BALTIC REED

+ innovation to product +

Mariehamn 18th Sep 2024

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The problems

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HELCOM

- Hazardous substances
- Eutrophication
- Marine litter
- Underwater sound
- Non-indigenous species
- Seabed loss and disturbance
- Species removal (fishing/hunting)

- Eutrophication

  Dead zones
  Cyanobacterial blooms
  Water transparency

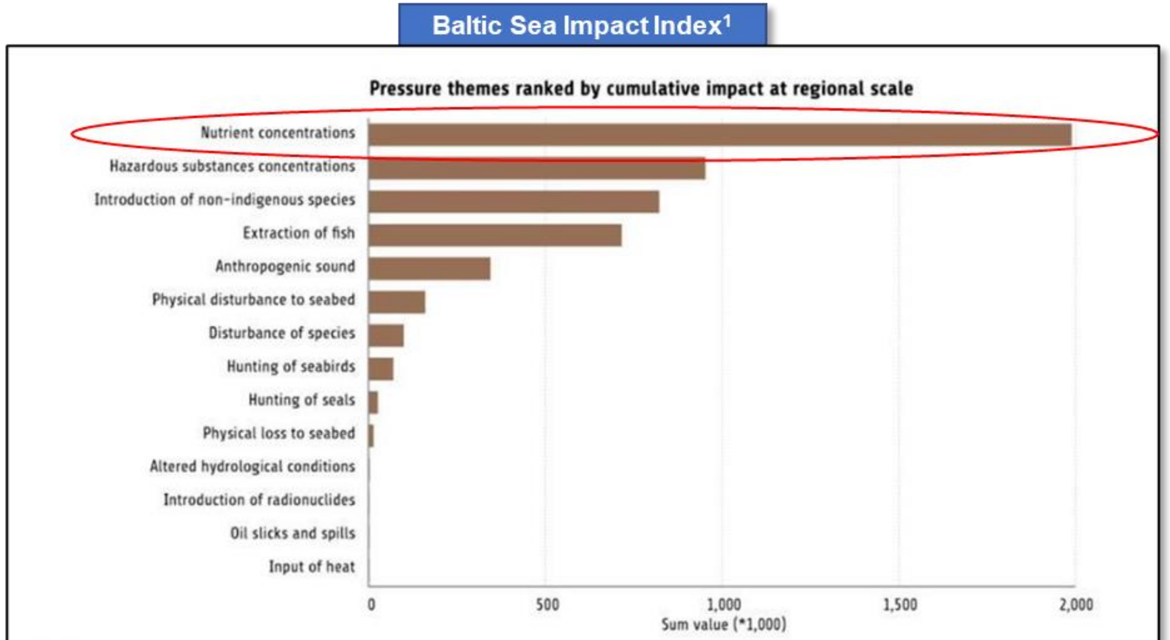

Figure 6.3.
Ranking of pressures themes attributed to cumulative impacts at regional scale in the Baltic Sea Impact Index. The 'Sum value' is calculated as the sum of impacts from each pressure on all studied ecosystem components at Baltic Sea scale. For further explanation to the pressures, see HELCOM (2018E).

Phosphorus (P)

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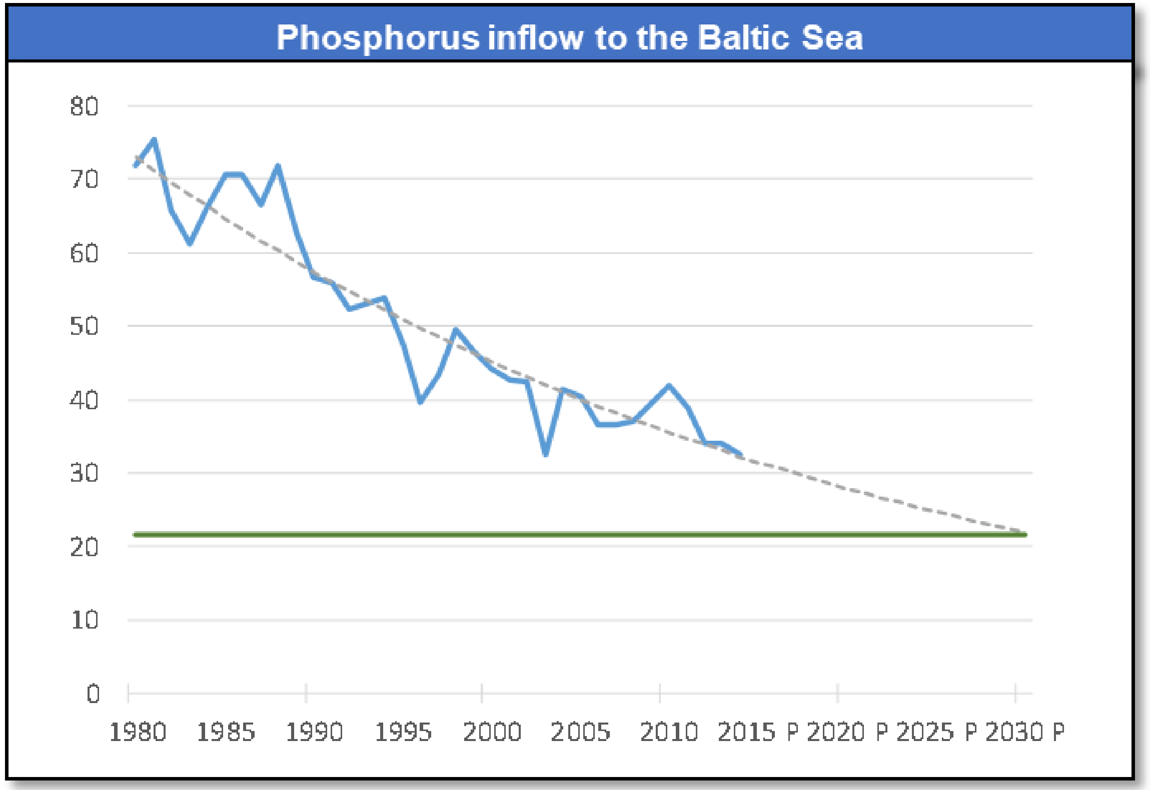


Reduction Targets

The proposed Country Allocated Reduction Targets

The following Country Allocated Reduction Targets for nitrogen and phosphorus have been proposed for adoption by the 2013 HELCOM Ministerial Meeting:

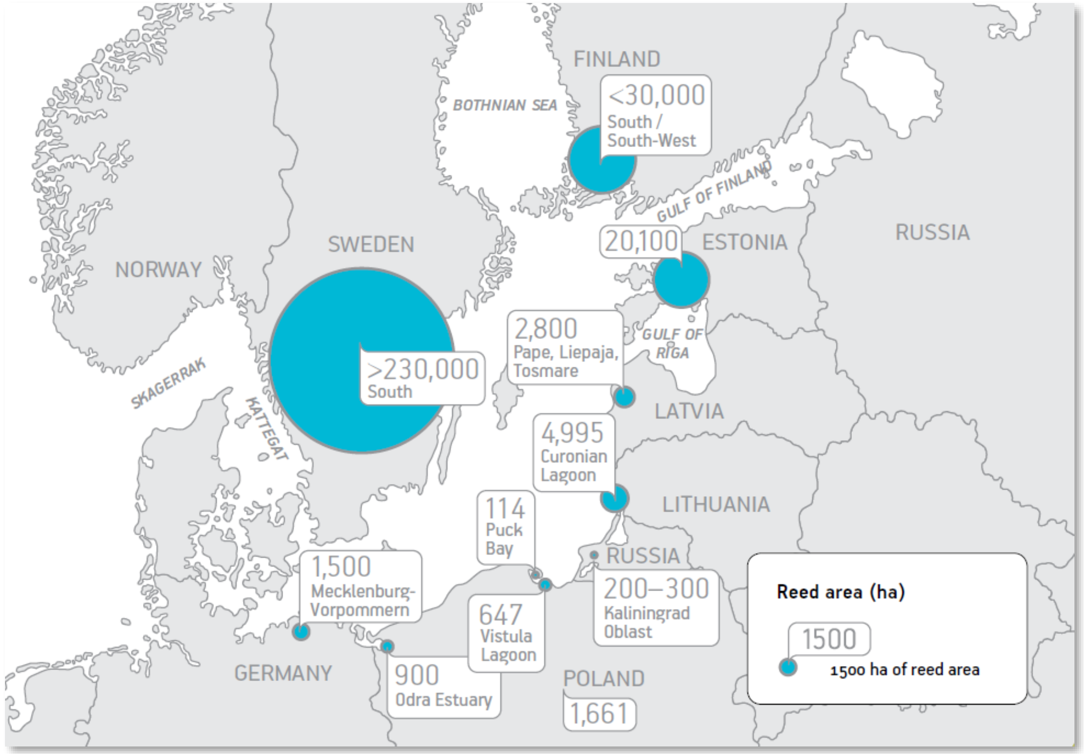
Table 1. Country Allocated Reduction Targets for nitrogen and phosphorus per country (rounded figures)

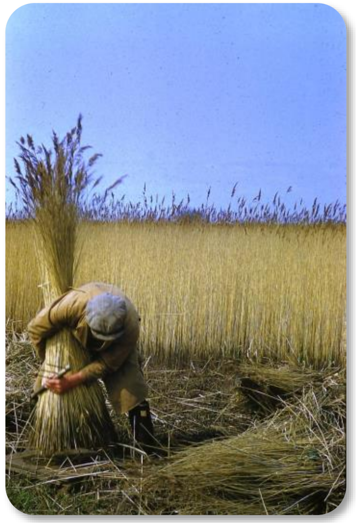
Country	PHOSPHORUS	NITROGEN
Denmark	*38*	*2,890*
Estonia	*320*	*1,800*
Finland	*330+26**	*2,430+600**
Germany	*110+60**	*7,170+500**
Latvia	*220*	*1,670*
Lithuania	*1,470*	*8,970*
Poland	*7,480*	*4,3610*
Russia	*3,790**	*10,380**
Sweden	*530*	*9,240*

Sweden + Finland = 886 tons Phosphorus (P)

Background – Reed

- Reed is rich on nutrients
- Grows quickly and there is a lot of it
- Sweden and Finland ~ 260 000 hectares of reed → 2,6 million tons of reed → ~2 600 tons phosphorus
- Not utilized
- Versatile material





Baltic Reed


BALTIC REED
A Interreg project to boost reed harvesting and develop reed-based businesses.
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BalticReed project

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- Three year project (2023-2026)
- Six project partners
- Budget € 3 Million (RFTB € 590 K)

Project Partners & Steering Group

John Nurminen Foundation

ARCADA

Centre for Economic Development, Transport and the Environment

Race for the Baltic

Länsstyrelsen Östergötland

Ålands landskapsregering

Stockholms universitet

SLU

Keskkonnaamet

Turku AMK
Turku University of Applied Sciences

Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

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Project activities

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- Harvest 300 hectares
- Examine water quality, fish- and birdlife
- Guidelines for Sustainable Harvest
- Build a reed island
- Develop and pilot value chains + commercial products

Developing Value Chain






- Applications;
  - Roofs
  - Straws
  - Fodder
  - Disposables (mugs, plates, packaging etc)
  - Soil improvement
  - Biochar
  - Building material
  - Biofuel
  - Textiles

- Test, analyse and pilot
- Explore business models
- Network with stakeholders

Reed product matrix

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MATRIX REED VALUE CHAIN										
	APPLICATION AREAS									
	Soil	Straws	Biochar	Biogas	Biofuel	Fodder	Building Material	Roofs	Disposable mugs/plates	Textiles
PARAMETERS										
Reed suitability										
Texture										
Chemical										
Nutrition										
Harvest										
Technique/Method										
Season										
Cost										
Transport										
Cost										
Market potential										
Market price										
Ready made reed product										
Substitute products										
Other environmental impacts										
Phosphorus capture										



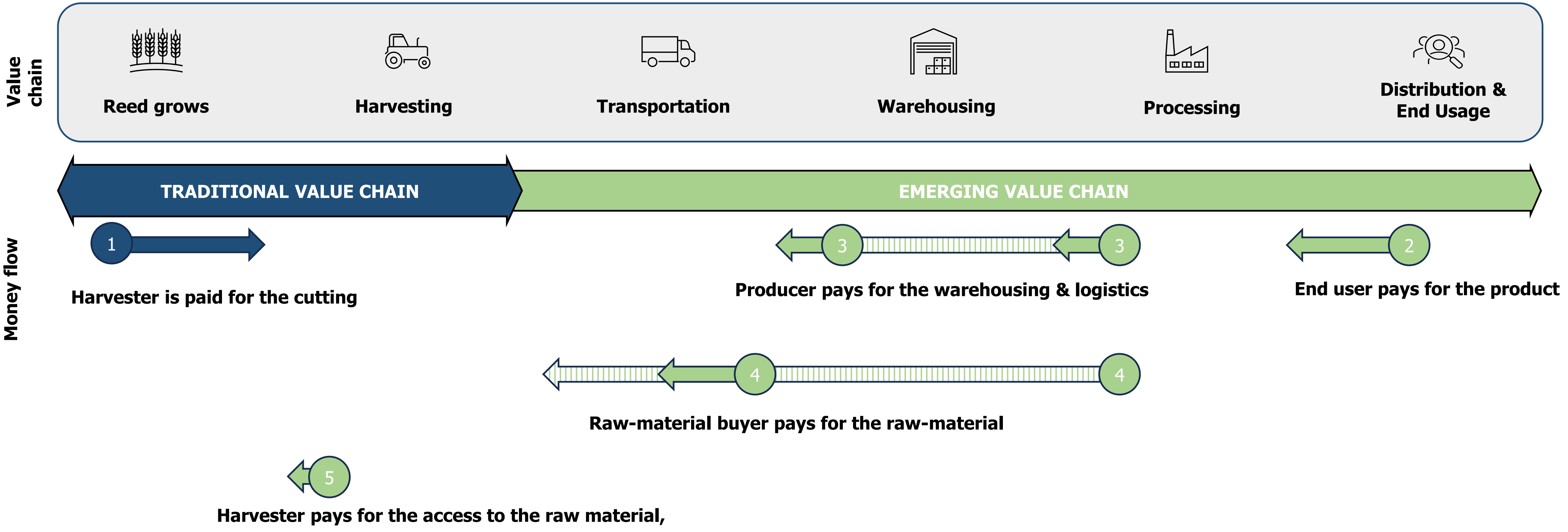






Value Chain

Cost and money flow



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Value Chain

Example: soil industry

Value chain	Reed grows	Harvesting	Transportation	Warehousing	Processing	Distribution & End Usage
Key player	Land / water owners; • Public • Private • NGOs	Harvester	Harvester Logistics partner	Harvester Warehouse operator Soil companies	Soil companies	Retailer End-user / Consumer
Typical motive	• Biodiversity • Nutrient removal • Water quality • Recreational • GHG	• Local source of livelihood • Synergies	• Livelihood • Synergies	• Economies of scale • Synergies • Ensuring the quality	• Alternative raw material • Increased brand value	• Sustainability • Quality

TRADITIONAL VALUE CHAIN | EMERGING VALUE CHAIN

”Bottlenecks”

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Barriers

- Harvest
- Logistics
- Consistency (volume and quality)
- Willingness to pay
- Awareness

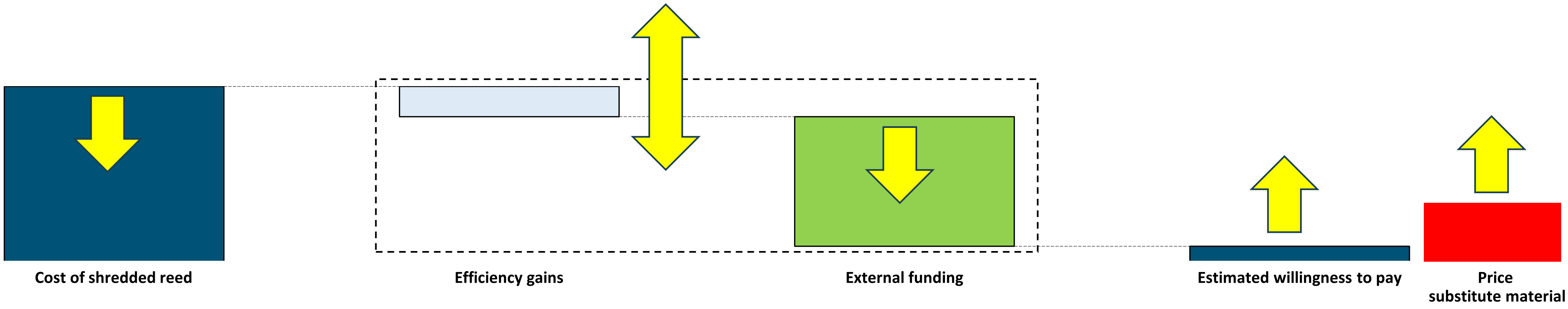



External Funding – example

Bridging the gap

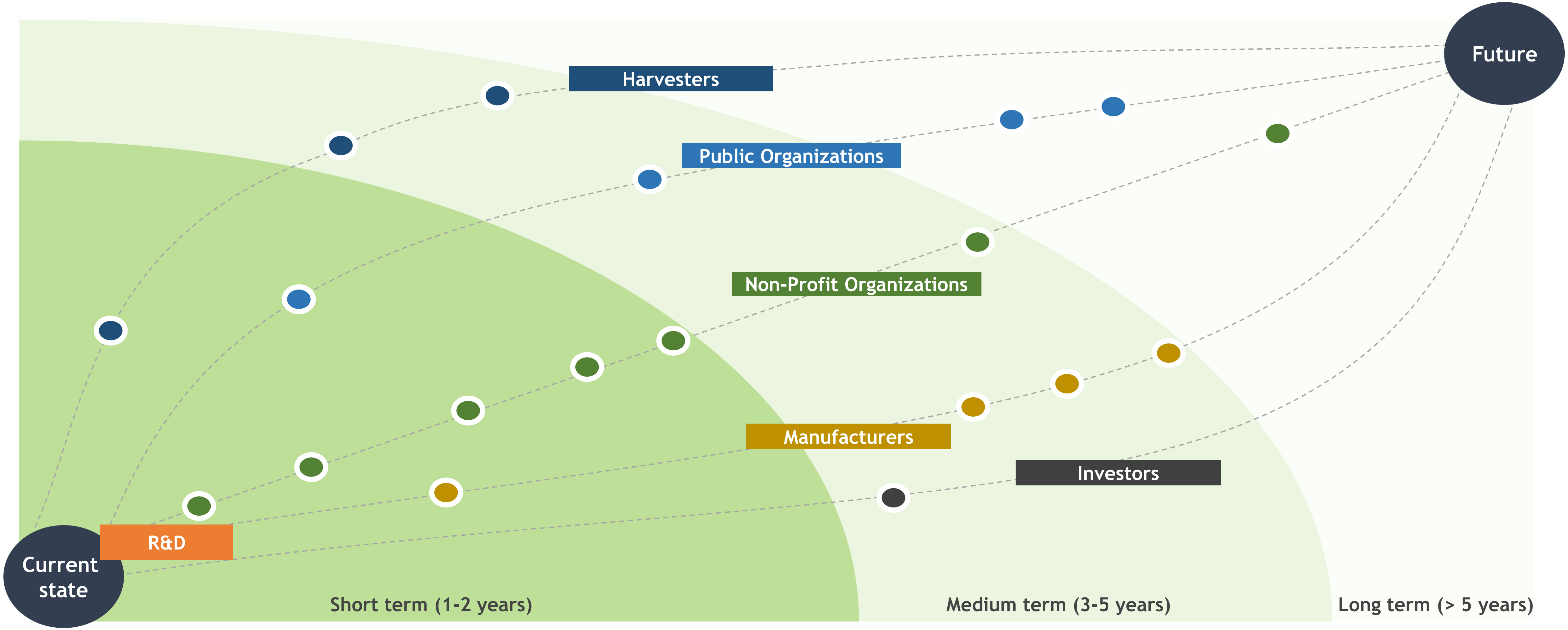
From current costs of shredded reed… → **…To match the substitutes**

The **current cost** of shredded reed	**Economies of scale;** Larger volumes, better planning more efficient harvesting machines & techniques.	Investors, grants, subsidies, existing budgets, etc..	**Competitive market price**



The Road Map

Including all stakeholders



Reed Market Potential

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Examples

- Sweden + Finland ~ 4,8 million tons soil production / year
- 80% is peat
- **Reed** 5 % market share = 192 000 tons / year
  - **~ 25 600 hectares per year**
  - **154 tons P**
  - **17%**

- Sweden + Finland ~ 435 000 horses
- Equals 1 500 000 million tons / year
- **Reed** 5 % market share = 72 000 tons / year
  - **~ 9 600 hectares / year**
  - **86 tons P**
  - **10%**

Sweden + Finland =

886 tons Phosphorus (P)

- Century old craft and growing market
- "European countries as Germany, Netherlands, the UK, and Denmark have large areas of drained wetlands and import up to **85% of their reed**"*

RACE FOR THE BALTIC

*Resources, Common Reed for Thatching in Northern Germany: Estimating the Market Potential of Reed of Regional Origin, 2020


THANK YOU!