying for crop costs
 - Diversification of income sources
- Involving the farmer in the project
 - Shareholding
 - Project sponsor



Acceptances

- Acceptability constraints
- E.g.: public enquiries for methanisation units
- Ex: the need to overcome habits,
- For example, in the construction sector, the weight of habits and training
- => Blowing straw, which will enable craftsmen to use the same tools as for cellulose wadding = adapting biomass to existing uses



New logistics

- Out of area deposits
- Often one harvest period per year
 - ⇒ Requiring storage
 - ⇒ or complementarities

E.g.: in methanisation, complementarity of manure and grass clippings



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Collective discussions. See page 2

11:20 – 11:30

Short break

11:30 – 12:00

Main room – Presentations in English

Feedback on the key outcomes and questions from the breakout rooms
Conclusions and how to move forward.

Short survey: give your feedback on the training



BREAKOUT ROOMS DISCUSSION TOPICS

1. Main crop or by-products, are there differences in the challenges faced at production level ?

2. Growing and harvesting for biobased value chains: expectations from the market, challenges and opportunities, innovations in production

3. Storage and mobilisation of biomass: bottlenecks and solutions at producer level



BREAK-OUT ROOMS

You will be sent automatically
in a few seconds

BO Room starts with 10 minutes Coffee Break
Please come back soon !



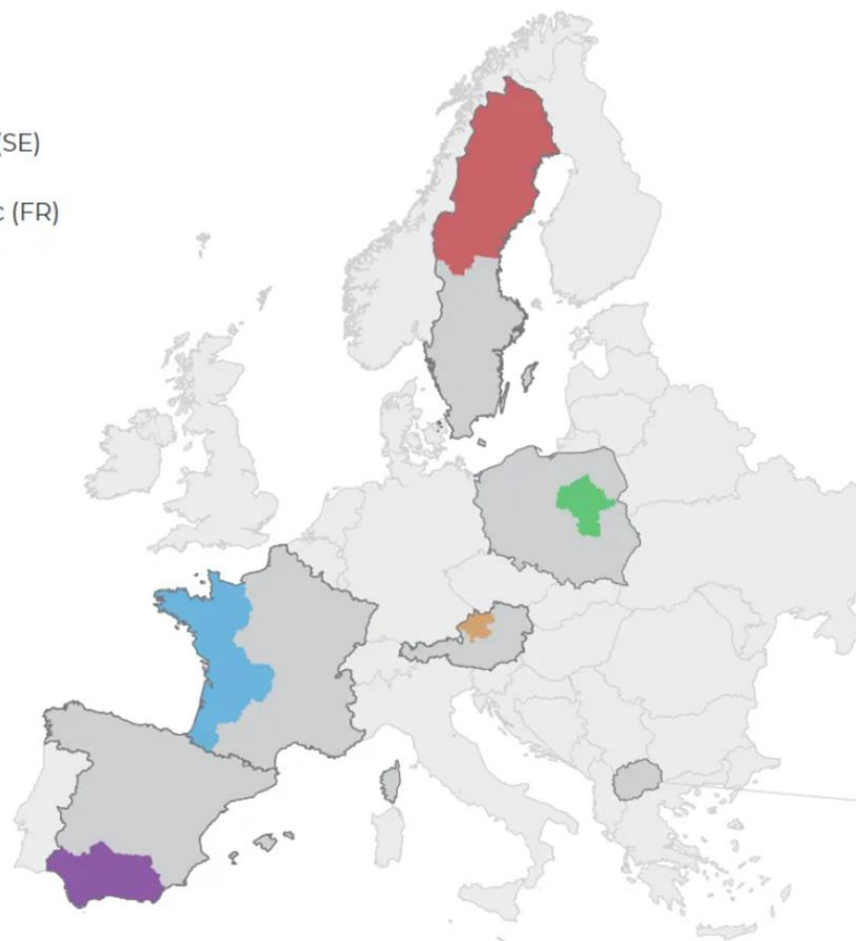
FEEDBACK SESSION

Starts with 10 minutes short break
Please come back soon !



SCALE-UP regions

- Northern Sweden (SE)
- Mazovia (PL)
- French Atlantic Arc (FR)
- Upper Austria (AT)
- Strumica (MK)
- Andalusia (ES)



1. Main crop or by-products, are there differences in the challenges faced at production level ?

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CLOSING WORDS

SCALE^{UP}
community-driven
bioeconomy development



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101060264.

WS2: RECAP

November 9, 2023

Session 1 "Production of biomass from Farmers and Foresters"

November 21, 2023

Session 2 "Value chains and markets: linking producers and stakeholders"

December 7, 2023

Session 3 "Innovations and challenges in production and mobilization of biomass"

- 11 presenters from France, North Macedonia, Austria, Germany, Sweden
 - ~120 participants engaged in the three sessions from 12+ countries
- Represented sectors: agriculture, food, forestry, research, cluster, multisectoral, private, public, energy, green transition

- Miscanthus biomass production and use cases
- Large-scale composting plant
- Forest owner's story
- Successful project consultation focusing on the transfer of knowledge from soil and water protection theory to agricultural practice
- Involvement of producers in the establishment of a new value chain

- Sustainability and circular economy potentials related to food waste
- From Trash to Treasure: Innovative soil substrates from food waste
- Planning, harvesting and storage: big challenges in fiber crops production
- Challenges in mobilization of producers to match the demand from value chains

WS2: RECAP

Session 1 "Production of biomass from Farmers and Foresters"

- What are the biomass types available from your producers ? What is produced where ?
- Dedicated crop or by products from main crops: what are the main differences ?
- Potential for the future : what could be the new opportunities ? What are the driving factors: emerging markets and value chains, change of practices, climate change ?

Session 2 "Value chains and markets: linking producers and stakeholders"

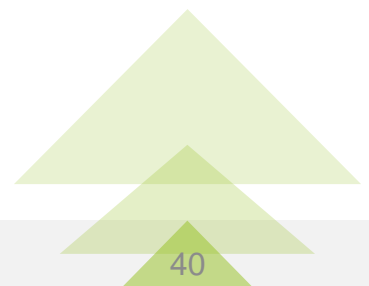
- What are the challenges in connecting upstream and downstream in a value chain? How does the information from consumers or from businesses flow back to producers?
- How individual producers or group of producers (cooperatives, informal collective) fit into a wider value chain? How to better cluster producers when and where it is needed?
- What are the support structures for integrating producers: economical and regulatory framework, policies and local authorities, local facilitation, etc

Session 3 "Innovations and challenges in production and mobilization of biomass"

- Main crop or by-products, are there differences in the challenges faced at production level ?
- Growing and harvesting for biobased value chains: expectations from the market, challenges and opportunities, innovations in production
- Storage and mobilization of biomass: bottlenecks and solutions at producer level

CROSS-REGIONAL LEARNINGS

- Regulatory Adaptation
- Circular Economy Practices
- Role of Cooperatives, multi-actor partnerships and networks
- Integration Challenges
- Support Structures
- Sustainability Integration and Value Addition
- Awareness and Education
- Localized Solutions
- Adaptation to Market Dynamics
- Mitigating Industry Skepticism
- Identified many existing good bio-based examples
- Encourage replication and scale-up

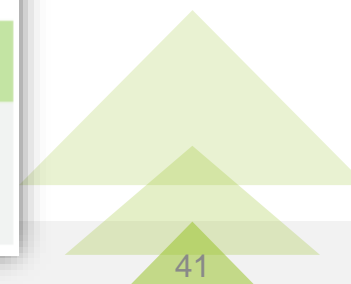


The Scale-up Training programme

A community-driven, needs-based training programme for bioeconomy development in European rural areas

SAVE THE DATES !

<p>EFFICIENT REGIONAL INFRASTRUCTURE & BIOMASS LOGISTICS</p> <p>WS4 September & October 2023 07.09.23 / 26.09.23 /19.10.23</p>	<p>INTEGRATING PRIMARY PRODUCERS INTO BIO-BASED VALUE CHAINS</p> <p>WS2 November & December 2023 09.11.23 / 21.11.23 / 07.12.23</p>
<p>DIGITALISATION IN THE BIOECONOMY</p> <p>WS3 January & February 2024 16.01.24 / 06.02.24 / 27.02.24</p>	<p>IMPROVED NUTRIENT RECYCLING</p> <p>WS1 March & April 2024 12.03.24 / 04.04.24 / 23.04.24</p>
<p>PRACTICES OF „SOCIAL INNOVATIONS“ IN RURAL BIOECONOMIES</p> <p>WS5 May & June 2024 14.05.24 / 04.06.24 / 25.06.24</p>	<p>GOVERNANCE OF REGIONAL BIO-BASED SYSTEMS</p> <p>WS6 September & October 2024 05.09.24 / 26.09.24 /17.10.24</p>
<p>STRATEGIES TO ADDRESS SOCIAL, ECOLOGICAL AND ECONOMIC TRADE-OFFS IN REGIONAL BIOECONOMY DEVELOPMENT</p> <p>WS7 October, November & December 2024 31.10.24 / 21.11.24 / 12.12.24</p>	



Work Stream 3

Digitalization in the bioeconomy

Links to Register :

Session 1 :

<https://events.teams.microsoft.com/event/68ef2437-88f4-4663-89e2-77fe54b19a25@193a752a-0923-4859-b3d1-34ce5e10cf01>

Session 2 :

<https://events.teams.microsoft.com/event/c1ad7648-c226-4b60-9a66-cf6a009cde18@193a752a-0923-4859-b3d1-34ce5e10cf01>

Session 3 :

<https://events.teams.microsoft.com/event/177ea344-a8f3-4a0d-ab6f-825d5e6866c0@193a752a-0923-4859-b3d1-34ce5e10cf01>

SAVE THE DATES !

SESSION #1

16 January 2024 – 9 am to 12 am CEST

Monitoring and sensorization of the bioeconomy
with digital technologies

SESSION #2

06 February 2024 – 9 am to 12 am CEST

Elevating Bioeconomy: Harnessing AI systems and
Drones for Cutting-edge Innovation

SESSION #3

27 February 2024 – 9 am to 12 am CEST

Safeguarding Progress: Critical Emphasis on Cyber
Security and Data Protection in Advancing the
Bioeconomy

Short survey

Links in the chat! 

French



Polish



German



Swedish



Macedonian



Spanish



THANK YOU !

SEE YOU IN THE NEXT
SESSION ...

SCALE^{UP}
community-driven
bioeconomy development



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