

The power of the ocean in your crops: from seaweed to biostimulant

North Sea Farm Foundation

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Outline

- Our dream
- Bio4safe project
- From seaweed to biostimulant
- Three ways to move forward



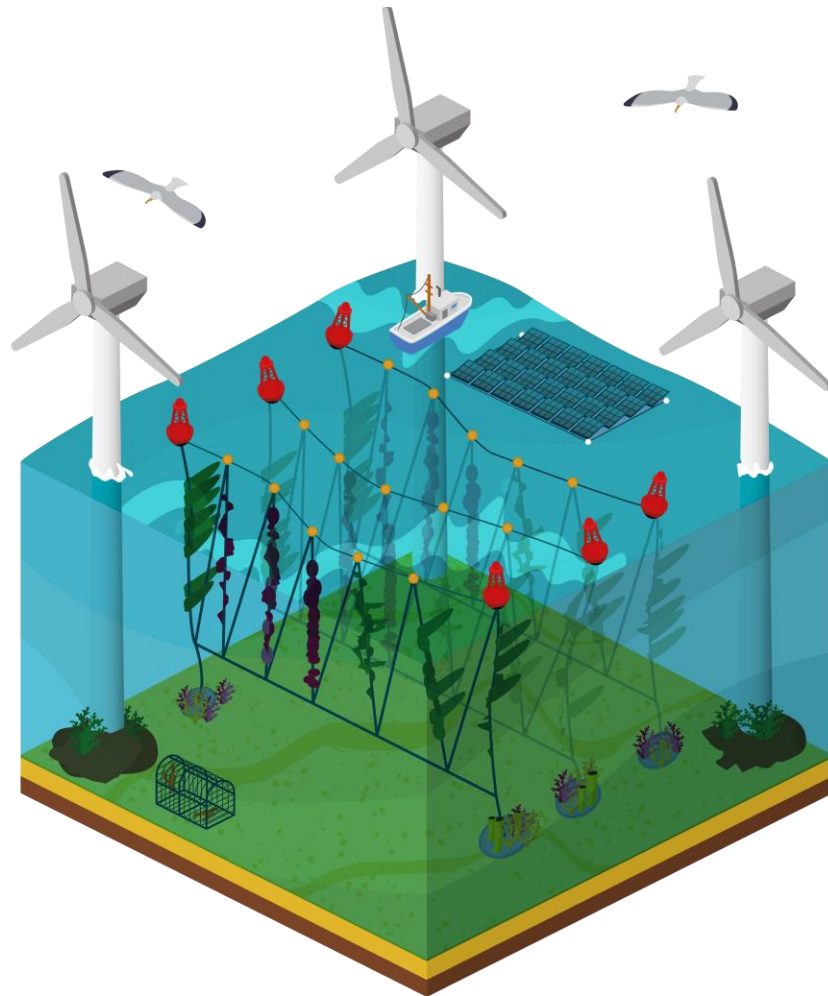
NOORDZEE
BOERDERIJ



The extraordinary potential of seaweed



The multi-use sea farm



- Uses space multifunctional
- Enjoys great market appreciation
- Expands employment opportunities
- Enhances biodiversity

500 km² multi-use zeeboerderij

GELIJK AAN PRODUCTIVITEIT VAN

2000 km² =

LANDBOUWGEBIED



SECTOROMZET VAN

1 miljard

EURO

VASTLEGGING CO₂ IN ZEEWATER

= 8%

DOELSTELLING KLIMAATAKKOORD LANDBOUW

30% waterbesparing

VOOR NEDERLANDSE LANDBOUWSECTOR

LEVERT

4000

BLUE ECONOMY BANEN

BESPARING VAN

1,2MT CO₂

DOOR GEBRUIK ALS EIWITVERVANGER

BIJ 14.000KM²

46%

DOELSTELLING KLIMAATAKKOORD TOTAAL

500 km² multi-use zeeboerderij

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2000 km² =



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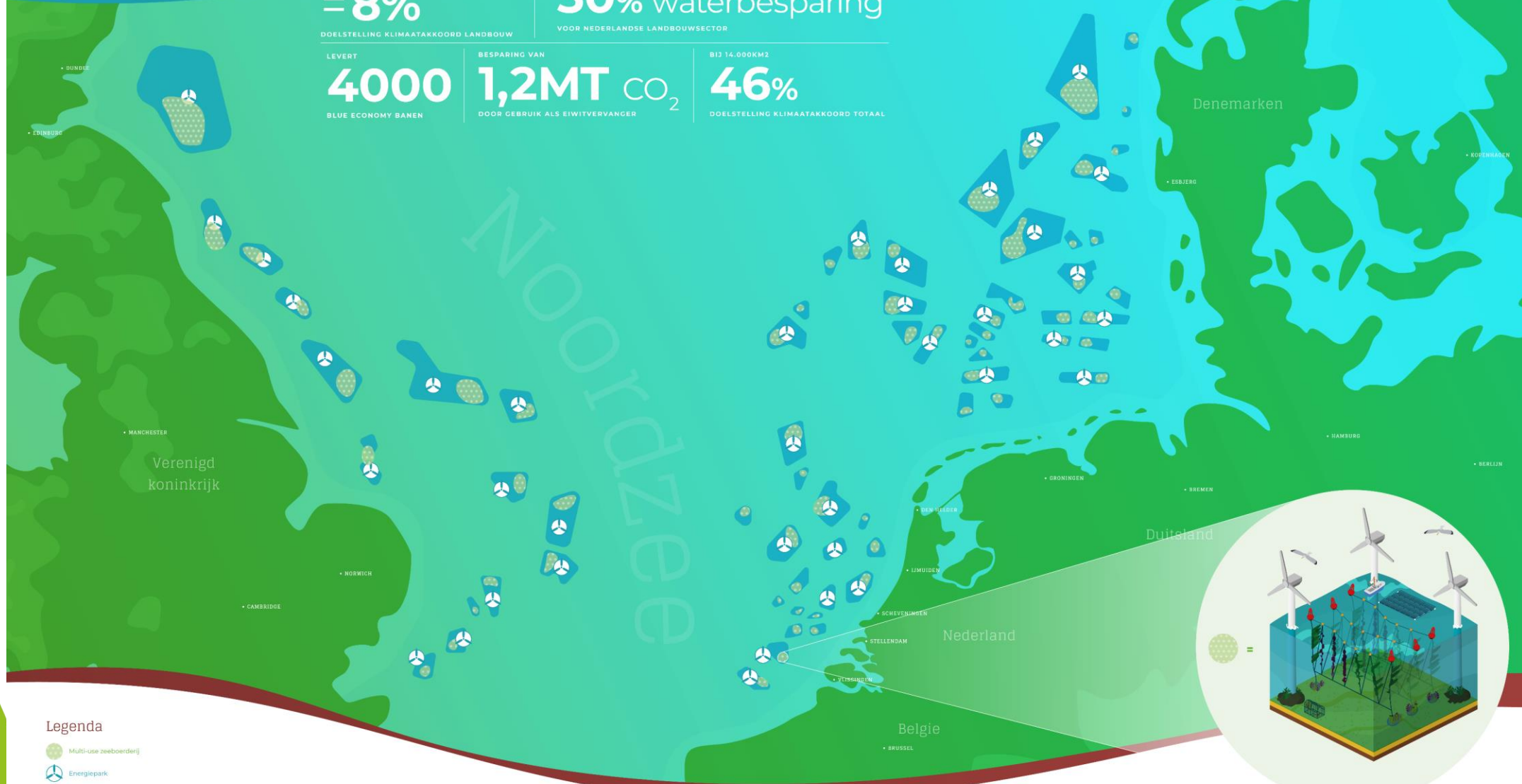
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Legenda
● Multi-use zeeboerderij
● Energiepark



North Sea Farm Foundation

The North Sea Farm Foundation is the **catalyst** of the Dutch and EU seaweed sector, aimed at a **strong** and **healthy seaweed chain**

Priorities



Production locations



Production techniques

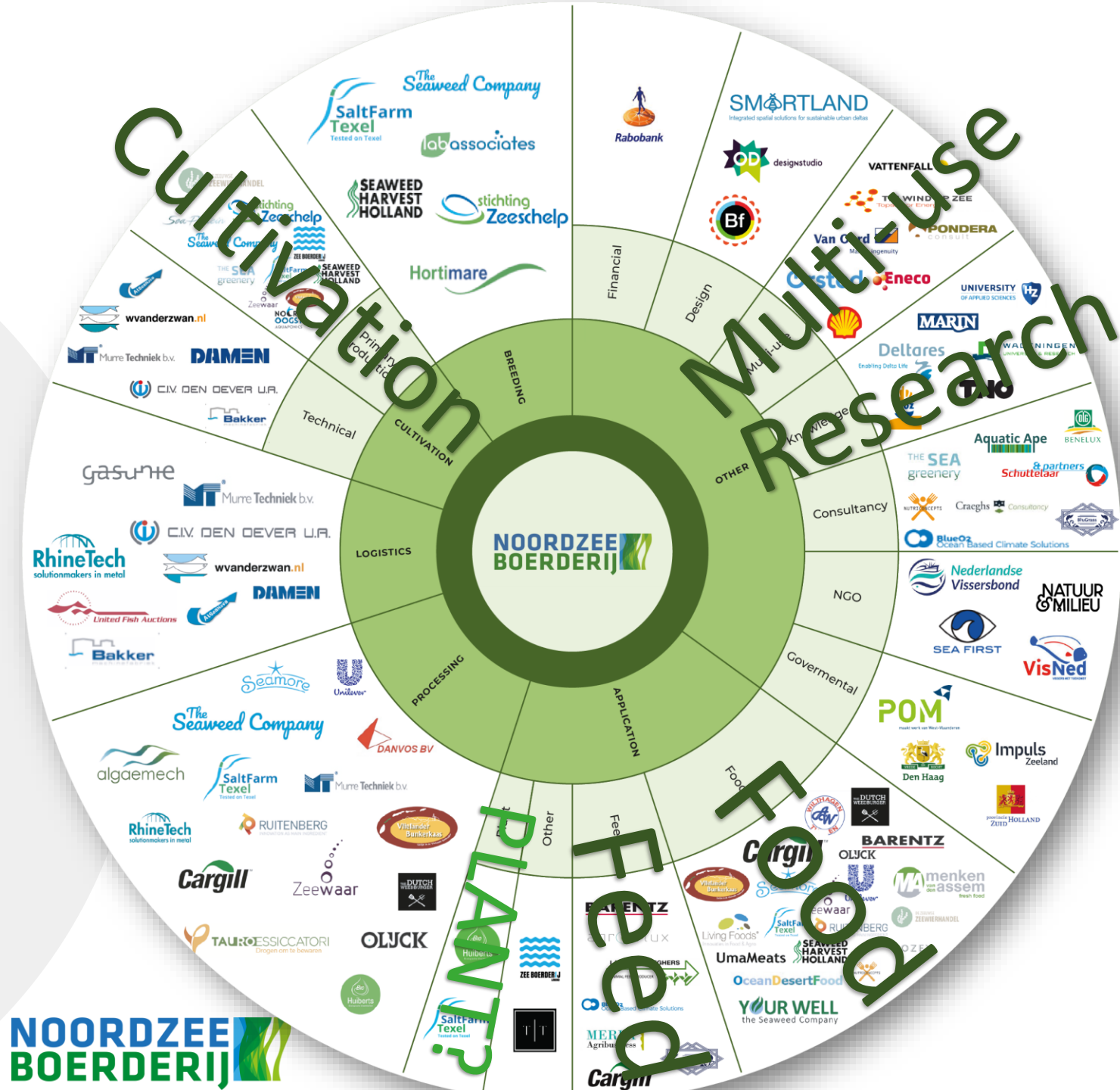


Markets & applications

Seaweed platform

Since 2014:

- >90 members
- 20 internationally acting companies
- >300 individuals
- 5 working groups





Food Safety
Professionalizing
sampling



Interreg 
2 Seas Mers Zeeën
Bio4safe
Horizon 2020 - Growth & Innovation



Interreg 
2 Seas Mers Zeeën
ValgOrize
European Regional Development Fund



Akkerbouw op zee
Turn-key farm systems

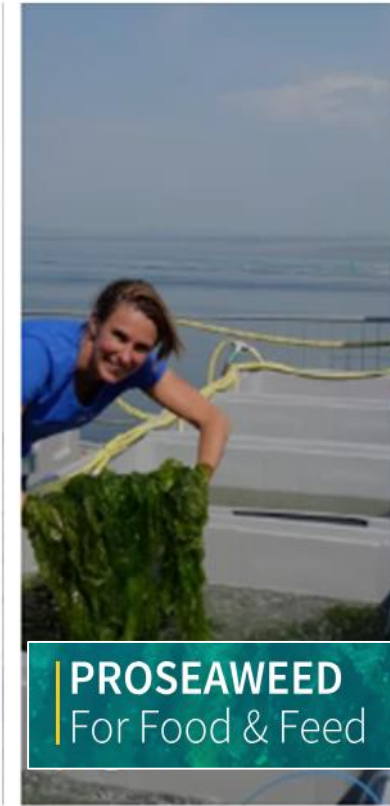



Intelligent Management System for Integrated Multi-trophic Aquaculture

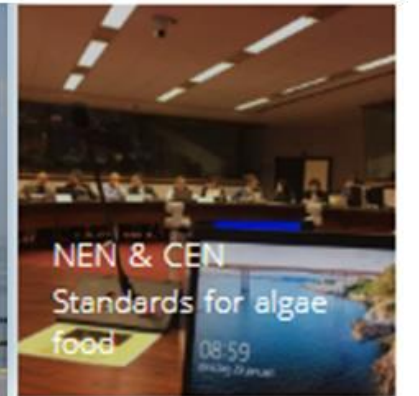


GROENTE UIT ZEE
Recepten en informatie over zeewier en algen

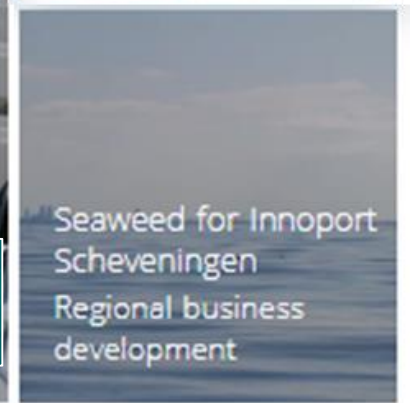
Cookbook
Seaweed & plant-based recipes



PROSEAWEED
For Food & Feed



NEN & CEN
Standards for algae
food
08:59
Monday, 22 January



Seaweed for Innoport
Scheveningen
Regional business
development

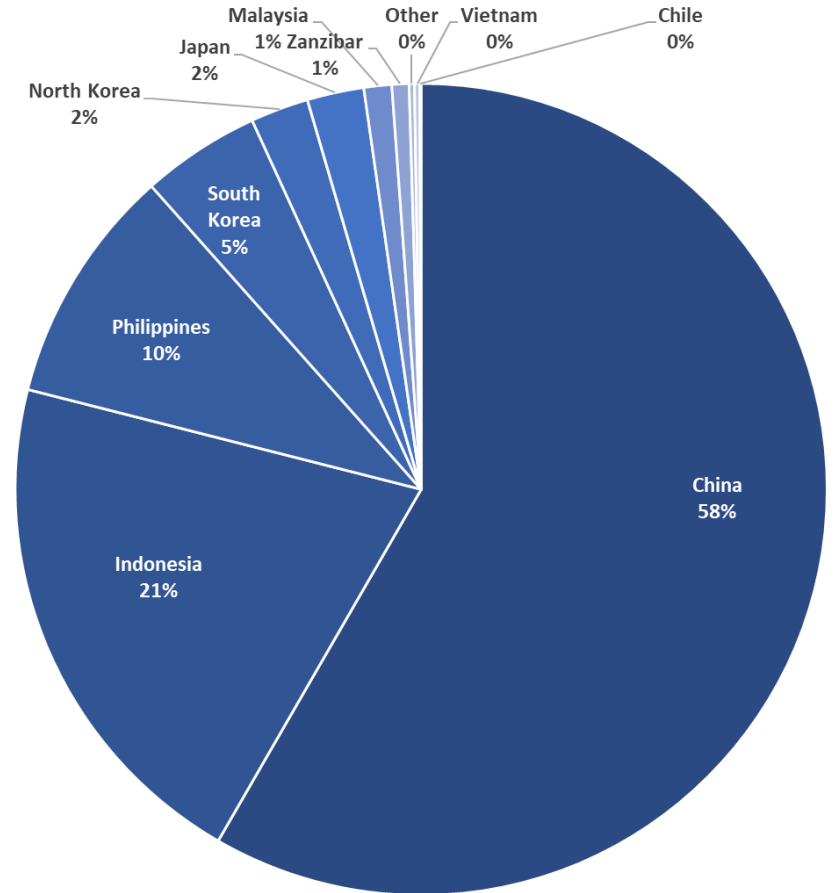
The global seaweed market

- Global market value: **\$10bln.** (2016)

- **China** accounts for 58% of the world's farmed seaweed

Annual growth rate
> 9%

of the volume of seaweed



Where sea meets land: biostimulants!



But there is more: the versatility of seaweed

FOOD



FEED



COSMETICS



AND MUCH MORE..

MEDICINE



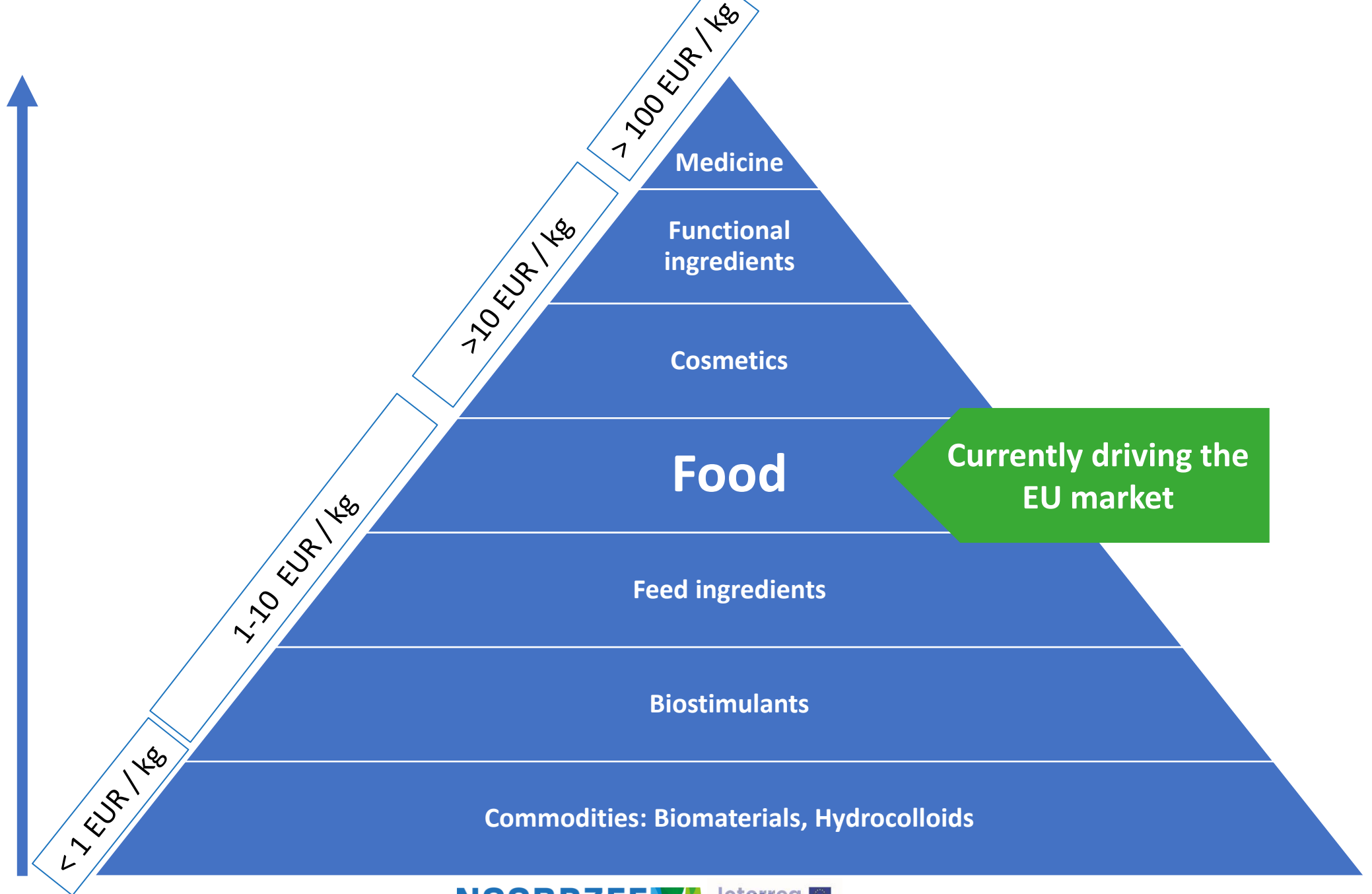
PACKAGING



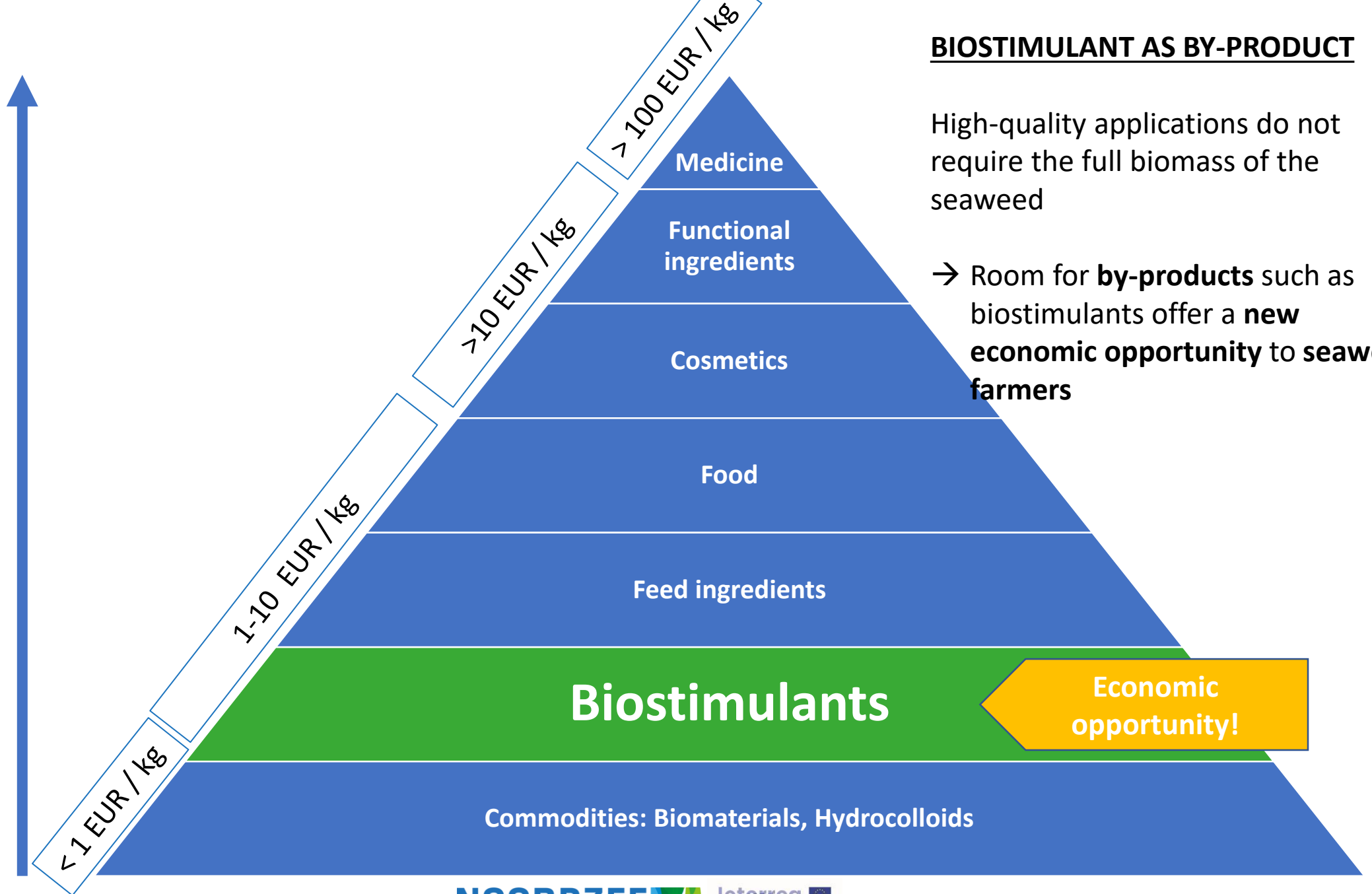
BIOFUEL



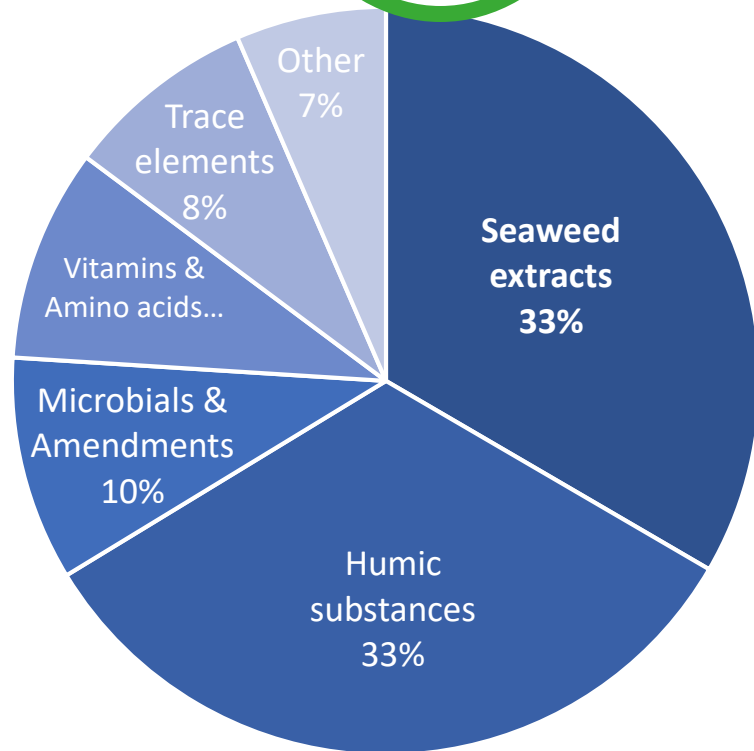
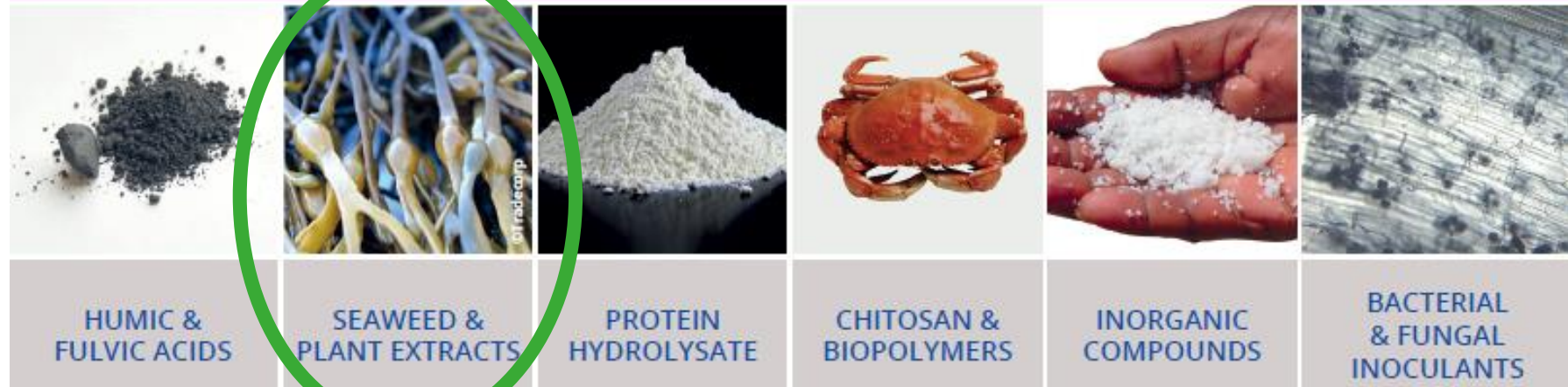
Price of the material



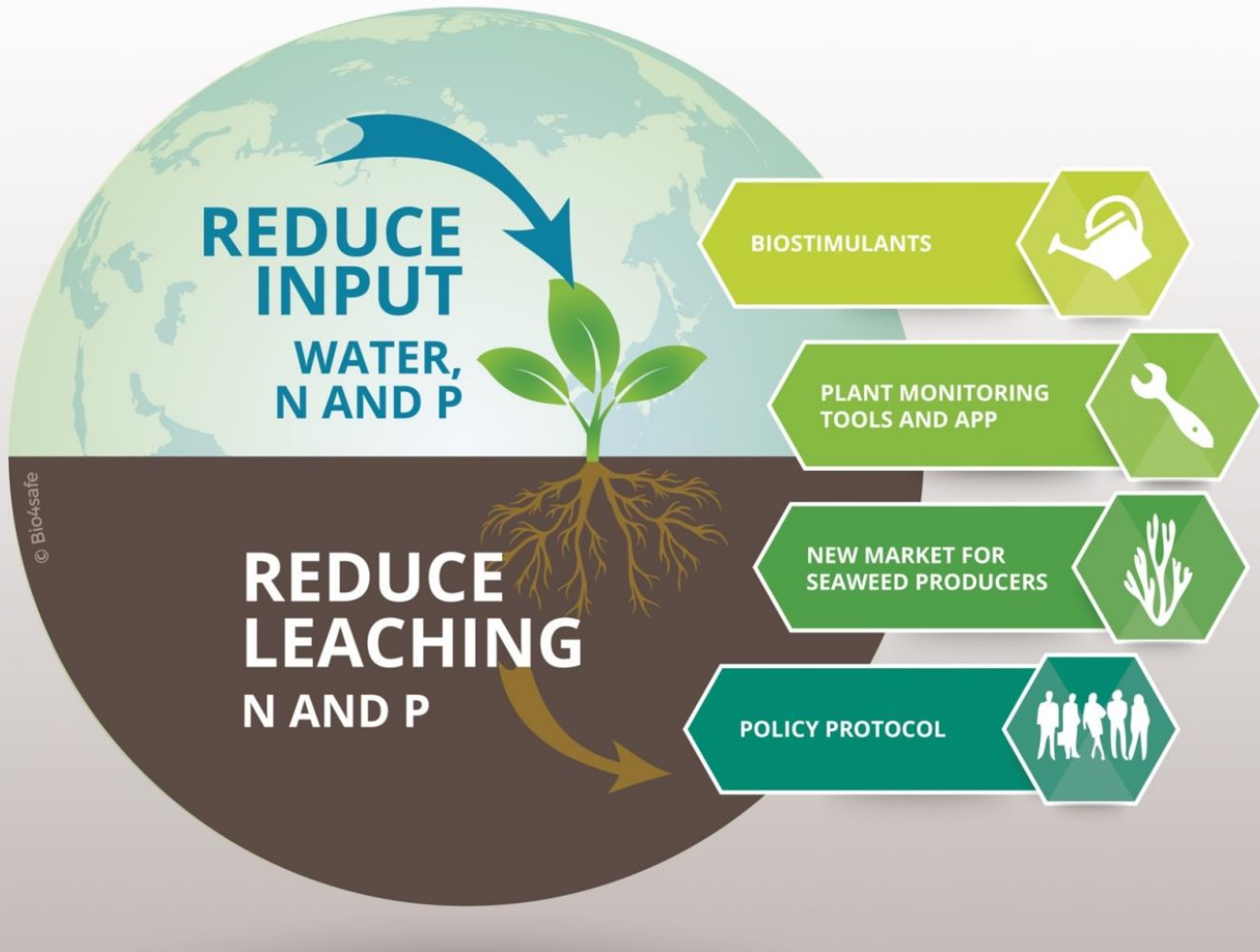
Price of the material



TYPE OF BIOSTIMULANTS



Seaweeds compose **>33%** of the existing biostimulant market



AIMS OF THE BIO4SAFE PROJECT

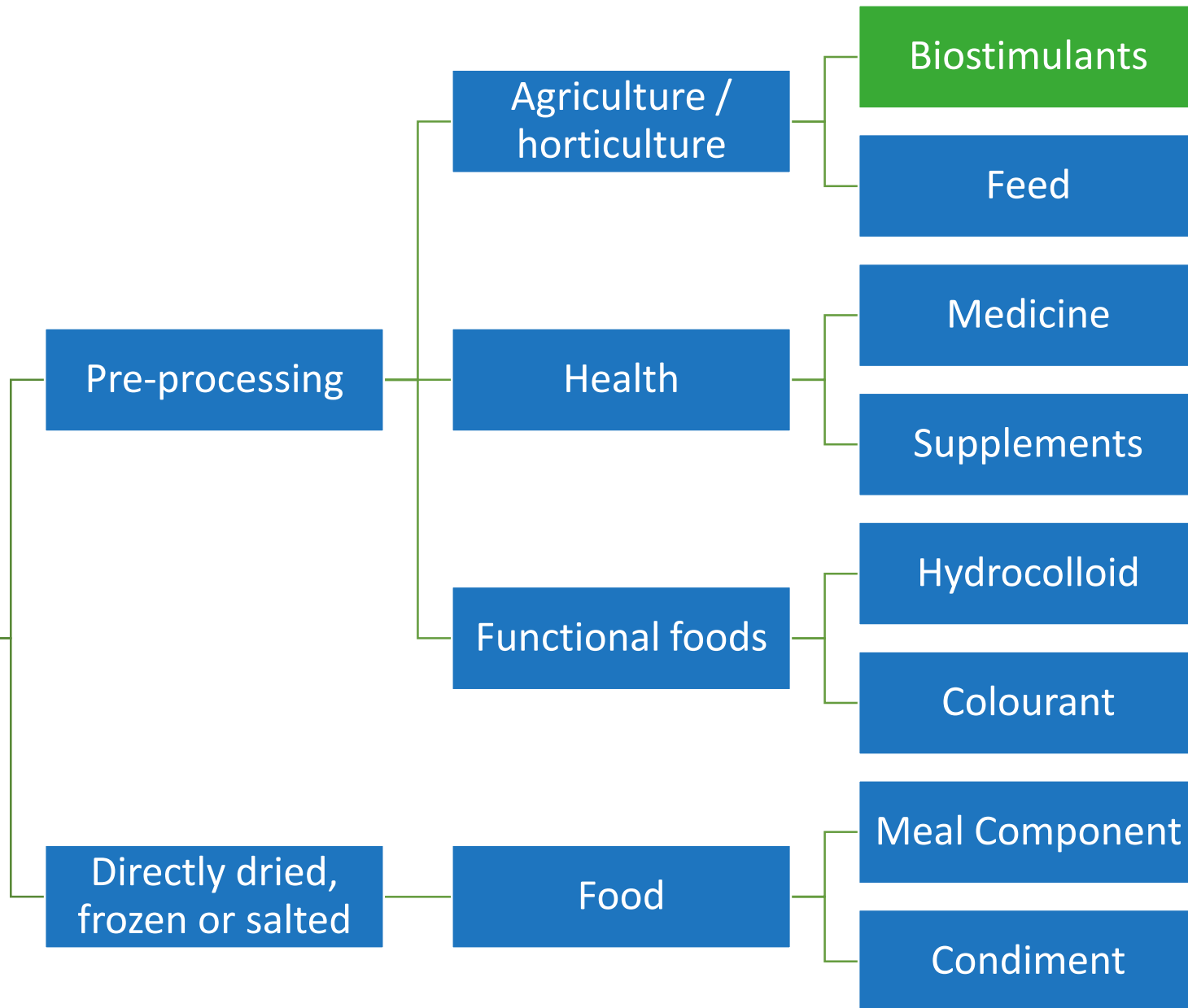
1. **Reduce** water (20%) and fertilizer use (10%) in horticulture
2. **Increase** the use of seaweed biostimulants
3. **Create** economic opportunities for seaweed producers
4. **Support** policy makers with a policy

Cropfit

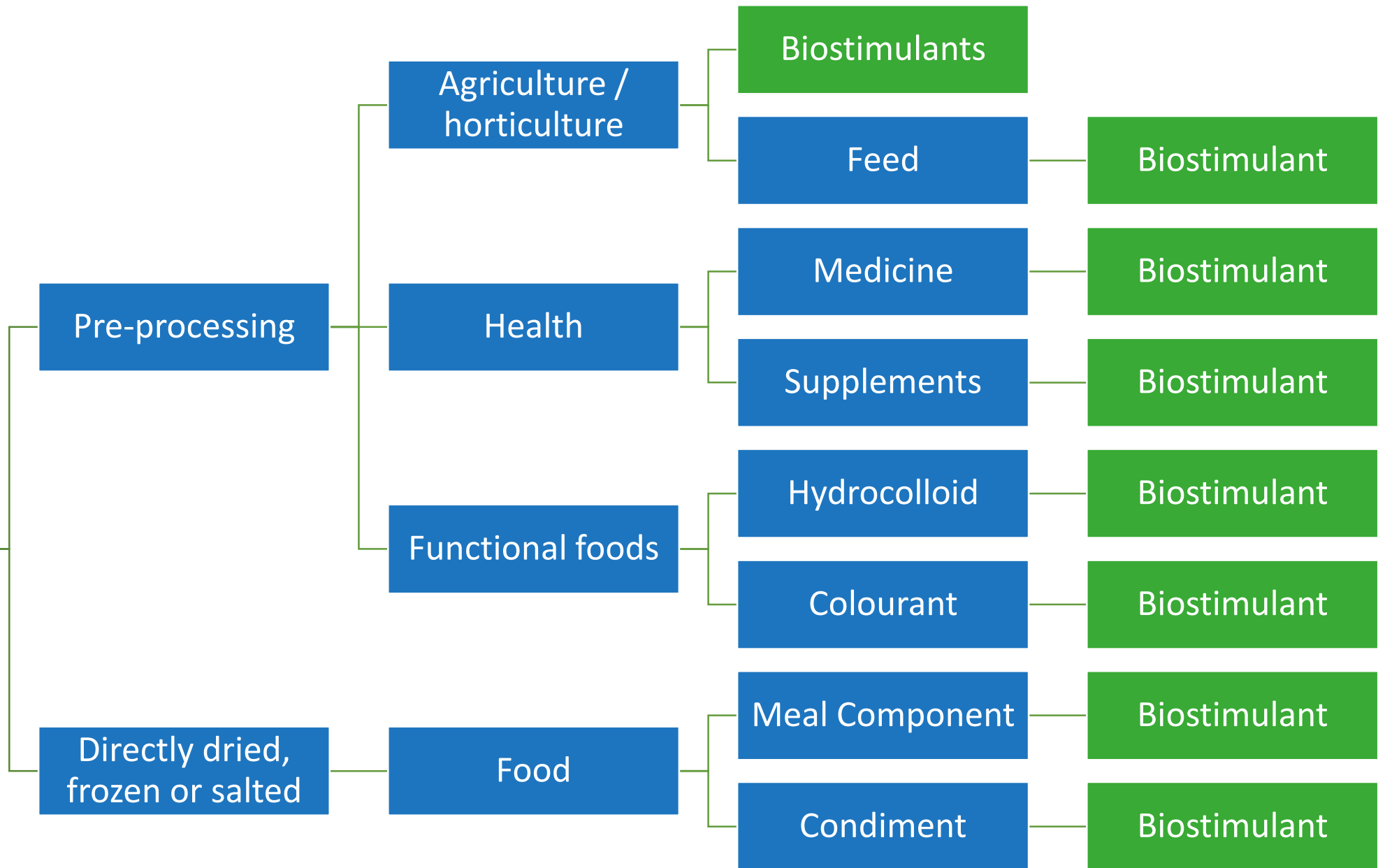


Interreg 
2 Seas Mers Zeeën
Bio4safe

Seaweed



Seaweed



Seaweed

How to get there?

Biostimulants

Biostimulant

Biostimulant

Biostimulant

Biostimulant

Biostimulant

Biostimulant

Biostimulant

Our goal & role



From seaweed to biostimulant: A new opportunity for seaweed producers

Seaweed from Europe

Main parameters of European seaweed production

- Many of European countries produce seaweed:
 - **75%** is produced by France & Norway
 - Total volume: **± 300.000 t WW** (1% of worldwide production)
 - Total revenue: **± \$ 55 mln.**
- Average pricing: **\$2 per kg DW**
- **99%** of the market depends on wild harvest



Most used species for biostimulants



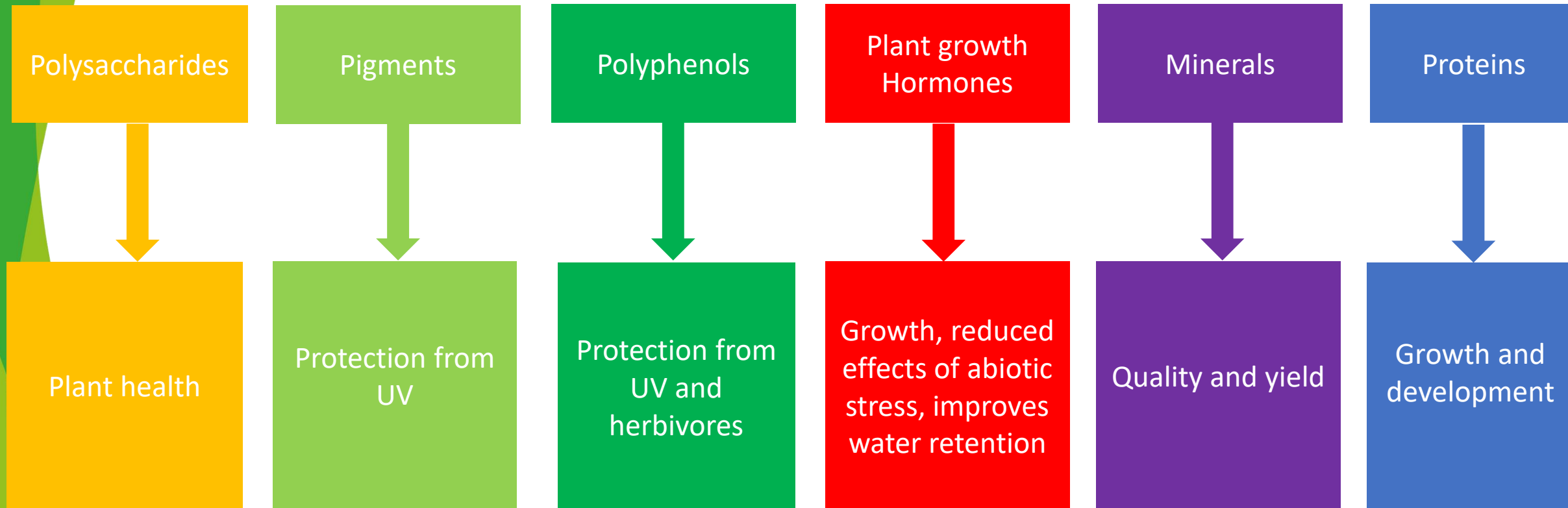
Species are mostly wild harvested and non-cultivable

Alternatives from Europe

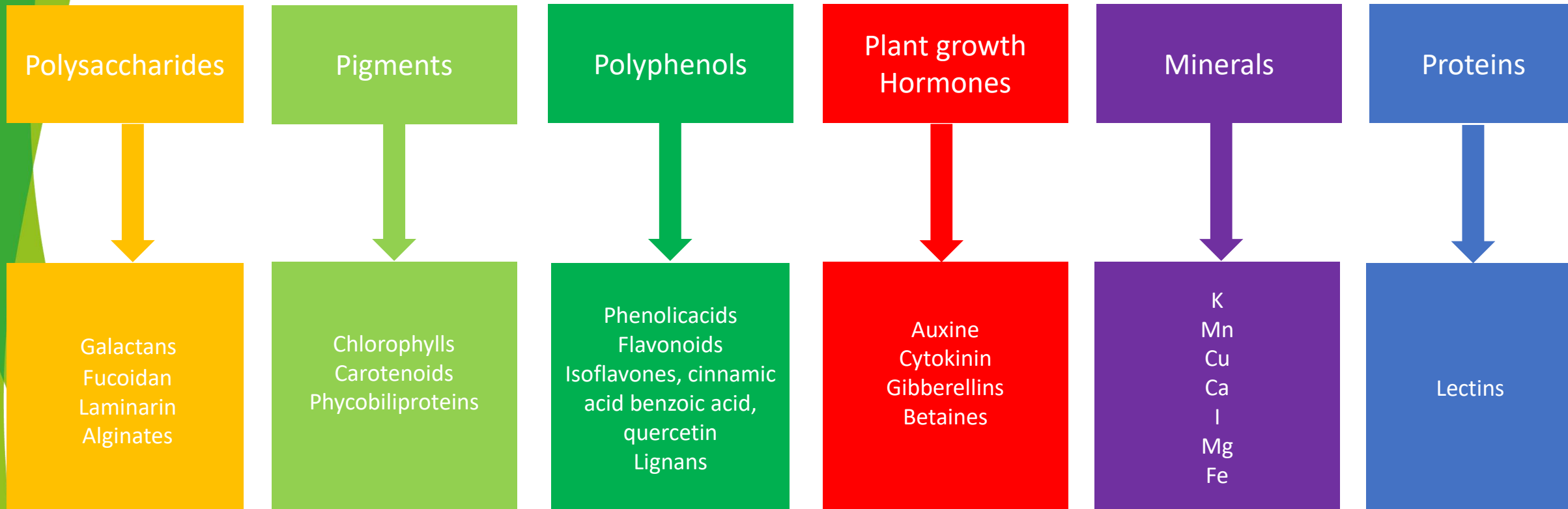


1. Easily cultivatable
2. More consistent quality
3. Predictable volumes
4. Scalable sustainable production
5. Suitable for biostimulant use?






What are common ingredients of biostimulants?



What ingredients are available in seaweed?








> 50 interviews

Seaweed cultivation/ Wild harvest	Logistics, processing & biostimulant production	Distribution & trading	Sales to end-users	End-users
 Two images: the left shows long rows of seaweed cultivation racks in the ocean; the right shows a red boat with a crane harvesting seaweed from a rack.	 A large pile of green seaweed being processed on a conveyor belt in a factory.	 A white truck with 'DAVITA' branding parked in a warehouse.	 Two images: the left shows a person in a greenhouse with plants; the right shows a warehouse with stacks of white bags.	 A person in a field tending to plants, with a tractor visible in the background.
<ul style="list-style-type: none">• Biostimulant raw material supplier	<ul style="list-style-type: none">• Biostimulant raw material supplier• Biostimulant end-product producer	<ul style="list-style-type: none">• Biostimulant end-product producer• End-product repackaging/rebranding• Biostimulant trader/agent	<ul style="list-style-type: none">• Biostimulant end-product producer• End-product repackaging/rebranding• Biostimulant trader/agent	<ul style="list-style-type: none">• Farmers• Gardening professionals• Household consumers

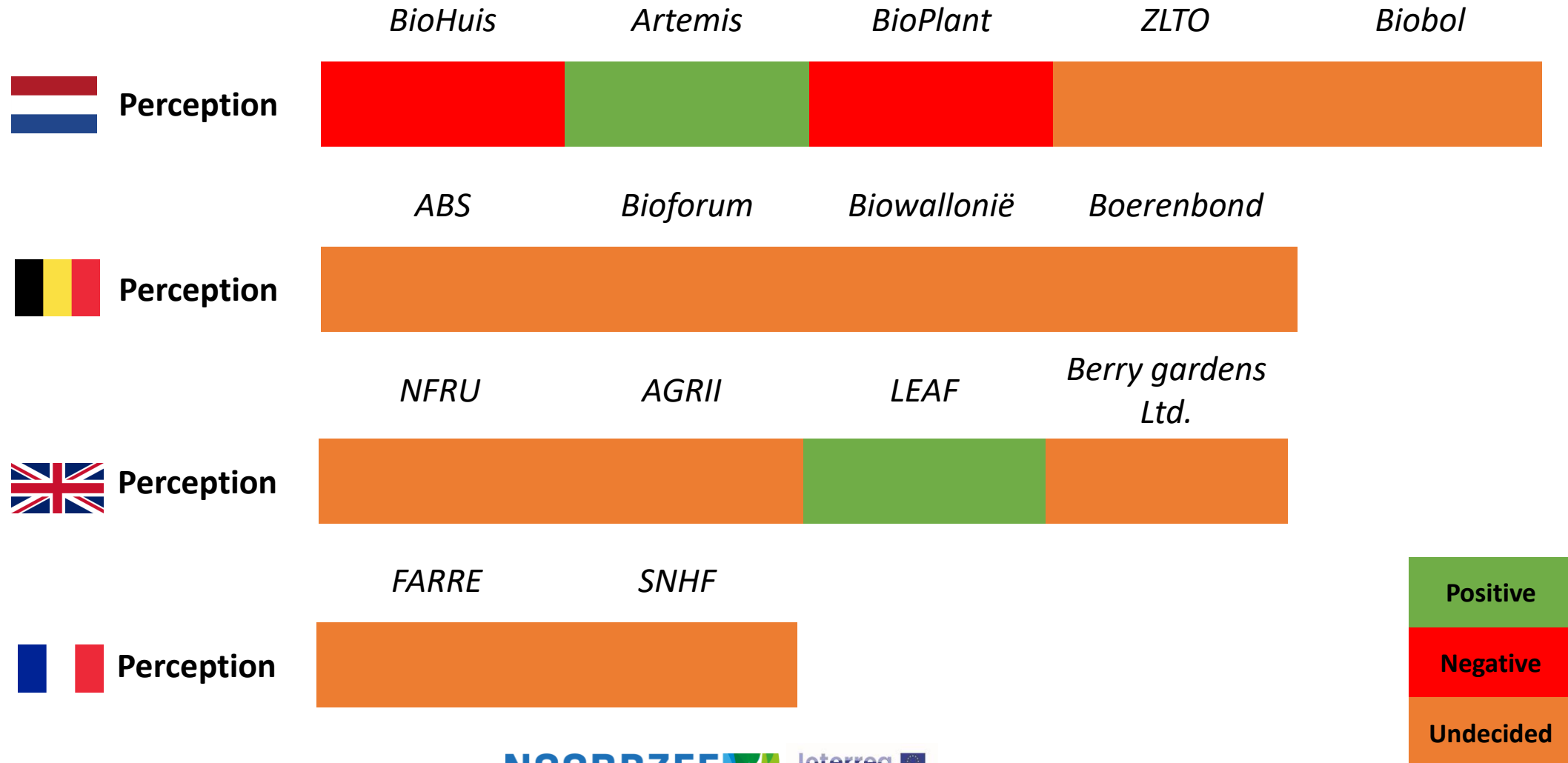
Stakeholder participation & value chain integration



Insights from the value chain

	Seaweed cultivation/ Wild harvest	Logistics, processing & production	Distribution & trading	Sales to end-users	End-users
					
Opportunities	<ul style="list-style-type: none"> Sustainable production More seaweed species can be used 	<ul style="list-style-type: none"> Improved market knowledge for biostimulant producers 		<ul style="list-style-type: none"> Improved product knowledge for providers and clients 	<ul style="list-style-type: none"> New applications for biostimulants Increased demand for (seaweed based) biostimulants
Challenges	<ul style="list-style-type: none"> Chance of unstable (quality/quantity) supply chain Low prices of seaweeds with lower quality 	<ul style="list-style-type: none"> Knowledge about mode of action is limited 		<ul style="list-style-type: none"> Regulation about requirements labelling is not adequate 	<ul style="list-style-type: none"> Proper application of biostimulants is prone to specific soil conditions of clients
Threats	<ul style="list-style-type: none"> Limited seaweed harvest → seaweed is harvested from outside the 2-Seas Region 			<ul style="list-style-type: none"> Market opportunism, products with false claims are entering the market 	<ul style="list-style-type: none"> Legislation is not consistent

Perception of biostimulants among sector organisations



Opportunities and challenges

- European production is there, ingrediënts are interlinked and there are cultivatable species.
- Perception is more diffuse
 - Hesitant attitude of farmers in horti and agriculture
 - Low level awareness of seaweed biostimulant by e.g. sector organisations and end users
- **At the same time a demand for sustainable ingrediënts in biostimulant products**

Increase
variety of
seaweed
species used

Increase
application
range & use

Business
case for
seaweed
farmers

Three ways to move forward

From seaweed to biostimulant

1. Inform sector organisations of the advantages of seaweed biostimulants
2. Sharing success stories of farmers that use biostimulants
3. Increase awareness of Bio4safe project

How?
A roadshow!

Roadshow – from seaweed to biostimulant



Seaweed cultivation/
Wild harvest

Logistics, processing &
biostimulant
production

Distribution & trading

Sales to end-users

End-users



WE WANT YOU!
(IF YOU ARE AWESOME)

Three ways to move forward

- If you want to work together in participating in this roadshow. **Let us know!**
- Share seaweed biostimulant experiences. **Farmer success stories.**
- Get in touch for more info on the **bio4safe project.**

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Thank you for your attention!

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