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# Transforming scientific language into messages for the general public: Communication and dissemination of a European R&D project in the field of forestry

TU Dresden, 2023-04-12  
SILVA Network Annual Meeting 2023  
University of Sopron, Hungary



# Structure



1. Dendromass4Europe: Project description
2. State of the art in strategic planning of communication and dissemination for scientific projects
3. Evolution in science communication OR lessons learnt

# Dendromass4Europe: Project description

## Securing Sustainable Dendromass Production with Poplar Plantations in European Rural Areas

**Project lead:** Technische Universität Dresden (Germany)

**Duration:** 01.06.2017– 30.11.2022



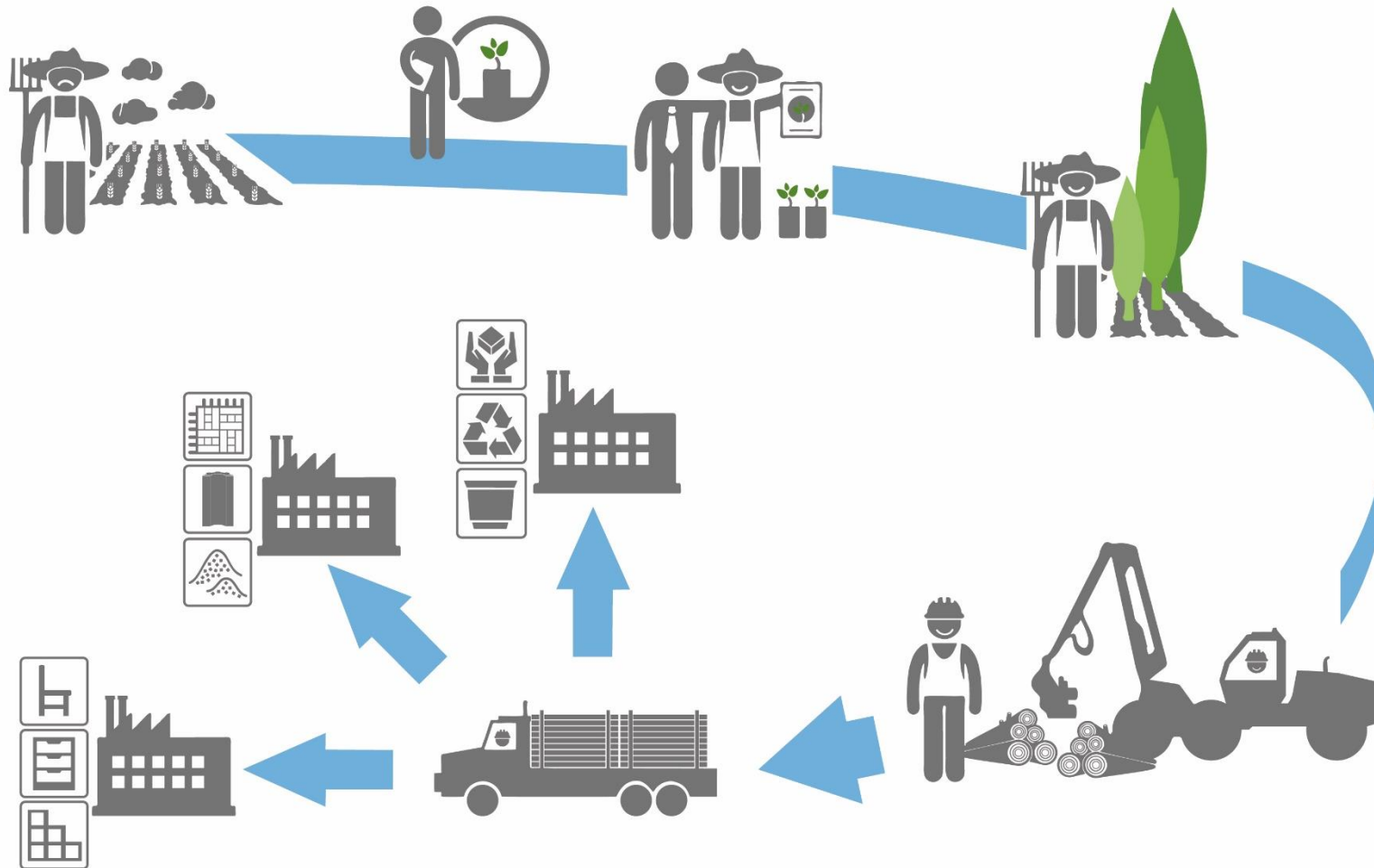
# Dendromass4Europe: Project description



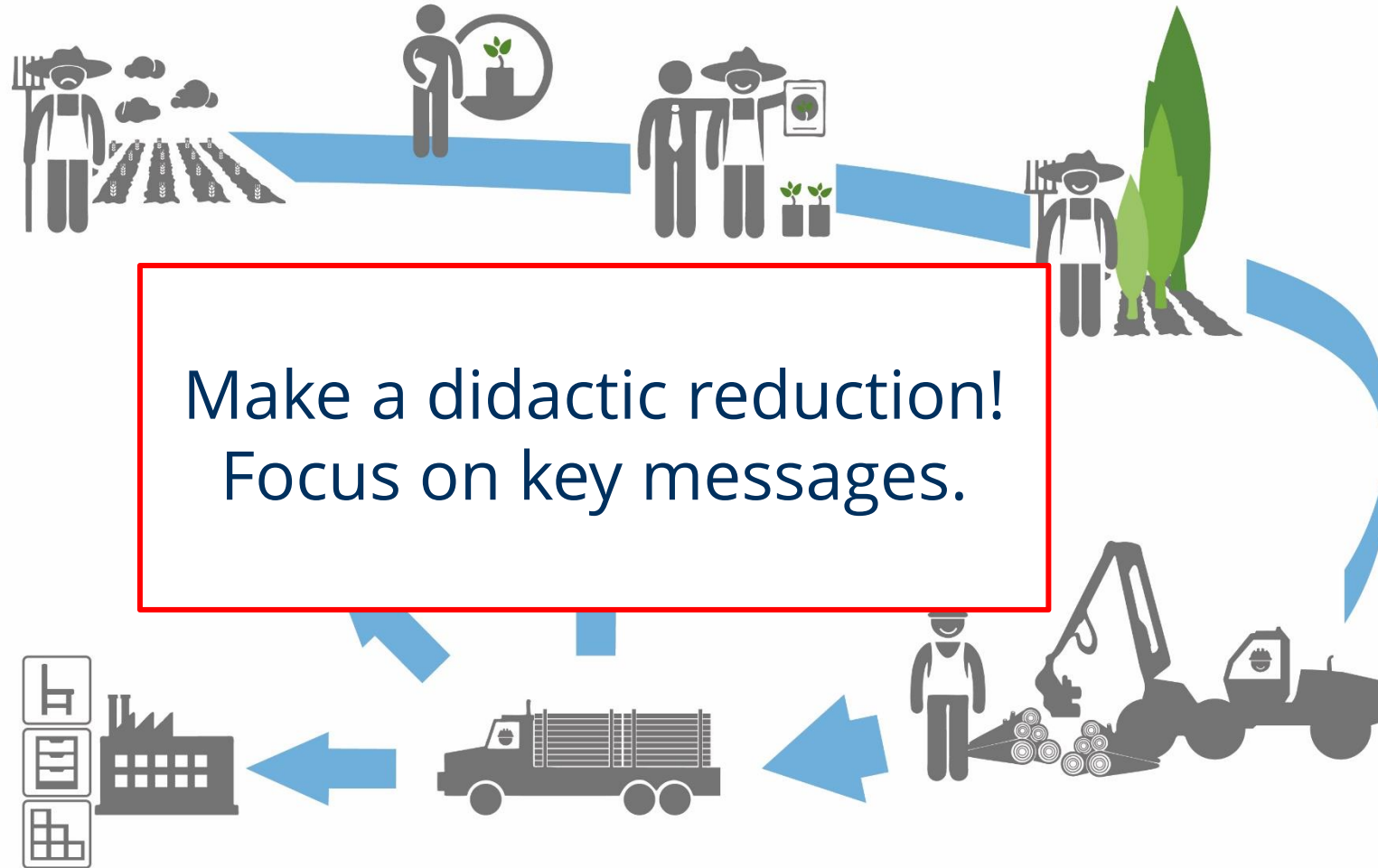
## Main challenges

Exploit the potential of marginal and underutilized land for sustainable production

Develop innovative bio-based materials based on poplar dendromass and establish value chains



# Dendromass4Europe: Project description



## Main challenges

Exploit the potential of marginal and underutilized land for sustainable production

Develop innovative bio-based materials based on poplar dendromass and establish value chains

# Strategic planning of comm & diss



No ad-hoc communication!

Set up a regularly updated communication strategy!

# Strategic planning of comm & diss

## Comm & Diss Strategy and Plan

- Define and describe target audiences
- Set communication objectives, key messages
- Define tone of communication and design style
- Plan activities and communication channels
- Plan monitoring and evaluation

& link this with each other

# Strategic planning of comm & diss

## Plan activities



### Multi-channel approach

- uses both digital and analogue channels, which exist as mutually independent but in a synergetic way



# Strategic planning of comm & diss

## Plan activities



### Multi-channel approach

- uses both digital and analogue channels, which exist as mutually independent but in a synergetic way

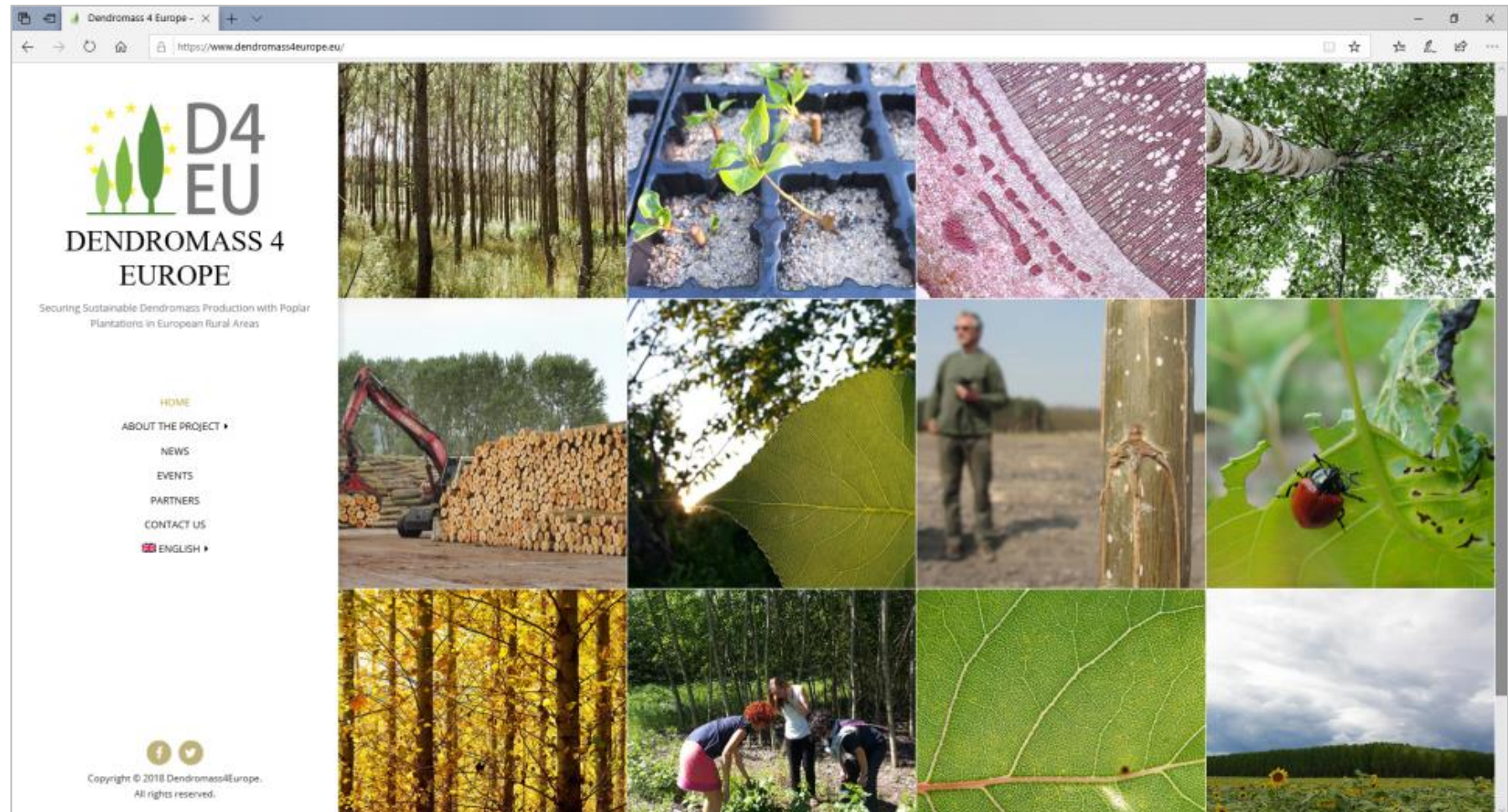
# D4EU

# Strategic planning of comm & diss

## Plan activities



project website



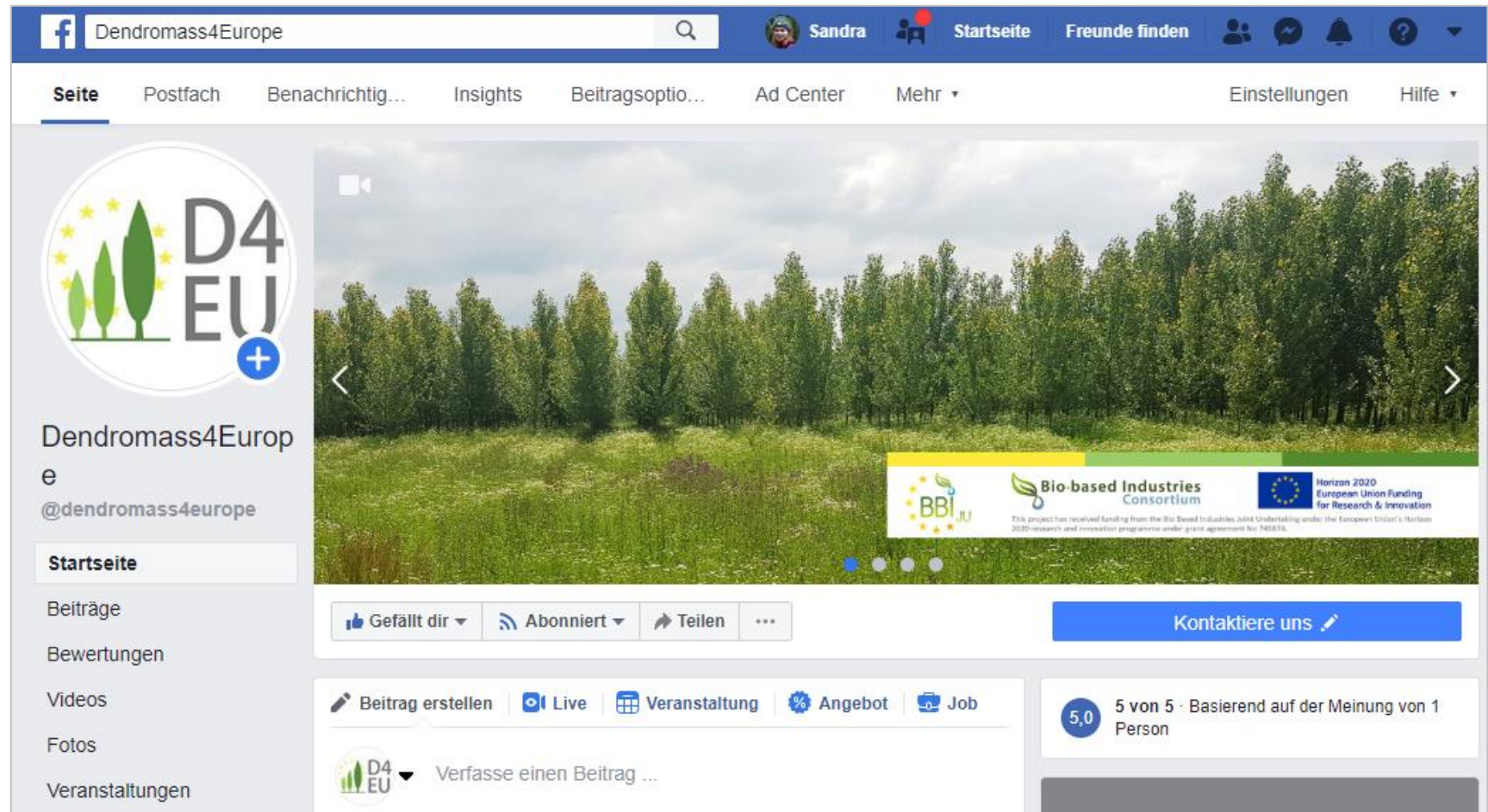
# Strategic planning of comm & diss

## Plan activities



### Social media

Facebook, Twitter  
and ResearchGate



# Strategic planning of comm & diss

## Plan activities



general and technical posters



Dendromass4Europe.eu


### Securing Sustainable Dendromass Production with Poplar Plantations in European Rural Areas

**About the project**  
Dendromass4Europe (D4EU) 2017 – 2022 aims at establishing sustainable, Short Rotation Coppice (SRC) based, regional cropping systems for woody biomass development production on marginal agricultural land. This new agricultural cropping system will allow the improvement of the landscape for maintaining biodiversity, which is a new source of income for farmers and for local development. The dendromass produced in D4EU poplar SRC (Ilexpox Biomass) will be used for producing dedicated bio-based value chains that create job opportunities in rural areas. The poplar SRC will be tailored for maximum efficiency of supply logistics and for reducing CO<sub>2</sub> emissions. Innovative bio-based materials such as lighter non-ferrous, environmental friendly packaging and high quality construction materials, will help to replace fossil-based materials.



**New bio-based materials**  
Dendromass4Europe helps rethinking European wood and biomass product chains and increasing their flexibility on marginal lands. D4EU uses marginal lands for establishing SRC, with 200 x 2.5 for an innovative bio-based production. The various activities of the D4EU project contribute to the value chain for the rural economy through value adding processes and marketing activities that will allow access for innovative bio-based materials to specific consumer markets. As a most specific result, a fully customised lightweight bio-based furniture production has been developed. These bio-based materials, in eco-friendly moulded fibre pulp for packaging, bank and wood composite products and their respective wood-based composite granules are produced through analysing the life cycle of our products. D4EU ensures sustainability along the entire value chain, from the plant to the consumer product.



**Benefits to society and the environment**

- Improve landscape for maintaining biodiversity and protection against erosion
- Offer diversification of agricultural crops and improve economic safety for agricultural operators by different new cropping models adapted for regional cropping
- Build up know-how and new green jobs in an innovative cross sectoral industry cluster
- Migrate climate change by action and long term carbon dioxide sequestration and regional energy production to improve supply logistics
- Reduce plastic pollution by replacing fossil-based materials with recyclable, bio-based materials




**Objectives**

- Establishment and expansion of 1300 ha of short rotation poplar SRC on marginal or currently unused agricultural land in rural areas
- Market introduction and acquisition of four new bio-based materials based on the establishment of four new bio-based value chains
- Reduce CO<sub>2</sub> emissions through the adaptation and expansion of innovative recycling and storage systems
- Implementation of dedicated monitoring and applied soil research to ensure plantation quality, production stability, economic viability, selection and risk avoidance
- Validation of the expected positive ecological impacts by assessing the life cycle of the new bio-based materials along the value chain




**Partners**

- Consiglio Nazionale delle Ricerche (Italy)
- Daphne - Institut of Applied Ecology (Slovakia)
- Les Industries Slovakiennes S.R.O. (Slovakia)
- Kompetenzzentrum Holz GmbH / WOOD-K Plus Austria
- Okoforestno KFT (Hungary)
- Pulp-Tec GmbH & Co KG (Germany)
- Pulp-Tec Sp. z o.o. Sp. A. (Poland)
- Sveiniges Lantbruksuniversitet (Sweden)
- Technische Universität Dresden (Germany)
- TerraEco S.R.O. (Czech Republic)



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www.dendromass4europe.eu

**Project Coordination:**  
Technische Universität Dresden  
Forest Policy and Forest Resources Economics  
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D01175 Thüringen


Bio-based Industries Consortium

Horizon 2020 European Union Funding for Research & Innovation

D4EU has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement 745874.


National Research Council of Italy  
Institute of BioEconomy  
Department of Biology, Agriculture and Food Science
Dendromass4Europe.eu

### Designing an optimized harvesting system for Short Rotation Coppices

R. Spinelli<sup>1</sup>, N. Magagnoli<sup>2</sup>, B. Kováč<sup>3</sup>, P. Hegyi<sup>4</sup>

**About the project**  
Dendromass4Europe (D4EU) 2017 – 2022 aims at establishing sustainable, Short Rotation Coppice (SRC) based, regional cropping systems for woody biomass development production on marginal agricultural land. The dendromass produced in SRC (Ilexpox Biomass, bark and wood) is supplied to dedicated bio-based value chains that create additional income and job opportunities in rural areas. The supply chains will be tailored for optimum efficiency of supply logistics and for reducing CO<sub>2</sub> emissions. Innovative bio-based materials will help to replace fossil-based materials.





**Task and challenges**

Our task was to design cost effective harvesting systems for short rotation coppices (SRC) with poplar. Such systems must be able to produce 4 m long logs with a minimum end and diameter (ED) of 7 cm from according to delivery specifications. The goals were:

- minimizing harvesting costs (i.e. \$/t per Bone Dry Ton (BDT))
- maximizing log yield (t/ha)

The main challenge with harvesting SRC poplar is the small tree size. Conventional cut-to-length (CTL) machines are designed for trees with an optimum size (i.e. 0.2 m), and their productivity plummets when dealing with trees that are half as big.



**Methods**

We tested a large variety of harvesting chains and machines, covering both main harvesting systems: whole-tree harvesting (WTH) and cut-to-length (CTL) harvesting. Overall, twelve full-scale controlled harvesting tests were conducted from 2018 to 2022, in Italy, Poland and Slovakia. Additional work was conducted on the effect of cutting method (i.e., based on stump damage and regeneration, and on the best technique for chipping the biomass component (i.e. tops and branches).





**Results**

Several strategies can be implemented to achieve the above-mentioned goals, and namely:

- Manufacturing log specifications, and in particular:
  - reducing ED from 8 to 7 cm allows a 15 % log yield increase at no additional cost
  - reducing log length from 4 m to 2 m allows a 40 % increase in log yield at a 13 % additional cost
- Switching to multi-tree CTL harvesting allows a  $\pm$  10 % decrease in cost
- Switching from CTL to WTH offers no cost advantage on well developed fields, but may lead to substantial savings in underdeveloped poplar SRC
- Chain fall debarking with a new compact prototype can double log yield and decrease harvesting cost in underdeveloped poplar SRC



Figure 1. Harvesting cost as a function of log yield for a range of CTL harvesting systems.







**Summary**

- Underdeveloped poplar SRC (< 40 BDT ha<sup>-1</sup>) can be profitably harvested with CTL technology at a cost < 30 € BDT<sup>-1</sup>
- Underdeveloped poplar SRC (< 40 BDT ha<sup>-1</sup>) are best harvested with WTH technology, based on pre-sowing by the fallow-trencher and debarking with a compact chain fall.



<sup>1</sup> CNR, Firenze, Italy    <sup>2</sup> NEA Industry Slovakia s.r.o., Malacky, Slovakia
www.dendromass4europe.eu

**Project Coordination:**  
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Foster Straße 23  
D01175 Thüringen


Bio-based Industries Consortium

Horizon 2020 European Union Funding for Research & Innovation

D4EU has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement 745874.


# Strategic planning of comm & diss

## Plan activities



leaflets

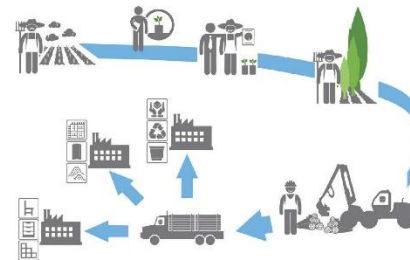
### About the project



Dendromass4Europe aims at establishing sustainable, Short Rotation Coppice (SRC)-based, regional cropping systems for agricultural dendromass production on marginal land.

The dendromass produced in SRC (ligneous biomass, bark and wood) will be supplied to dedicated bio-based value chains which will create additional job opportunities in rural areas.

The supply chains will be tailored for optimum efficiency of supply logistics and for reducing CO<sub>2</sub> emissions. Innovative bio-based materials will help to replace fossil-based materials.



### Objectives


- Establishment and expansion of 2500 ha of short rotation poplar plantations on marginal or on currently unused agricultural land in rural areas
- Demonstration of the market introduction and the application of 4 New Bio-Based Materials (NBBM) linked to the establishment of 4 new bio-based value chains based upon separately adding higher value to the wood and the bark of the poplars
- Reduction of dendromass costs through the adaptation and optimisation of innovative harvesting and storage systems
- Implementation of dedicated monitoring and applied-level research to ensure plantation quality, production stability, optimum poplar variety selection and risk avoidance
- Validation of the expected positive ecological impacts by assessing the life cycles of the NBBMs along the value chains (life cycle assessment)

### New bio-based materials

The various activities of the D4EU project consortium aim to generate profit for the rural economy on a regional scale through value adding processes and marketing activities that will allow access for innovative bio-based materials to specific consumer markets.

As a wood-based material, a functionally adapted lightweight board for furniture production is planned.

Moreover, three bark-based materials are planned: an eco-fungicidal moulded fibre pulp for packaging; bark enriched wood-plastic composite profiles and bark enriched wood-plastic composite granulates.



### Partners

- TECHNISCHE UNIVERSITÄT DRESDEN**  
www.tu-dresden.de  
Germany
- IKEA Industry Malacky**  
IKEA INDUSTRY SLOVAKIA S.R.O.  
www.ikea.com  
Slovakia
- PULPACK**  
PULPACK SP. Z O. O. SP. K.  
www.pulpack.pl  
Poland
- WOOD K PLUS**  
KOMPETENZENTRUM HOLZ GMBH (WOOD K PLUS)  
www.wood-kplus.at  
Austria
- CONSIGLIO NAZIONALE DELLE RICERCHE - INSTITUTE OF BIOECONOMY (IBE)**  
www.ibo.cnr.it  
Italy
- ÖKOFÖRESTINO KFT.**  
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Hungary
- DAPHNE**  
DAPHNE - INSTITUTE OF APPLIED ECOLOGY  
www.daphne.sk  
Slovakia
- ENERGO-CHEMICA**  
ENERGO-CHEMICA TRADING A.S.  
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 🐦 D4EU\_project  
 📌 Dendromass4Europe




Securing Sustainable Dendromass Production with Poplar Plantations in European Rural Areas



www.dendromass4europe.eu

Partners – 7 countries – 5 years – 1 project

# Strategic planning of comm & diss

## Plan activities

Information panels  
at the plantations



# Strategic planning of comm & diss

## Plan activities



### Video clips



**Dendromass4Europe**  
 @dendromass4europe136 64 Abonnenten 23 Videos  
 Mehr über diesen Kanal >

ÜBERSICHT VIDEOS PLAYLISTS COMMUNITY KANÄLE KANALINFO

Neueste Beliebte

D4EU: 4 New Bio-Based Products With Poplar  
8 Aufrufe · vor 2 Monaten

D4EU: New WPC Granulates and Profiles made with Poplar  
15 Aufrufe · vor 4 Monaten

D4EU: New Lightweight Board For Furniture Made With Poplar  
20 Aufrufe · vor 4 Monaten

D4EU: New Plantpots And Packaging Made With Poplar  
10 Aufrufe · vor 4 Monaten



D4EU: Poplars for a greener living – Dendromass for you!  
55 Aufrufe · vor 1 Jahr



D4EU: Poplar Dendromass for You!  
107 Aufrufe · vor 1 Jahr



D4EU: Poplars for a greener living!  
37 Aufrufe · vor 1 Jahr



D4EU: Harvest Trials 2021 - Optimizing harvest logistics  
337 Aufrufe · vor 1 Jahr



TUDAdventskalender: Mehr Nachhaltigkeit durch Pappeln  
22 Aufrufe · vor 2 Jahren



BioHeroes Interview with Sandra Liebal by BioBridges  
45 Aufrufe · vor 2 Jahren



Interview of BIOVOICES with D4EU  
19 Aufrufe · vor 2 Jahren



D4EU: Fighting Climate Change with Poplars  
302 Aufrufe · vor 2 Jahren



D4EU: Farmers and Poplar Plantations by IKEA Industry Slovakia (Hungarian subtitles)  
64 Aufrufe · vor 2 Jahren



D4EU: Farmers and Poplar Plantations by IKEA Industry Slovakia (English subtitles)  
3679 Aufrufe · vor 2 Jahren



D4EU: Harvest Demo Event in Skalica 2020  
160 Aufrufe · vor 3 Jahren



D4EU: Farmers and Poplar Plantations by IKEA Industry Slovakia (slov)  
153 Aufrufe · vor 3 Jahren

# Strategic planning of comm & diss

## Plan activities



## Multi-channel approach

# D4EU

... and rollups, press releases, publications (public press to peer-reviewed), demonstration events, stakeholder workshops, conferences, TV and radio spots



# Strategic planning of comm & diss

## Plan activities



### Multi-channel approach

Link the communication channels as much as you can (e.g. by announcements, links, shoutouts).

### Omni-channel approach

digital and analogue channels are more intertwined; 'user experience' or 'user journey' across devices and media  
→ When dealing with forest-related topics, publics must be able to switch from one medium to another as simply as if it were one.

# Strategic planning of comm & diss

## Define and describe target audiences

### Stakeholder analysis

#### Persona method



	Marianne Magazine
Age	70+
Education	Upper secondary education Much life experience (knows a bit of everything) Lot of practical skills
Profession	retiree
Interests	Home and living Family Health Nature
Language	...
Motivation	...
Opinion	...
Media use	Newspaper and magazines. Almost no internet.

# Strategic planning of comm & diss

## Describe target audiences & link to activities



### Multi-channel relational model

Low level of knowledge: General public, consumers	Mid level of knowledge: Politicians, Media, investors	High level of knowledge: Scientists, reviewers
Website	Website	Website (esp. downloads section)
Leaflets, general poster, Roll-ups	Leaflets, general poster, Roll-ups	Scientific publications
Public press	Conferences	Conferences
Social media	Social media	Technical posters
Video clips / YouTube	Video clips / YouTube	Workshops
Exhibitions	Demo events	
TV and Radio spots	Technical posters	

# Strategic planning of comm & diss

## Define tone of communication & design style



### style

- Corporate Design (logo, fonts, colours, style elements, templates, pictures)

### tone

- factual (as composed to rely on emotional wording) and positive (as composed to problem-based)
- **easy language or plain language**
- tightrope walk between scientific precision and complexity on the one hand and popularization on the other: 'plantation' instead of 'short rotation coppice'?

# Strategic planning of comm & diss



European Commission

## HOW TO COMMUNICATE YOUR PROJECT

- Think, Plan, Act strategically**
  - What do you want to achieve?
  - Communicate from day one
- You can't reach everyone**
  - Define your target audience
  - Use consortium resources, expertise and ideas
- Think Issue, not project**
  - What issue is the project addressing?
  - Link communication to hot topics in society
- Make it relevant to daily life**
  - Show the impact on society
  - Avoid technical language and jargon
- Be creative**
  - Vamp up the visual, reduce the writing
  - Use social media
- Get into the media mindset**
  - Identify relevant media people
  - Understand media language and needs
- Think global, act local**
  - Local and regional media are effective targets
  - Use the project's local connections
- Build your brand**
  - Become a trusted source and voice
  - Contribute where and when you can

Source: Executive Agency for SMEs (EASME, n.y.)

Download it for free:  
SiS.net (2020): Science Communication – Policy Brief. Online: <https://wbc-rti.info/object/document/20215/attach/Policy-Brief-SCIENCE-COMMUNICATION-FINAL.pdf>

# Evolution of science communication



Project start: 2017

Deficite model

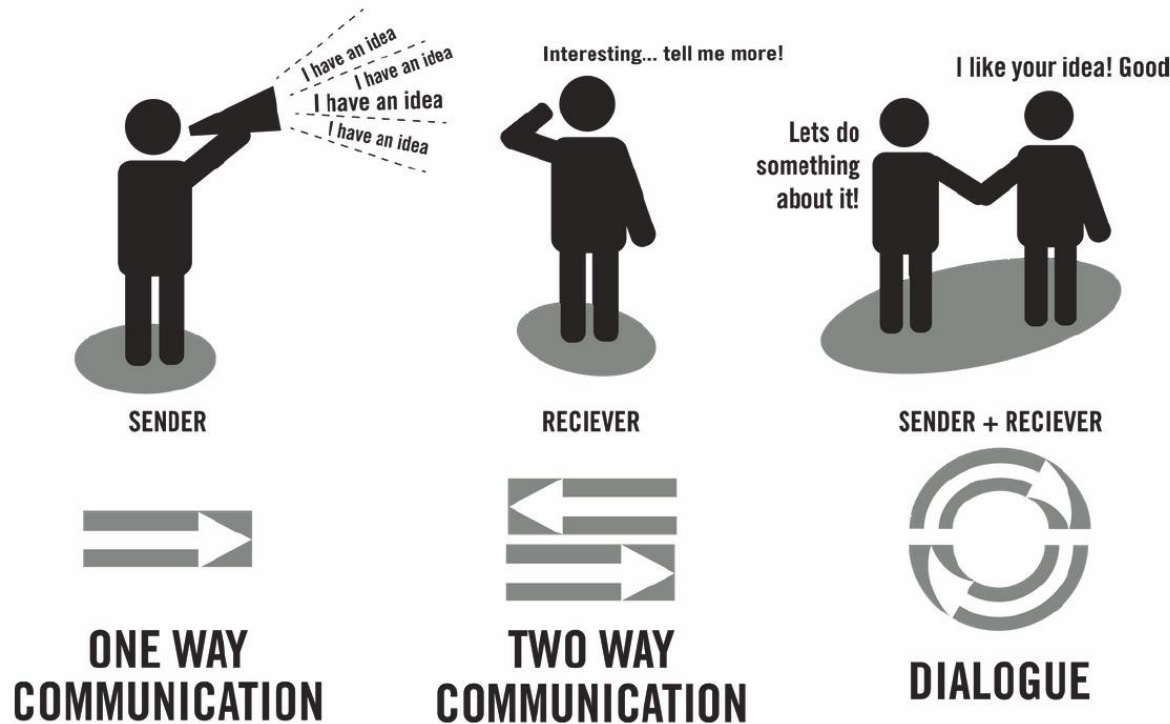
# Evolution of science communication communication models

2017

2022

Deficite

Dialogue & Participation



Source: SiS.net (2020): Science Communication – Policy Brief.

## SCIENCE COMMUNICATION

Communication about research with the outside world.



## Participatory model

Live events such as Science cafés and shops, science festivals; citizen science; children´s universities; serious games

Source: SiS.net (2020): Science Communication – Policy Brief.



# Outlook

## SCIENCE COMMUNICATION

Communication about research with the outside world.



Consider the new philosophy  
of 'Inform – Involve –  
Collaborate – Empower'  
  
... where it is possible

Source: SiS.net (2020): Science Communication – Policy Brief.

# References



SiS.net (2020): Science Communication – Policy Brief. Online: <https://wbc-rti.info/object/document/20215/attach/Policy-Brief-SCIENCE-COMMUNICATION-FINAL.pdf>

Executive Agency for SMEs (EASME) for strategic planning of project communication(n.y.): [https://eisma.ec.europa.eu/manage-and-communicate-your-project-grants\\_en](https://eisma.ec.europa.eu/manage-and-communicate-your-project-grants_en)