

Building Based on  
BioBased

**BBoBB - Webinar V**

**FLAX**

**Interreg  
North Sea**



Co-funded by  
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BBOBB

# Welcome

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Interreg  
North Sea



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House of Design  
(founder, system designer)



Sébastien Hylebos  
Designregio Kortrijk  
(Project Manager)



FLAX



# HOUSE OF DESIGN

Established in 1996.

A societal design lab initiates projects, making sustainability tangible and visible, through participatory action research, setting up local value chains.

Situated in the North Netherlands and focus on North NL and Europe.

*planet*  
~~HUMAN~~ CENTERED DESIGN

*for human use*

[www.houseofdesign.nl](http://www.houseofdesign.nl)



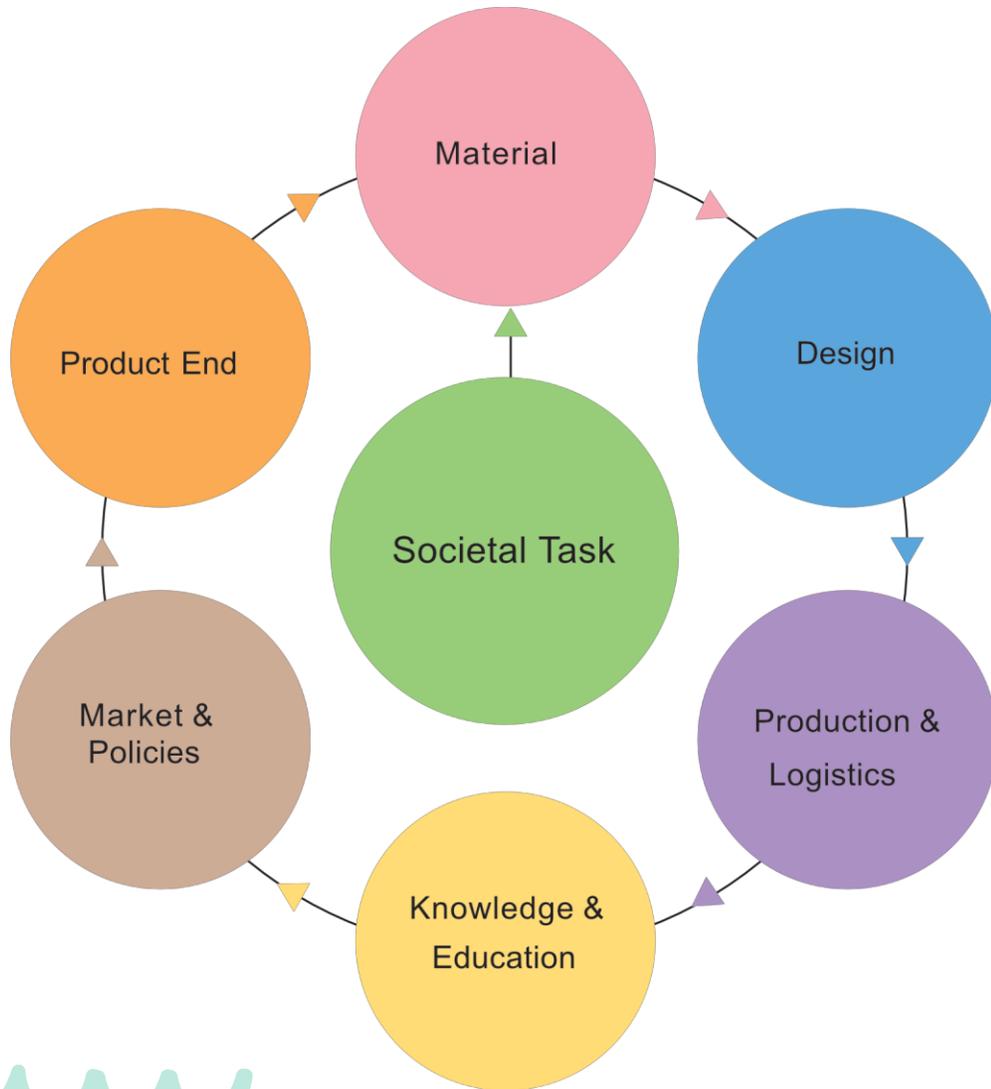
# Role of design

from product .....to system

WHAT IS THE IMPACT  
OF OUR PRODUCT

to nature?  
to society?  
to local economy?





# Local Value Chain model

Model to re design a system from linear to circular

Connect different stakeholders;

Boost the local economy;

Contribute to more biodiversity in your region and a zero-waste society;

Minimize CO<sub>2</sub> emissions

Create purposeful employment for all degrees;

Develop something visible and tangible,  
and especially,

something to make people proud!

# Designregio Kortrijk

## DRIVING SUSTAINABLE INNOVATION THROUGH DESIGN

[www.designregio-kortrijk.be](http://www.designregio-kortrijk.be)



20 years of experience in activating **design for societal and economic innovation**

Mission: connecting designers with **industry, public organisations and communities** to create sustainable impact

**UNESCO Creative City of Design** – representing the region (300K inhabitants) in a global network of leading design ecosystems

Focus on measurable impact in four domains: **society, economy, environment, and youth**



# Designregio Kortrijk

## WONDER Creativity Festival

[www.wonderkortrijk.be](http://www.wonderkortrijk.be)

Yearly festival spread over Kortrijk city

Unique discovery trail through design, technology, art and innovation

Unique in Belgium as a vibrant platform and connector for all things creative

+18.000 visitors, 34 locations, 60 expositions, 500 participating students, companies, artists



# Partners

## The Netherlands:

Province of Fryslân (LP)  
Circulair Friesland  
House of Design  
Biosintrum

## Belgium:

Designregio Kortrijk  
Ghent University

## France:

IMT North Europe  
CEREMA

## Denmark:

Guldborgsund Municipality  
Business Lolland Falster  
AGROVI

## Germany:

3N Kompetenz Zentrum  
Region Heidekreis  
Jade University

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## Focus on strengthening and connecting value chains in NSR

### Goals and ambitions

- **Use of biobased materials in construction, interior applications and textiles is a unique opportunity with a lot of potential**
- **Contribute to major global and NSR challenges:**
  - climate change,
  - reduce CO<sub>2</sub> emissions,
  - new business models for farmers,
  - soil health,
  - contribution to biodiversity,
  - revaluation of the region,
  - improving interior climate with positive impact on health
- **Currently:** many small-scale projects throughout the NSR



## Overarching obstacles currently experienced in the NSR:

- Lack of well-organised value chains
- Fragmented and partly missing knowledge and data
- Lack of facilitating government policies, laws and regulations
- Little awareness among different parties in the chain
- Financial feasibility of biobased materials

Objective: developing a transnational approach for the valorisation  
of biobased value chains

by

connecting designers to the value chains as orchestrators for  
developing biobased textiles, construction and interior  
applications



- Transnational NSR cooperation and knowledge sharing on;
  - policy and governance,
  - best practices,
  - development of biobased value chains
  - production possibilities and collaborations
- Mapping from seed to semi finished product
- Research on soil impact for additional cultivation for building
- Developing methodologies and tools to facilitate the design process
- Connecting bio designers within NSR

Demonstrated in 5 pilot projects,  
in which the developed methods and business models  
of biobased value chains are applied to different crops



# BBoBB – crops in NSR

Flax



Hemp



Cattail



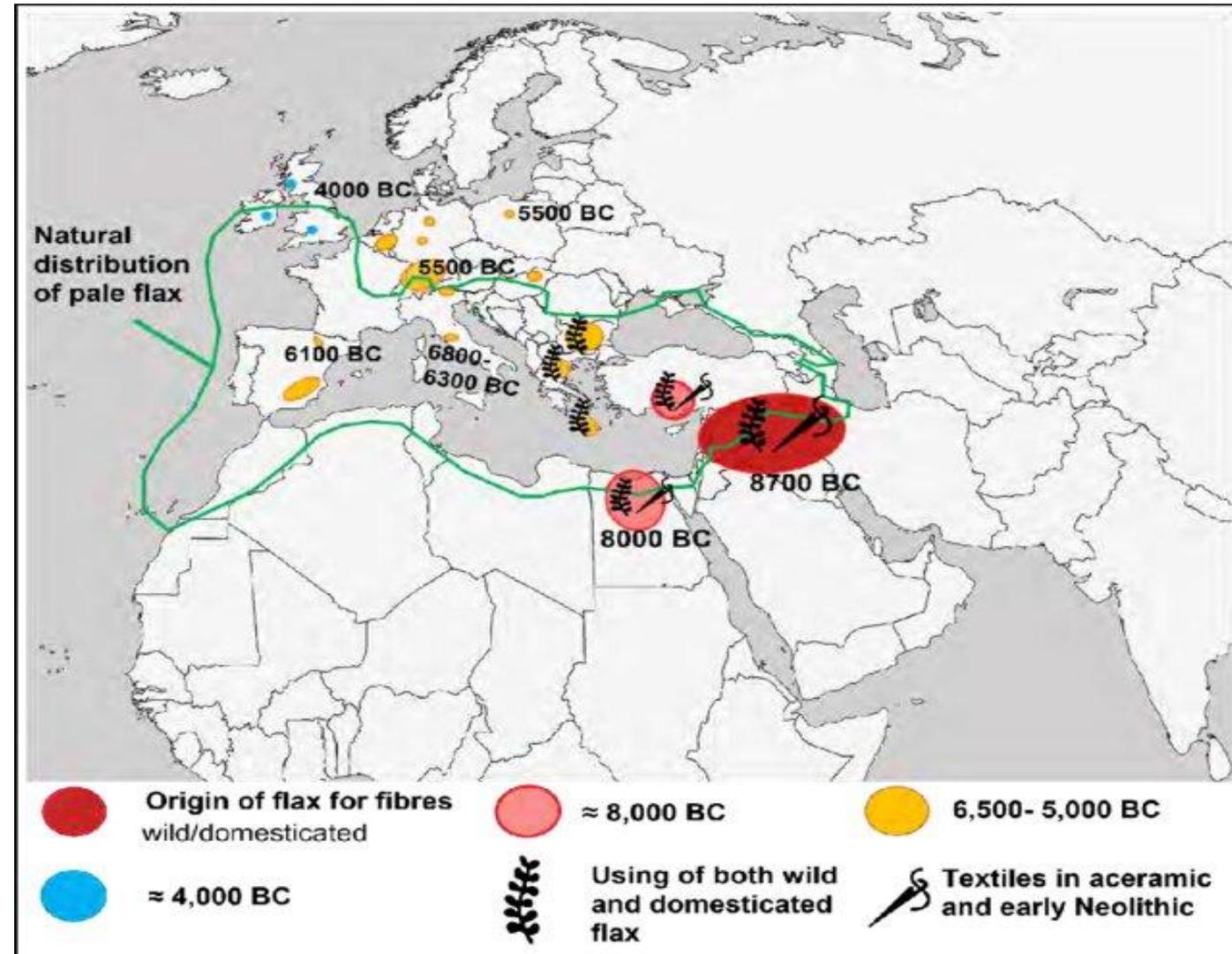
Miscanthus



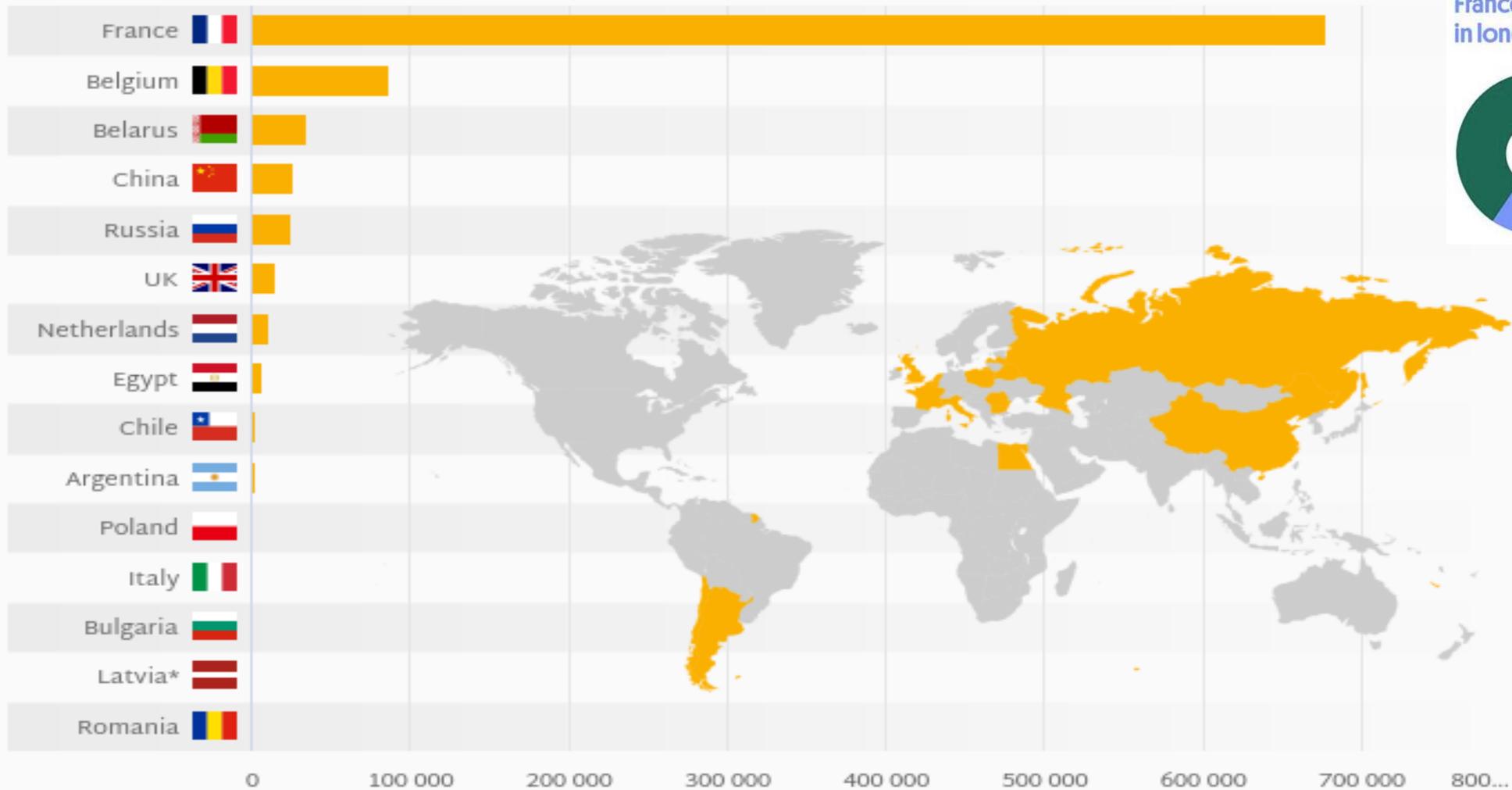
# Let's talk about FLAX

Flax – way back:

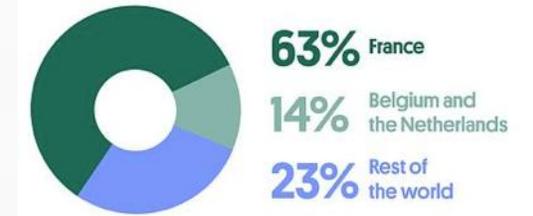
- +/- 8.000 BC > Middle East
- +/- 6.000 BC > South of Europe
- +/- 4.000 BC > North of Europe
  
- 1960 decline due to cheaper cotton and synthetic fibers



# FLAX – worldwide



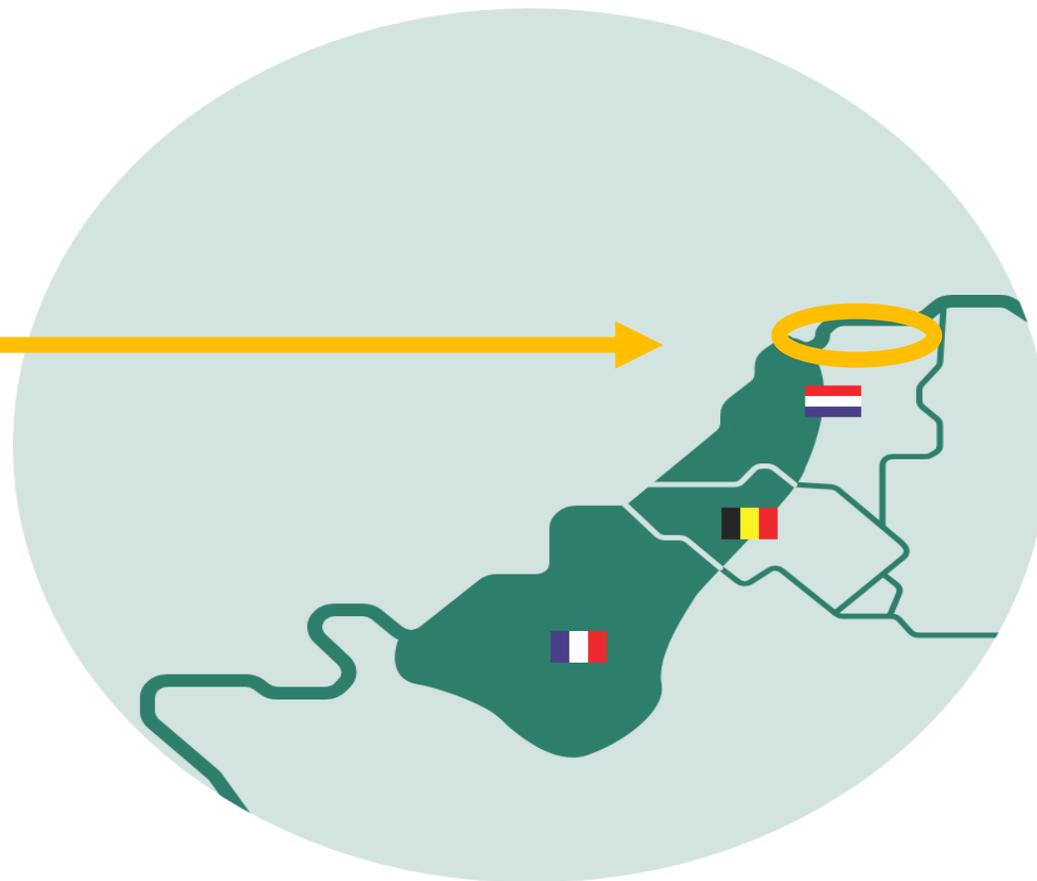
France is the global leader in long Flax fibre production



Source: Faostat, \* Data from 2020

# Flax in North Sea Region 2024

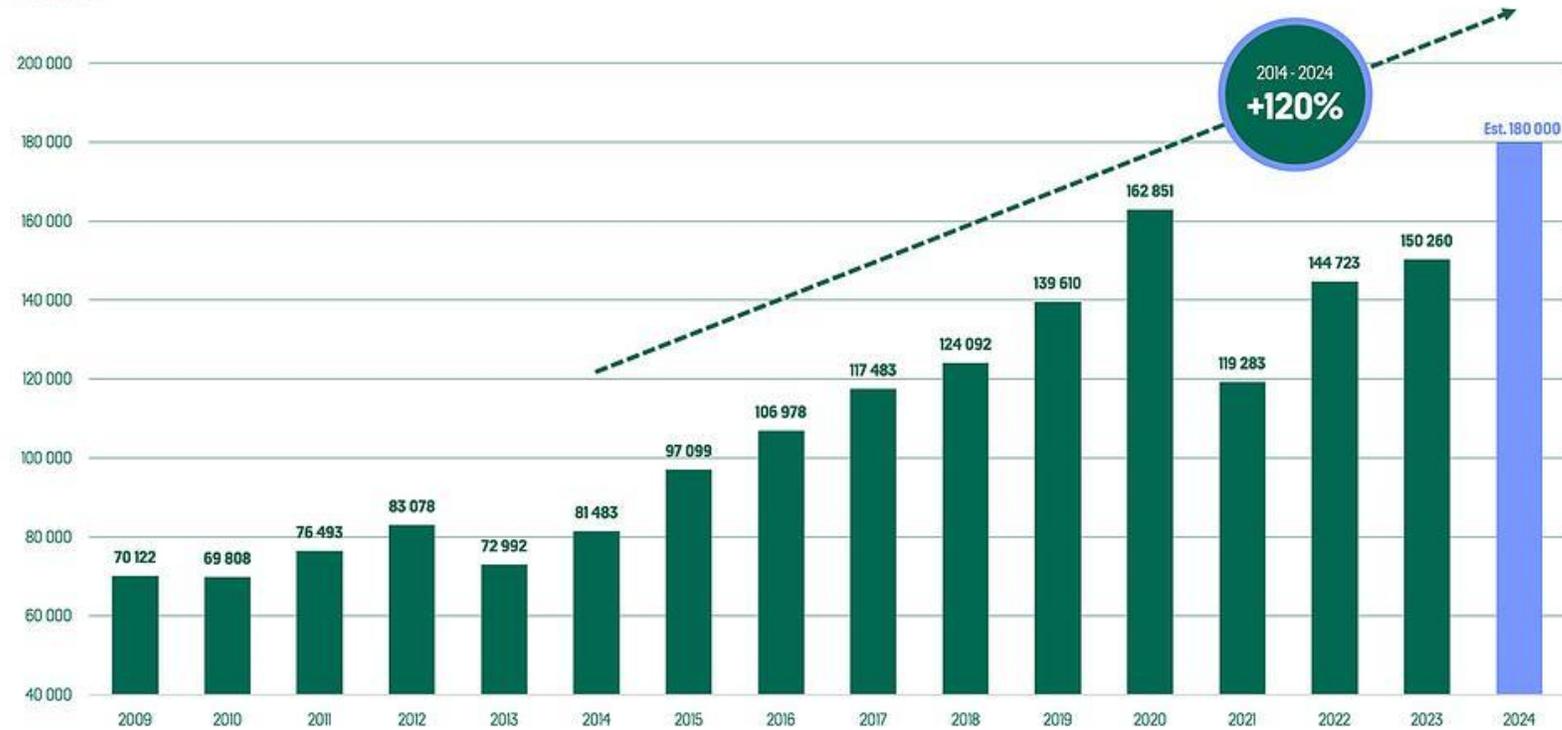
France:	162,000 ha
Belgium:	20,156 ha
Netherlands:	3,600 ha + new region
<b>Total:</b>	<b>185.849 ha (new record)</b>



# Flax in North Sea Region 2024

## EUROPEAN FLAX™ 2009-2024 AREA UNDER CULTIVATION

Hectares



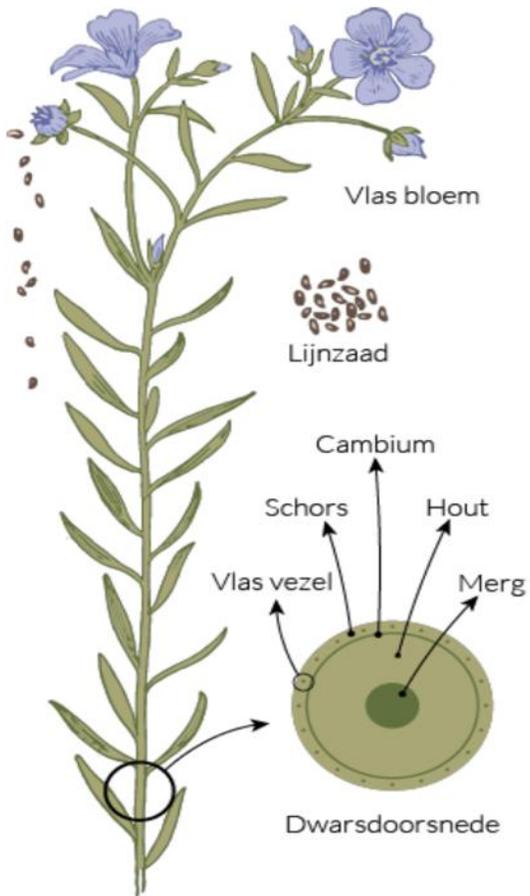
Sources: Flax-Linen & Hemp Economic Observatory

# Re-introducing flax in North of the Netherlands

2021: 2ha => 2025: 81 ha flax – 14 farmers



# The value of flax



Afbeelding 18: Vlas anatomie



## LONG FIBRES



## SHORT FIBRES



## SHIVES



## SEEDS



# 1 ha is good for:

## Long fibre



OR



OR



OR



+

## Short fibre



+



## Shives

WadKnuffel  
0,40 m<sup>2</sup>  
7.576 pieces

WadTas  
1,50 m<sup>2</sup>  
2.020 pieces

WadColbert  
1,70 m<sup>2</sup>  
1.783 pieces

WaddenGordijn  
6,60 m<sup>2</sup>  
459 pieces

Insulation  
54 m<sup>2</sup>  
0,6 houses

Panels  
89 m<sup>2</sup>  
0,3 houses

\*

\*

20% of the fibre = 80% of the profit

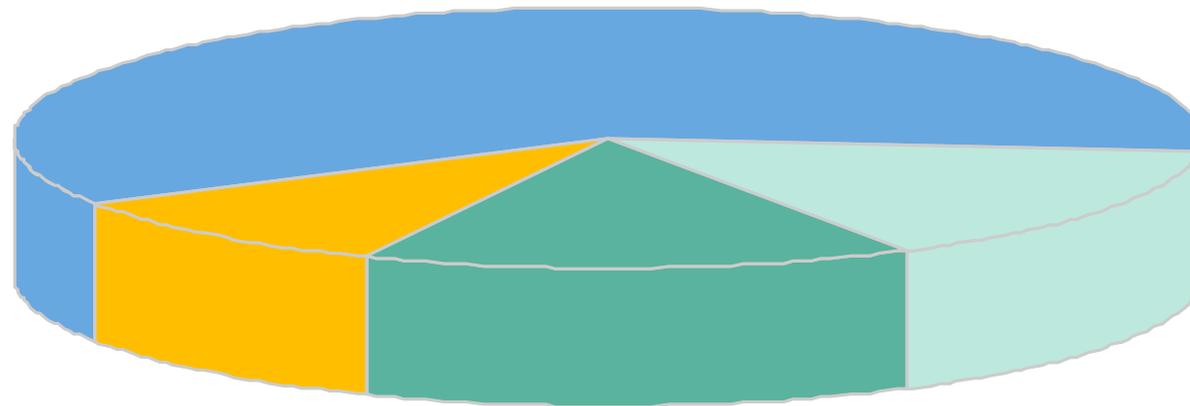
80% of the fibre = 20% of the profit

# Flax in products

Current sales of flax fibres



Clothing: 60%



Household linen  
15%



Technical &  
industrial  
Purposes  
10%

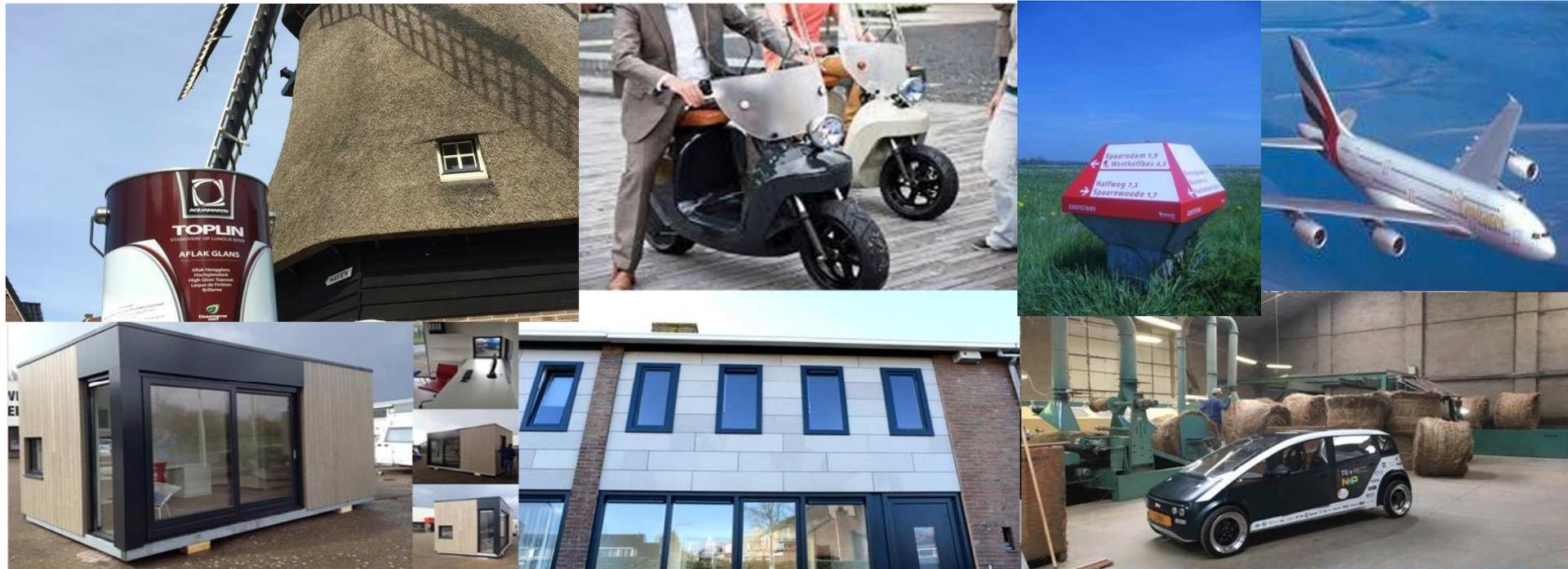


decorative and  
upholstery in furniture and interior  
15%



# Flax in products

... and also for



# Flax in building

European and national goals:

- EU Green Deal's ambition: becoming the first climate-neutral continent by 2050.
- Biobased materials—such as timber, hemp, flax and straw— reduce carbon
- 2030 targets:
  - Netherlands: 30% of newly built consist of 30% biobased materials
  - Flanders: materials must be 20% bio circular in newly built
  - EU: all new buildings are zero-emission

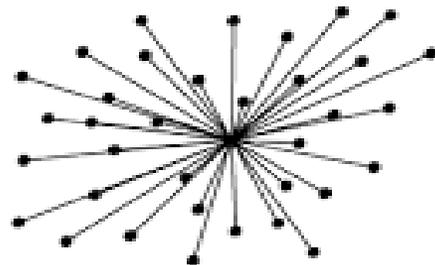


# European Value Chain: Flax

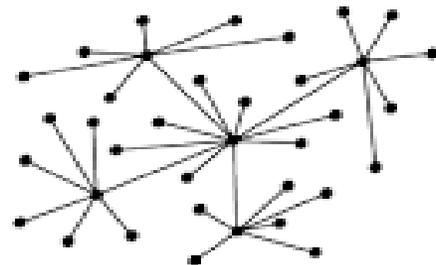
Almost 85% of the long flax fibre of NSR is exported to Asia

What steps are needed to scale up the flax biobased economy in the NSR?

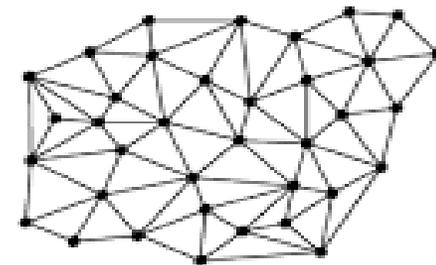
>> Setting up local value chains in the NSR and link them together creating a **distributed system**



centralised



decentralised



distributed

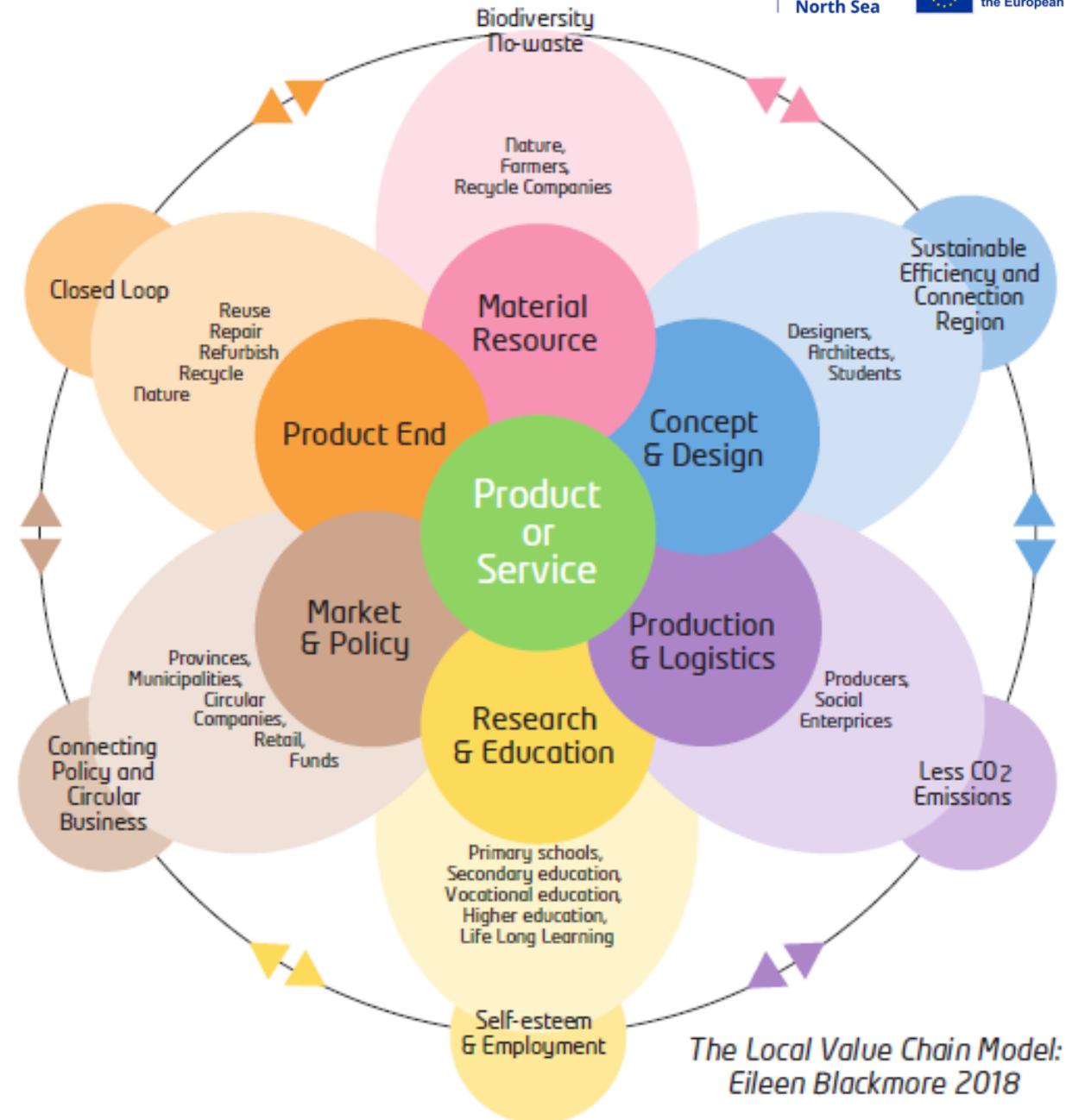


# Local Value Chain: Flax

Creating a distributed system  
By setting up cross border local value chains in NSR.

Cooperations between:

- Farmers
- Designers and architects
- Factories and producers
- (Vocational and Higher) Education institutes
- (Launching) Customers, governance
- Repair, Remake, Recycle facilities



The Local Value Chain Model:  
Eileen Blackmore 2018

# Flax in BBoBB



Meeting object by:  
Simone Larabi  
Bart Zantman  
Feike de Jong



vlastic®



Nathan  
Vrebos

**What could be your contribution to scale up  
the use of flax in building and products?**



# Questions?



Please put questions in the chat

BBOBB



# Thank you



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Sébastien Hylebos - [sebastien@designregio-kortrijk.be](mailto:sebastien@designregio-kortrijk.be)