



Knowledge grows

# Baltic Peat Producers Forum in Tallinn

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# Yara - global mission, local presence



- Countries with sales<sup>1)</sup>
- Yara Plants
- Smaller sites<sup>2)</sup>
- Head office
- Phosphate mines
- Joint ventures
- Sales offices and R&D sites
- Digital Hub

1) More than 10,800 Yara-branded retail outlets around the world  
2) Yara operated terminals and logistical production sites

**17,000**

Employees worldwide

**11.6**  
Billion USD  
revenue

**28**  
Production  
plants

**160**  
Countries  
with sales

**10,800**

Yara-branded retail outlets globally

We aim to create measurable, positive global impact to help feed the world and contribute to a responsible food system through reducing emissions and improving livelihoods.

This is how Yara contributes to live up our ambition of:

**“Growing a Nature-Positive Food Future”**

# 1905

**The spark that led to Norway's most important invention**  
Extracting nitrogen from the air with electric power from Norway's waterfalls. Kristian Birkeland and Sam Eyde's invention fed millions, helped farmers create profitable businesses, and saved lives.



# Lifesaving innovations in the world

Fertilizers are the single most important development in global health... by far!

Without using fertilizers there would be sufficient food for 4 billion persons



\*[www.medigo.com/blog/infographics/lifesaving-innovations/](http://www.medigo.com/blog/infographics/lifesaving-innovations/)



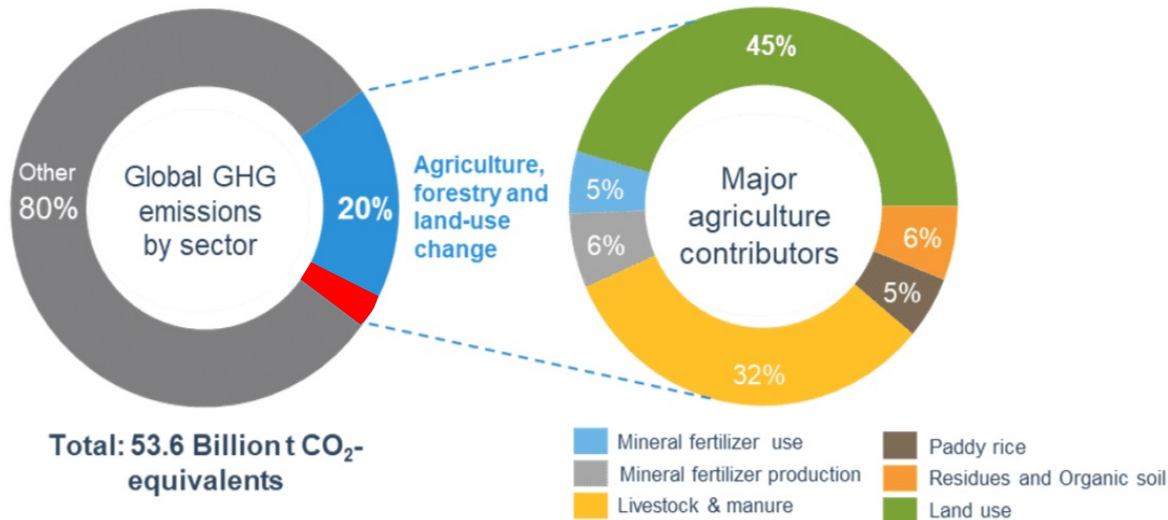
**We all have a common  
task at hand**

**The global population is growing!  
More food is needed, with less  
arable area and with less  
impact to the climate**





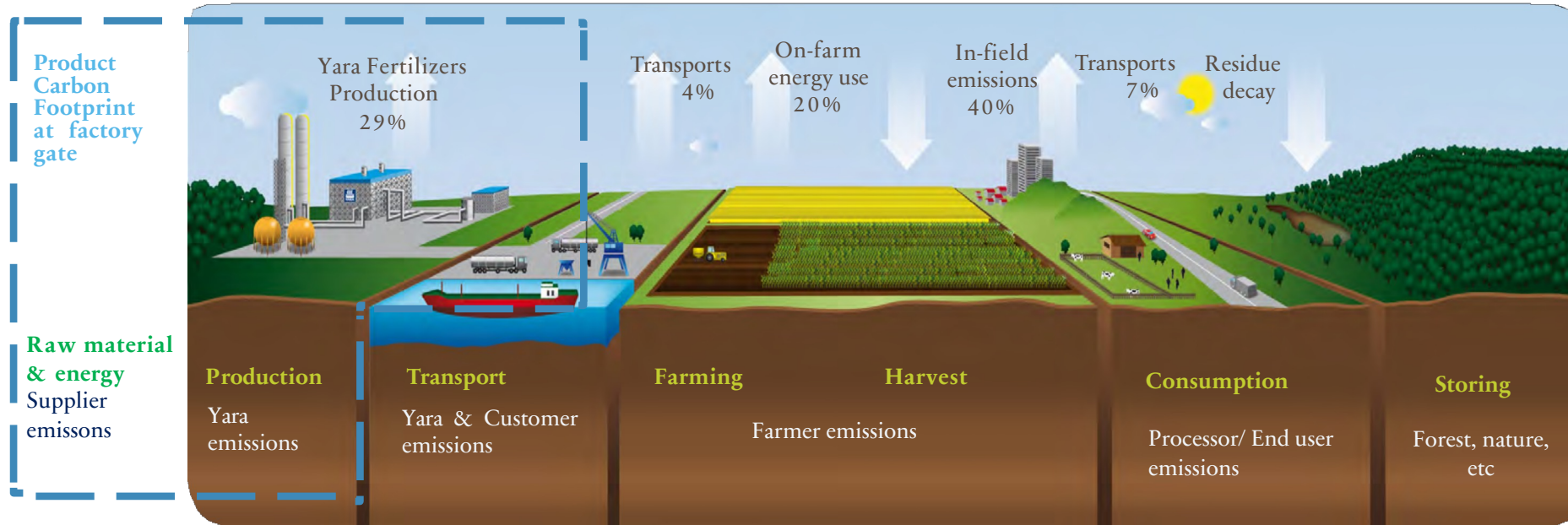
# Fertilizers are „The Devil“ and cause of all problems...? What are we actually talking about?



Notice, that 45% of agricultural GHG comes from land use!

So, shall we stop eating?

# What is the fertilizers carbon footprint at factory gate?

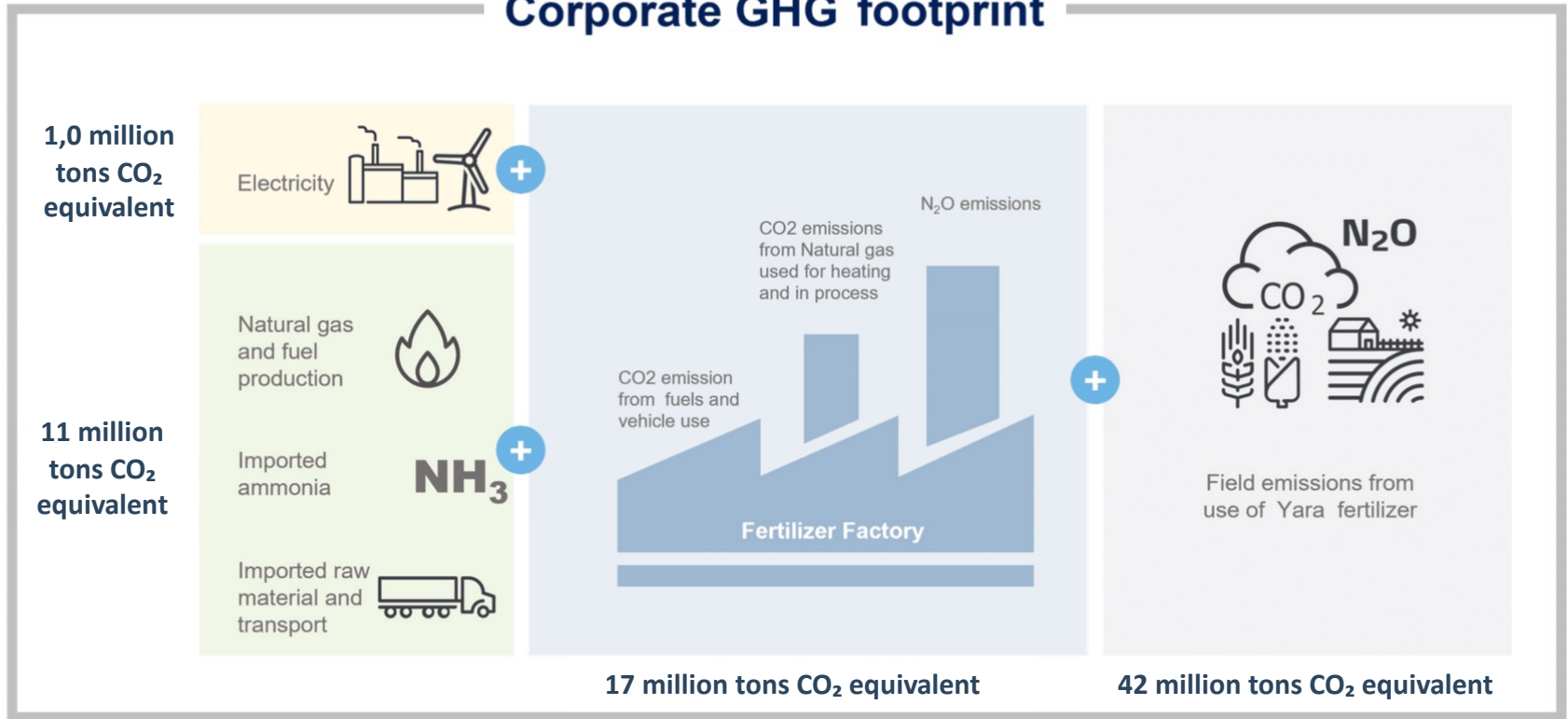


\* Example, as average for different crops, products, transports, etc.



# Yara as world biggest fertilizer producer, knows exactly what's our impact

## Corporate GHG footprint



So what can we do about it?





# The challenge

Global population is growing  
More food needed with less cropable area  
Climate impact must be reduced

*Food production plus  
processing represent 25% of  
total global CO<sub>2</sub> emissions*

# Our wish list

Green fertilizers is important  
step on the way towards  
decarbonizing the foodchain

*Incentives for green transition  
Lots of green hydrogen  
Climate traceability  
Partnerships with food chain*

# So where we could influence with biggest impact?

## Food Production



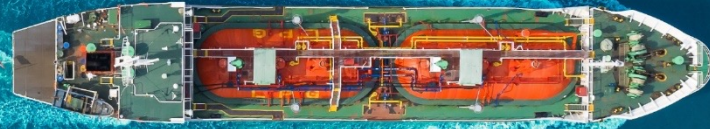
The most important contributors to reducing emissions could be improved agronomic technologies and practices, less food waste and the protection and restoration of key ecosystems.

Source: GlobAgri-WRR model.





# Yara Green Ammonia



## Enabling the hydrogen economy

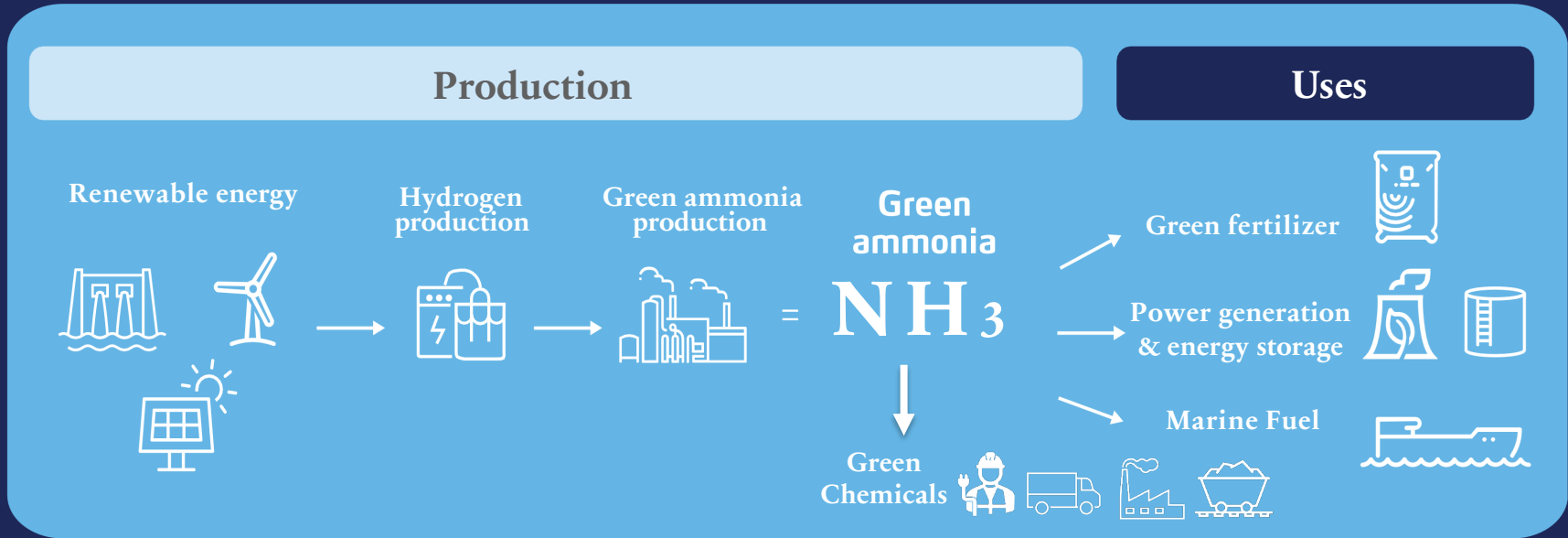
The world needs a clean energy transition.

Yara is uniquely positioned to enable the hydrogen economy in a market expected to grow by 60 percent over the next two decades



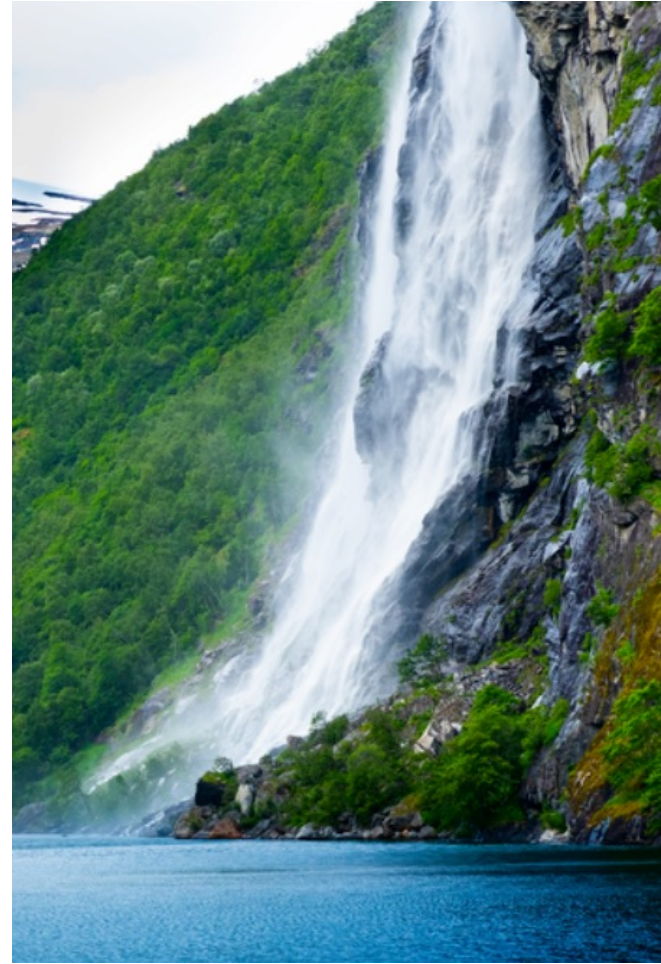
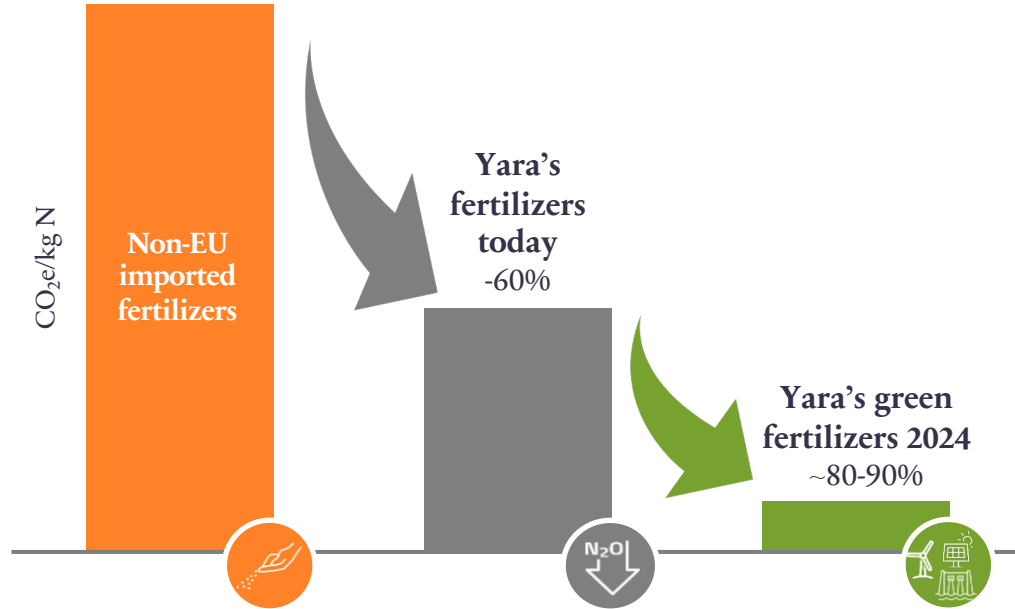
# Green ammonia within Yara

## Green ammonia production and uses



# Yara Green Fertilizers are low carbon and fossil free

Reducing the carbon footprint of Yara's nitrate-based fertilizers





# Yara's first pilot plant for green fertilizer production is ready this year!

## To be produced in Porsgrunn, Norway

- First green fertilizer production unit is ready in October 2023
- Capacity: 20.000 tons of ammonia ~ 60 000 tons of fertilizers
- Long term: whole production in Porsgrunn to be based on green ammonia – climate impact: approx. 800.000 tons less CO<sub>2</sub> E/ year



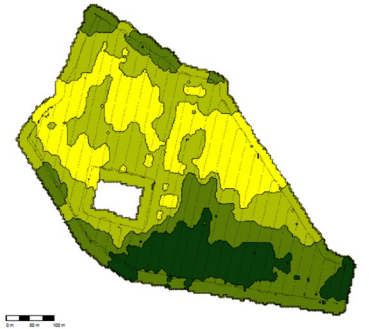
# Yara N-management devices



# Yara N-Sensor



- Device on the roof of a tractor that measures the nitrogen content of plants during fertilizer application
- Gives signal to the fertilizer spreader, which changes the fertilizer sowing rate according to the measured results in different parts of the field
- Ensures the most optimal fertilization in all parts of the field
- More precise and economical use of fertilizers = less impact on the environment





# Yara atfarm



Produce most possible crops for food per ha –  
*provide the crop with the exact amount of fertilizers needed.*  
*No more. No less.*



- Plants' exact needs for fertiliser are calculated based on satellite images of the field
- Fertilizers are applied precisely in every spot of the field according to the needs
- *More crops / areas – with less climate impact*

# Yara N-Tester BT

- Handheld device that measures the nitrogen content (chlorophyll) in plant leaves
- Connected via Bluetooth to the smartphone or tablet
- Device is compatible with Atfarm application
- All data is stored electronically & is field and variety-based
- History of fields measurements are preserved and can be easily found and compared





# Yara Megalab

- Yara software program that works in cooperation with a powerful computer and a modern laboratory located in England
- Over 1,000 soil and leaf analyzes from Estonia are sent every year



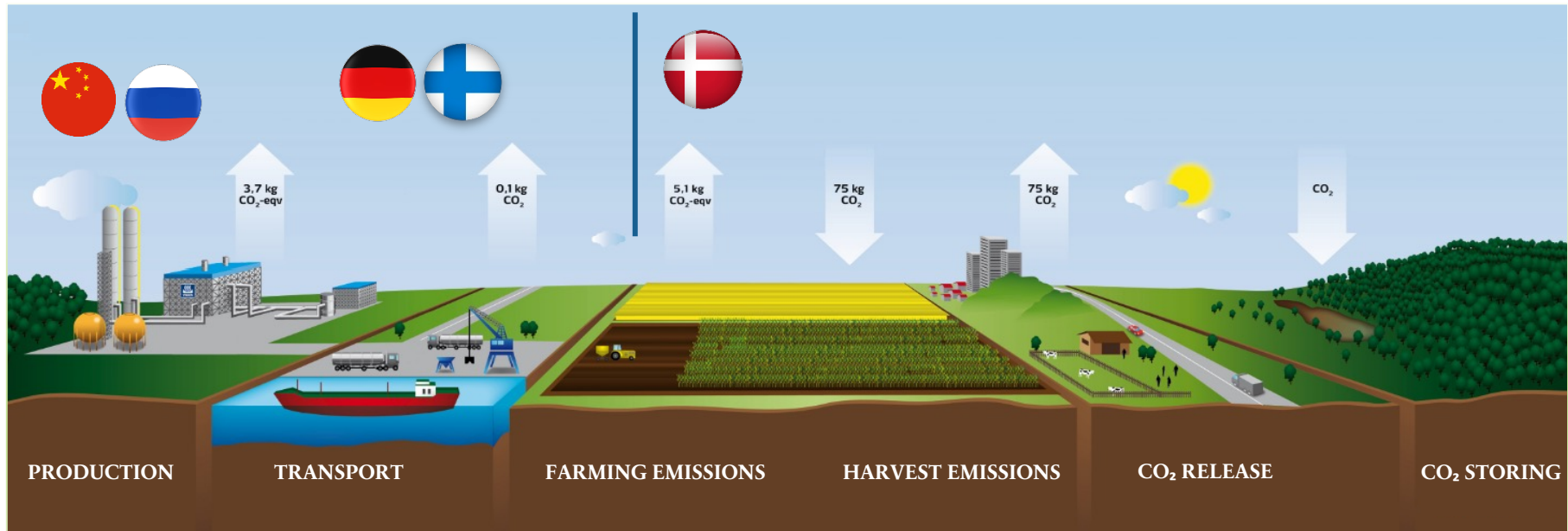
# From where should incentives to use green fertilizers in food production arise?

- **National level** – up to 70% reduction ambition
- **Businesses** – climate inventory and -messaging
- **Consumers** – climate labels and willingness to pay



# National 70% targets

- Biological processes in farming is hard to measure exactly and put into "boxes"
- Different countries working at very different levels/targets
- National targets don't take climate friendly fertilizers into account

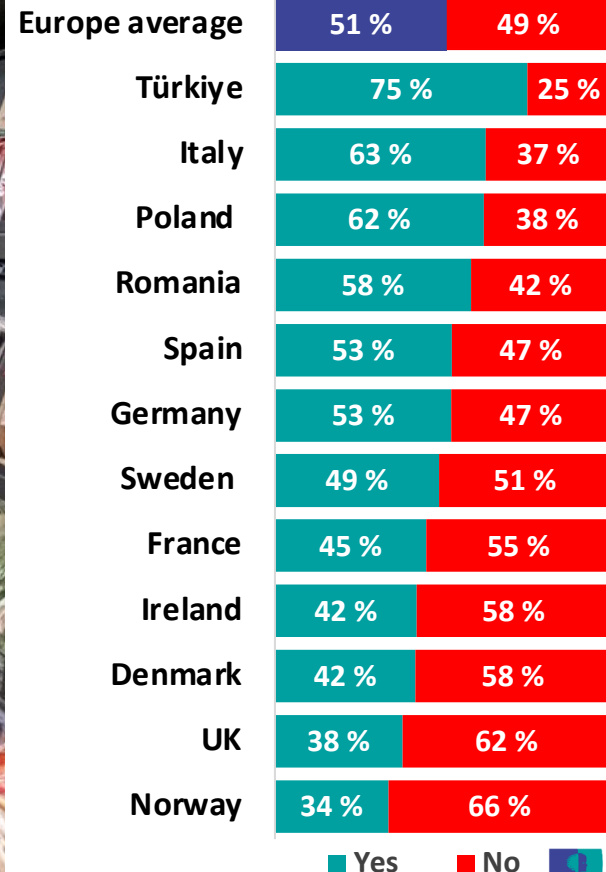




# Incentives for consumers

EU consumers survey  
in 2020:  
Would you pay extra for  
fossil free food  
products?

- Climate labelling in future...?
- Willingness to pay...?



Base: 12000 persons (~1000 per market)



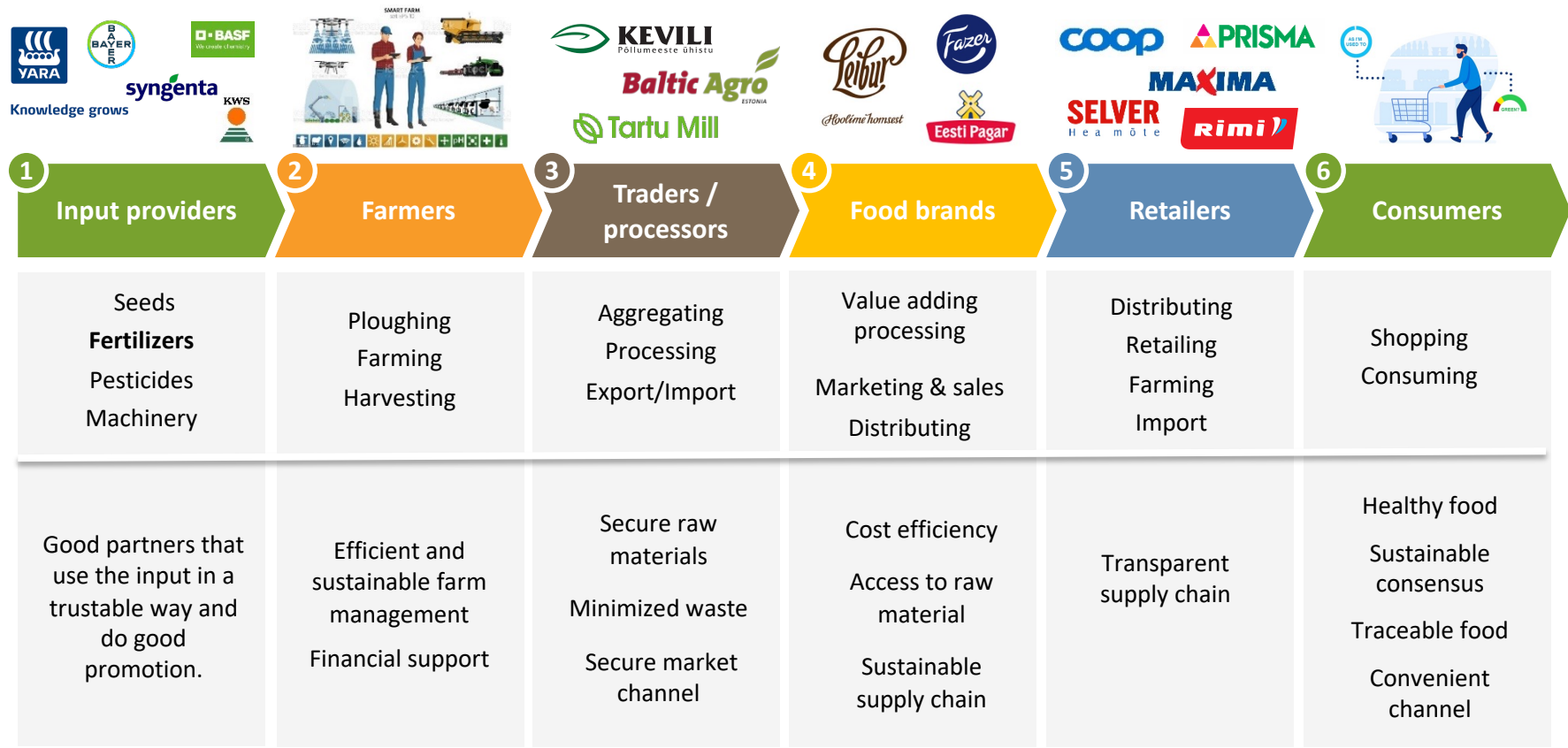
# Yara's projects regarding Green fertilizers & Food Chain partners (Denmark)

Crop	Food Chain segments	Volume K ton total market (ref product YaraBela Axan)	Food Chain partner	FC partner market share
Barley/ Rye/ Feed wheat	Meat	353	Danish Crown	60%
Grassland/ Barley/ Silage	Dairy	179	Arla	80%
Malting Barley	Malting/ breweries	61	Viking malt	50%
Starch potatoes	Starch	29	KMC	60%
Sugar beets	Sugar	12	Nordzucker	100%
Rye/ Milling wheat/ Oat	Food cereals	21	Valsemøllen	35%
Food Potatoes	Food potatoes	3,5	Flensted	20%

Denmark	Flirting stage	Dating	Proposal	Engaged	Married
					



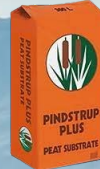
# Possible Estonian stakeholders in the food value chain & their roles



# Who could be Peat sector stakeholders?



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Role

Peat  
Fertilizers  
Machinery

Peat harvesting  
Production =  
value adding processing

Branding  
Marketing  
Sales

Import  
Distributing  
Retailing

Shopping  
Growing  
Consuming









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Thank you. Questions?

Growing a Nature-  
Positive Food Future