

# GRAIN AND OILSEED CHAINS OF POLAND AND FINLAND



Csaba Jansik  
MTT Agrifood Research  
Finland



# The grain and oilseed supply chain



Agricultural  
input producers

Grain & oilseed  
farms

Food  
processors

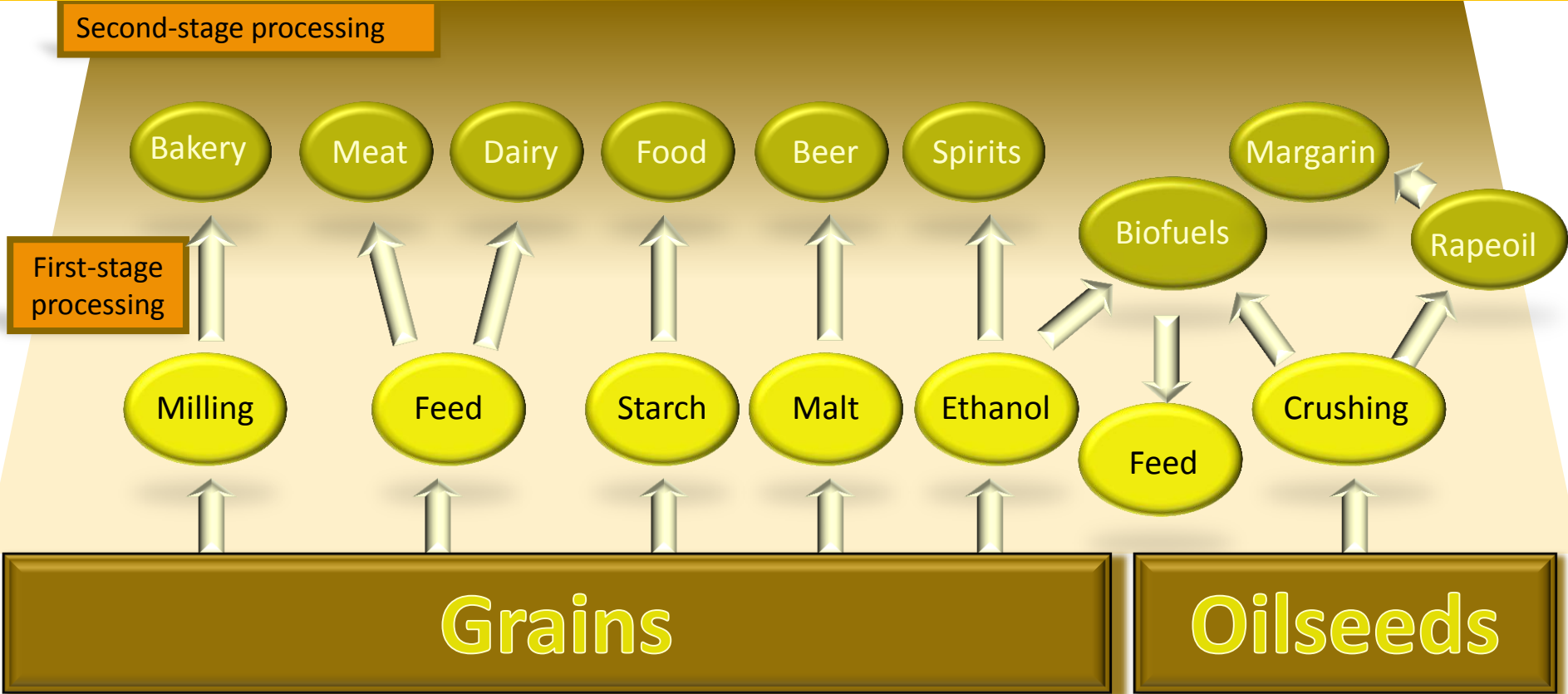
Food wholesale  
and retail trading

Consumers

segments of the chain

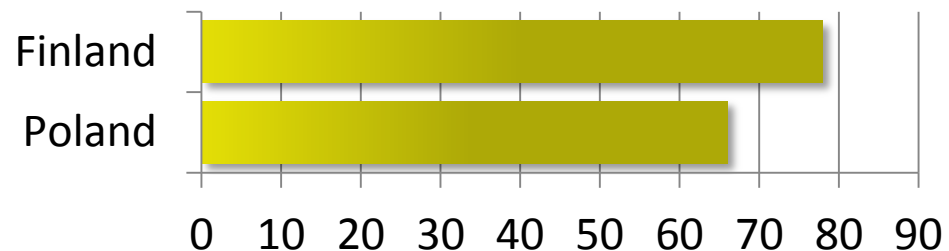
- ▶ Segments in the chain interact with each other, usually with the neighbouring levels, via various forms of transactions – but each segment is a separate market
- ▶ From “field to fork” – a successful chain is organised and operating smoothly
- ▶ The chain is as strong as its weakest link e.g. economics, quality assurance, hygienics, food safety

# How important are grains and oilseeds?



▶ The majority of food processing industries use directly or indirectly grains and oilseeds, they are crucial raw materials.

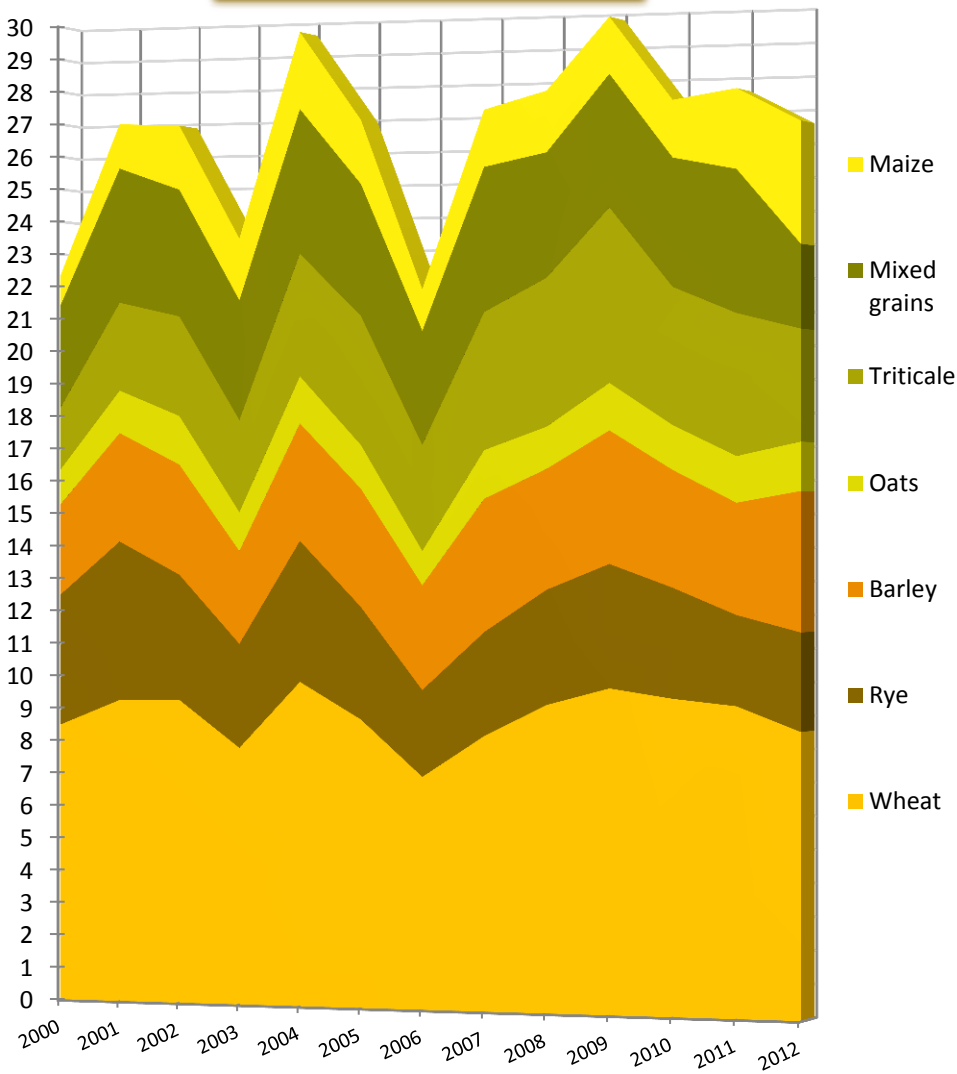
Percentage in the shares of the food industry sales revenues



# Grain production

## Poland

million t



## Poland

Barley, maize

Rye, triticale, mixed grains

Deficit: durum wheat, maize

Export: wheat, rye

## Finland

Wheat

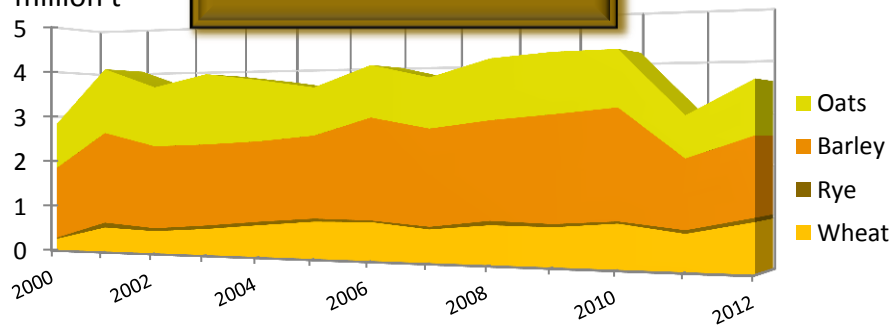
Barley, rye

Deficit: rye

Export: oats, wheat, malt barley

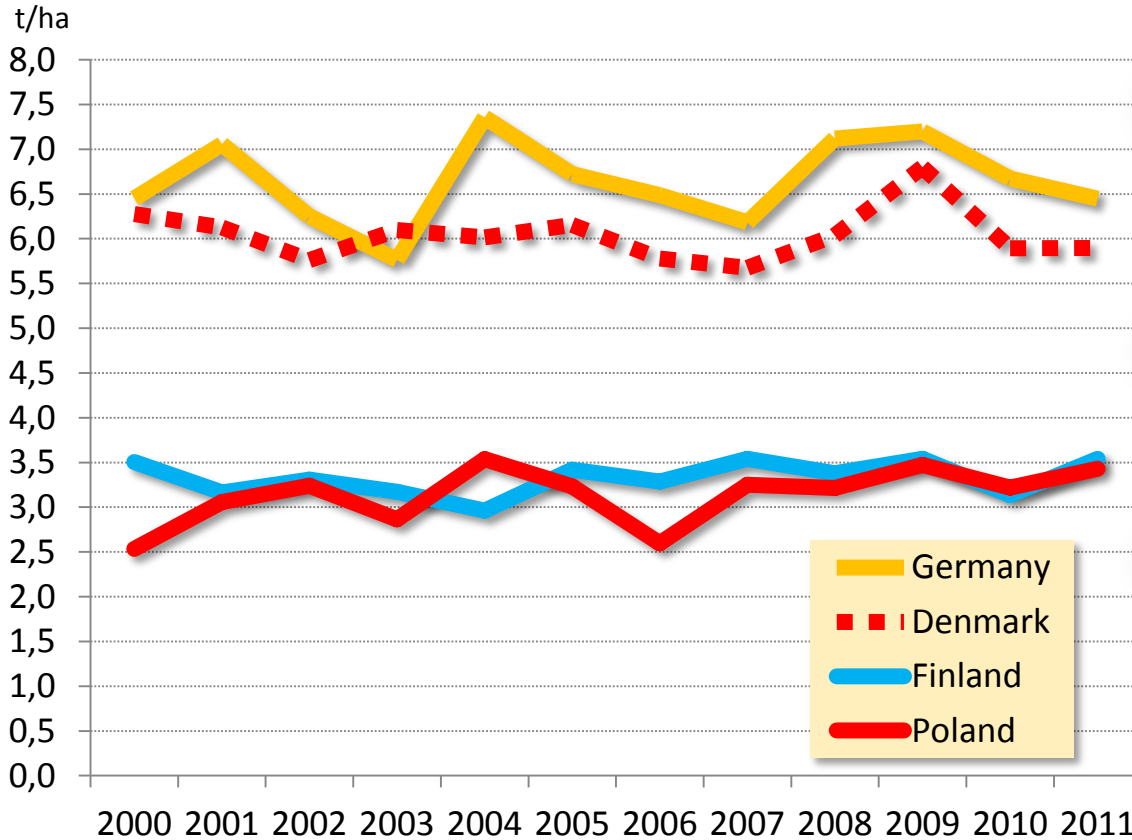
## Finland

million t



# Grain production

## Cereal average yield levels



Finland and Poland similar levels – lagging behind the neighbours



Reasons for Poland: lower use of agricultural inputs



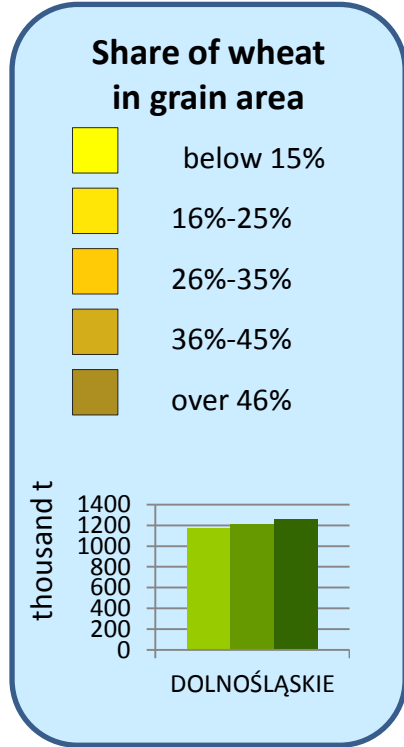
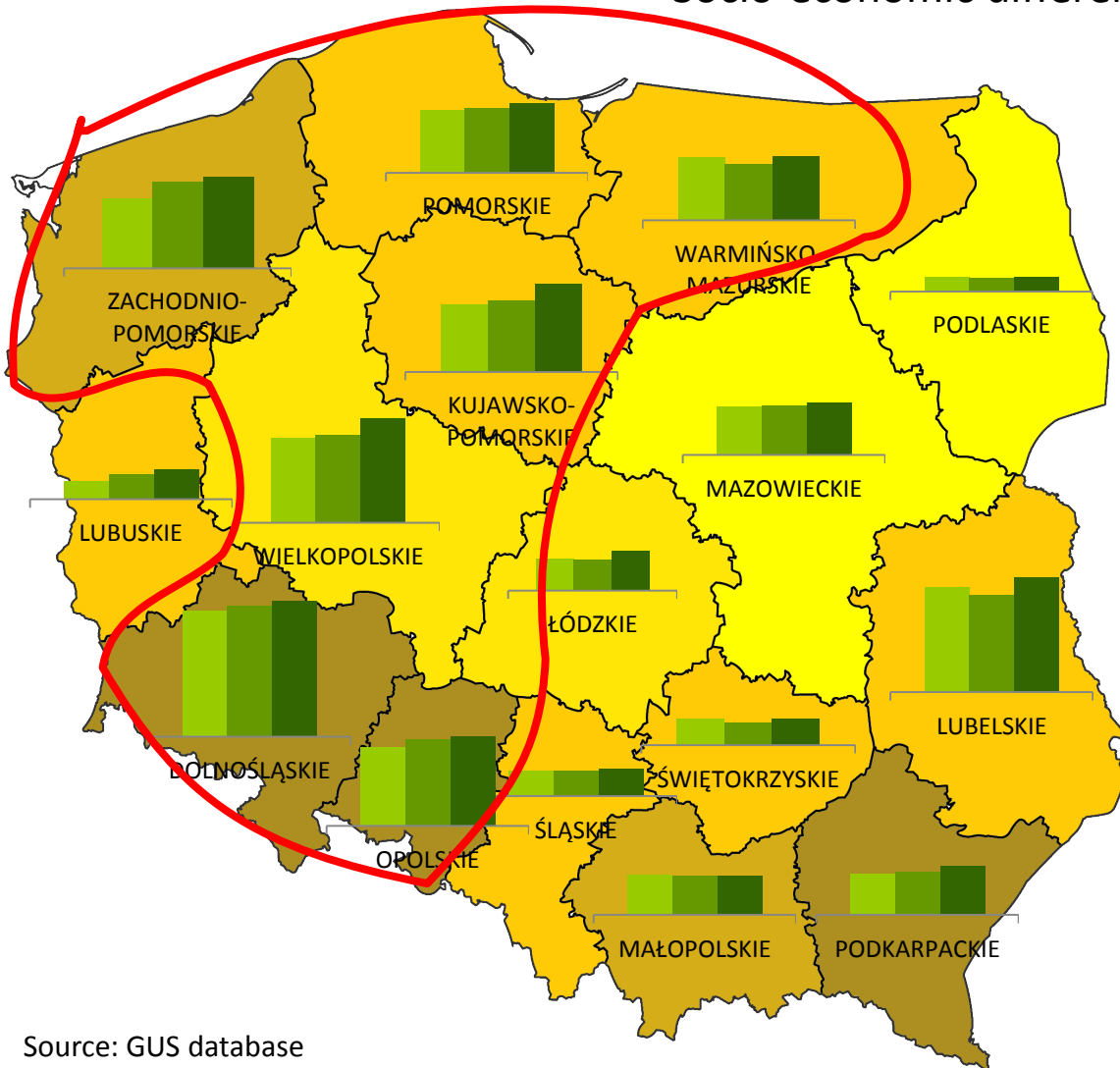
Reasons for Finland: climate and spring cereal production



# Grain production – regional distribution

Poland

Reasons: Climate, soil  
History of farm structure  
Socio-economic differences



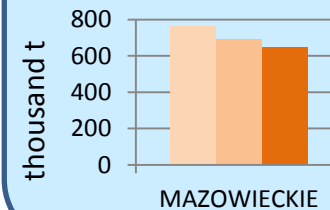
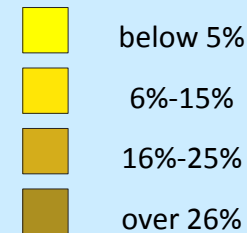
# Grain production – regional distribution

Poland

Reasons: Climate, soil  
History of farm structure  
Socio-economic differences



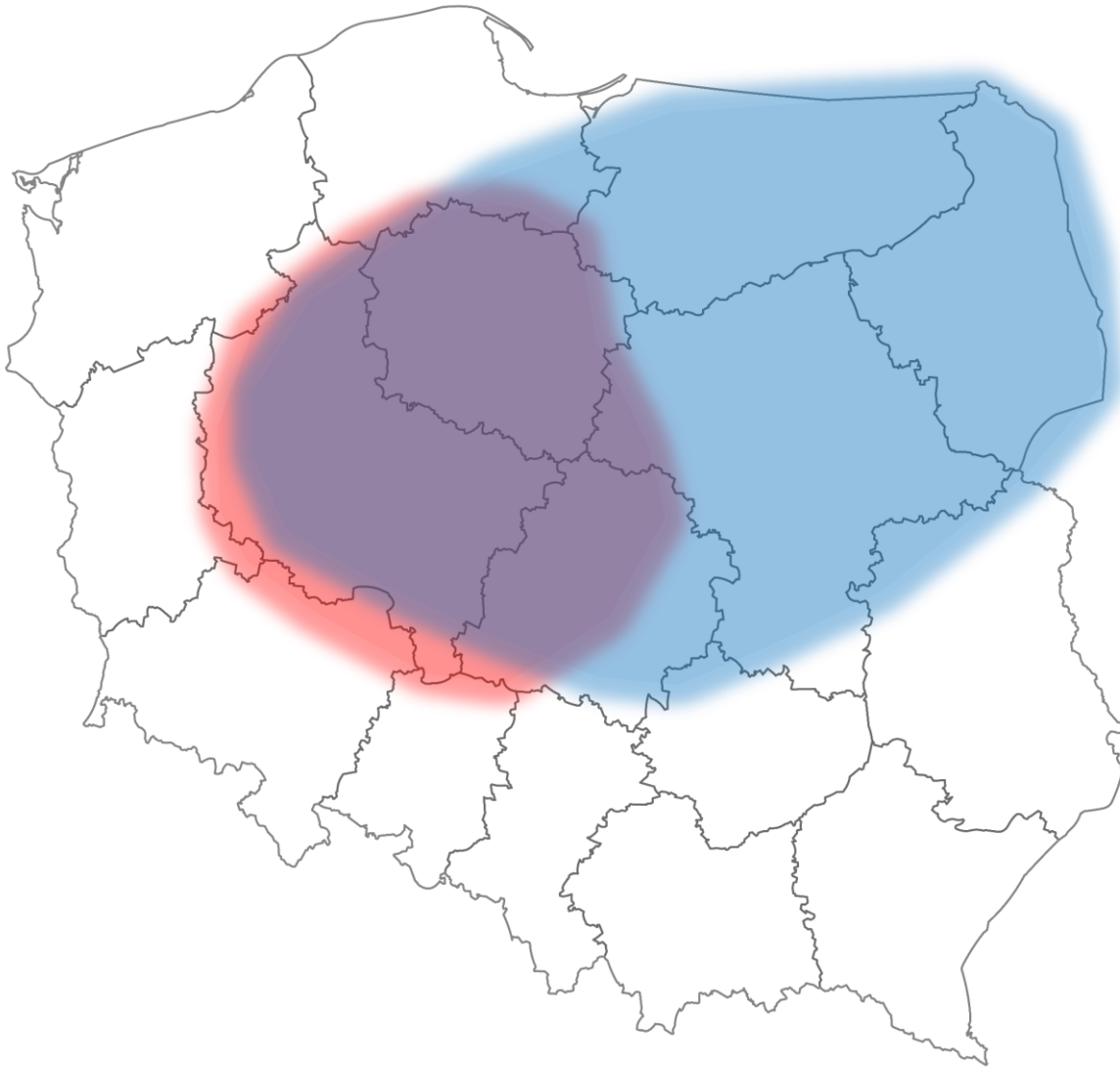
Share of rye in grain area



# Grain production – regional distribution

Poland

Similarly to grain production, livestock production is also concentrated into specific regions of the country.



**Pig farms**



**Dairy farms**





# Grain production – regional distribution

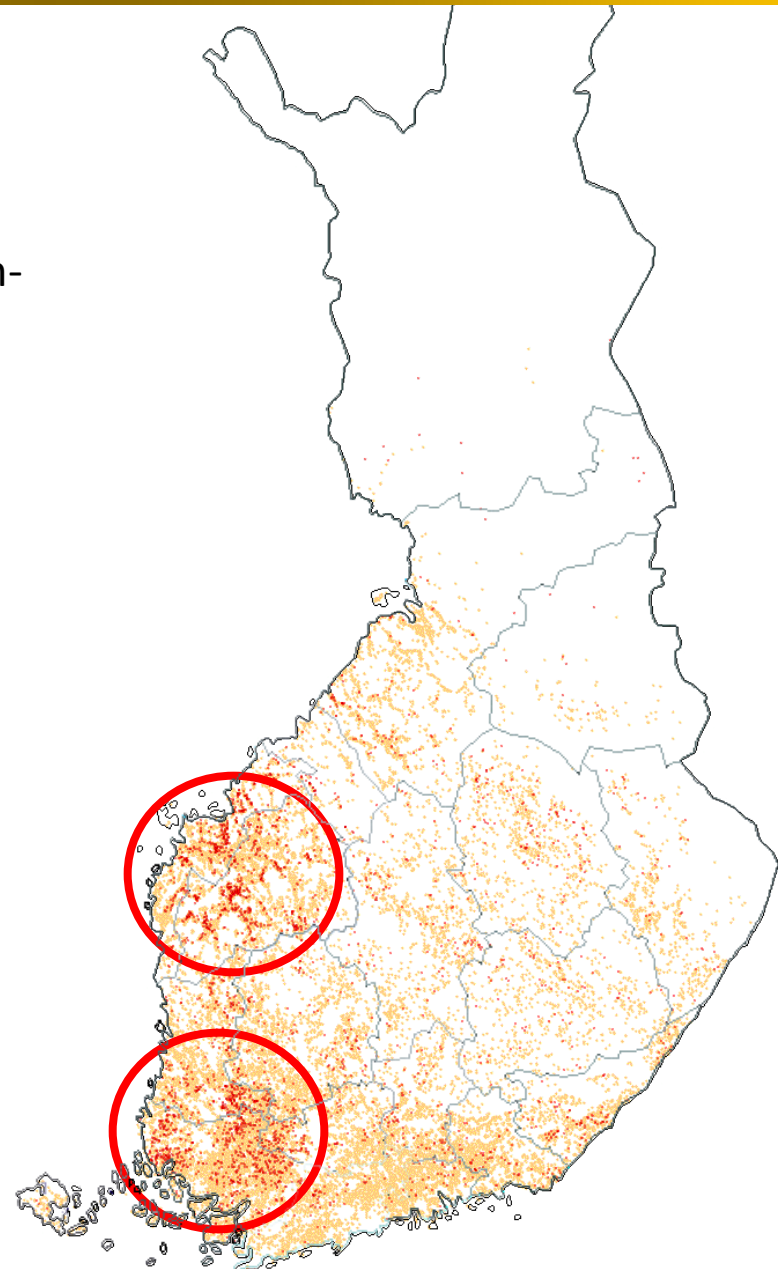
## Finland

Reasons: climate, soil distances

- ▶ Grain farms are concentrated into South-West Finland and by the coast.
- ▶ Pig and poultry production is concentrated into two areas.

One orange dot ● = one grain farm

One red dot ● = one pig farm



# Grain production – overview

## Poland

mixed farms

- ▶ integrated into Central European market
- ▶ actors of the chain trade with other segments in other countries
- ▶ loose interdependence within the chain segments
- ▶ role of production contracts falling

## Finland

specialised farms  
Quitting livestock farms

- ▶ Isolated by the sea
- ▶ trade only through trading companies
- ▶ strong interdependence within the chain segments

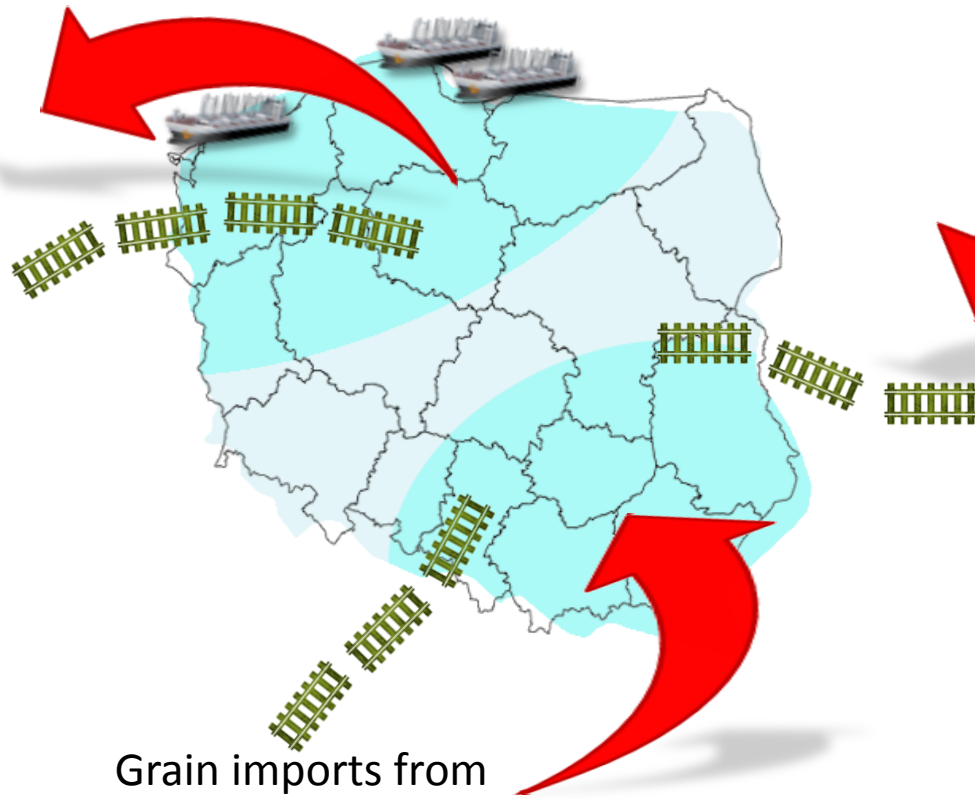


VYR: consortium of grain chain participants

# Mainstreams of grain trade

Grain exports to Germany and elsewhere in the world.

Grain trade mainly through the sea.



Grain imports from Czech R., Hungary and Slovakia.

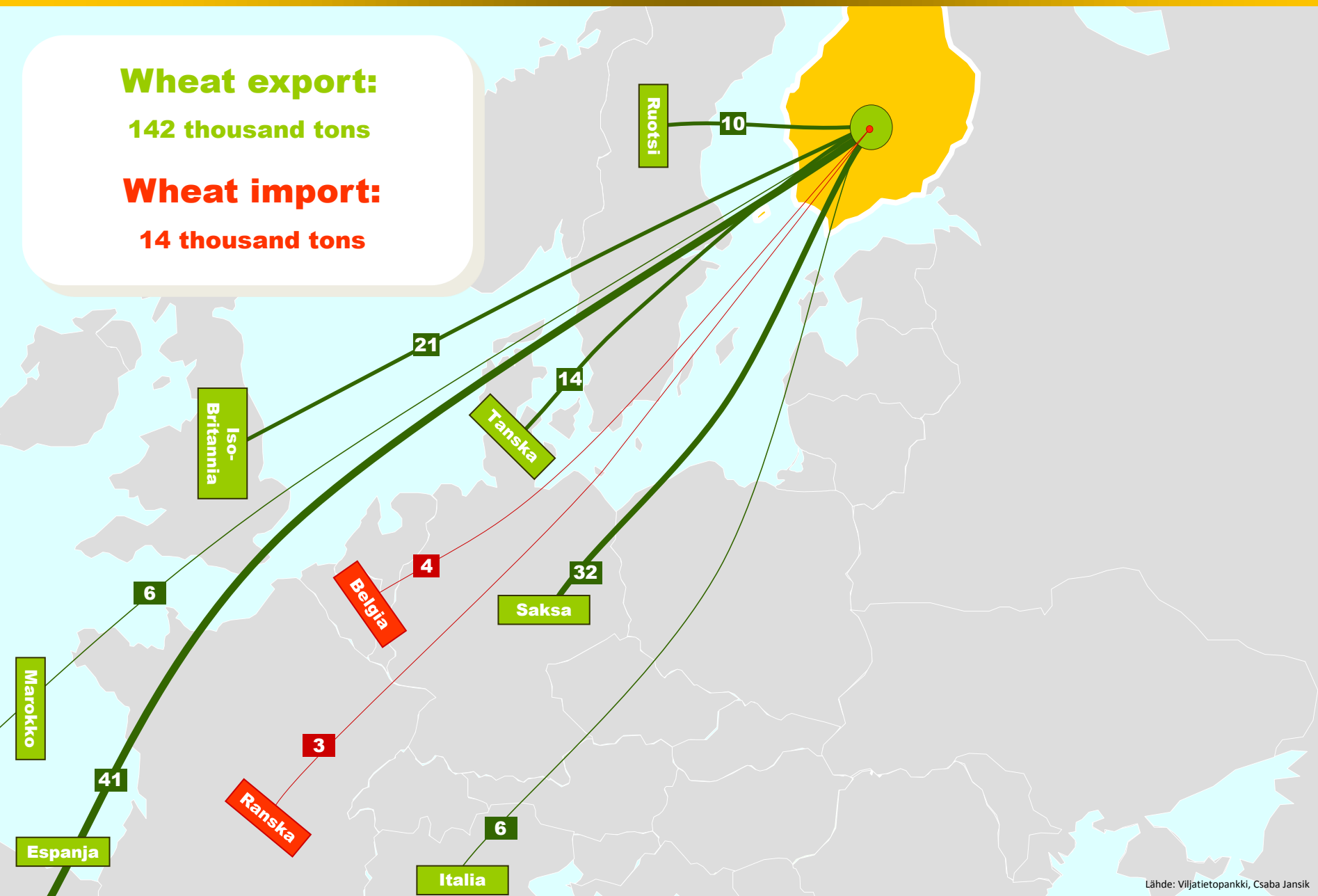
# Mainstreams of grain trade - Wheat

**Wheat export:**

142 thousand tons

**Wheat import:**

14 thousand tons



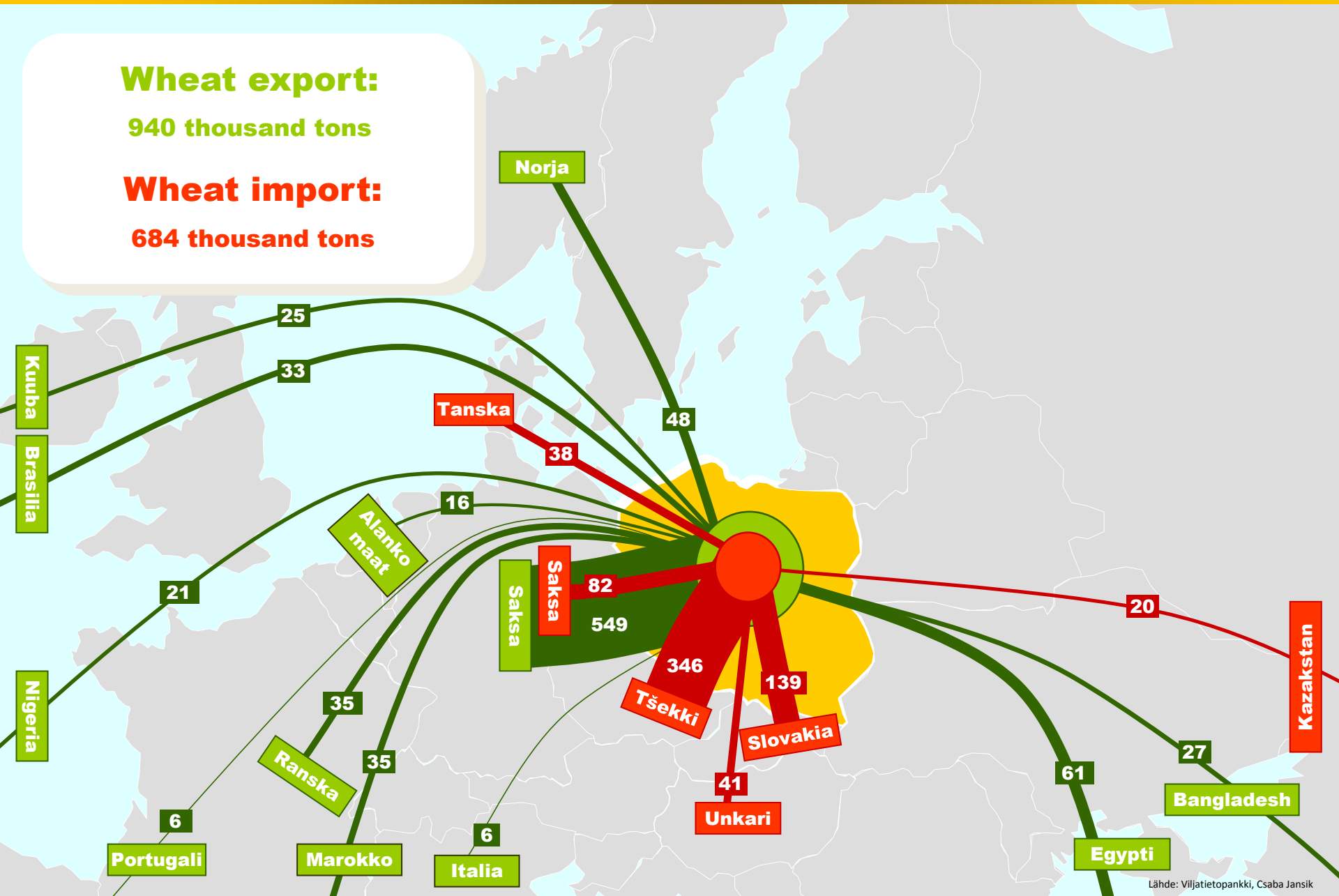
# Mainstreams of grain trade - Wheat

**Wheat export:**

940 thousand tons

**Wheat import:**

684 thousand tons



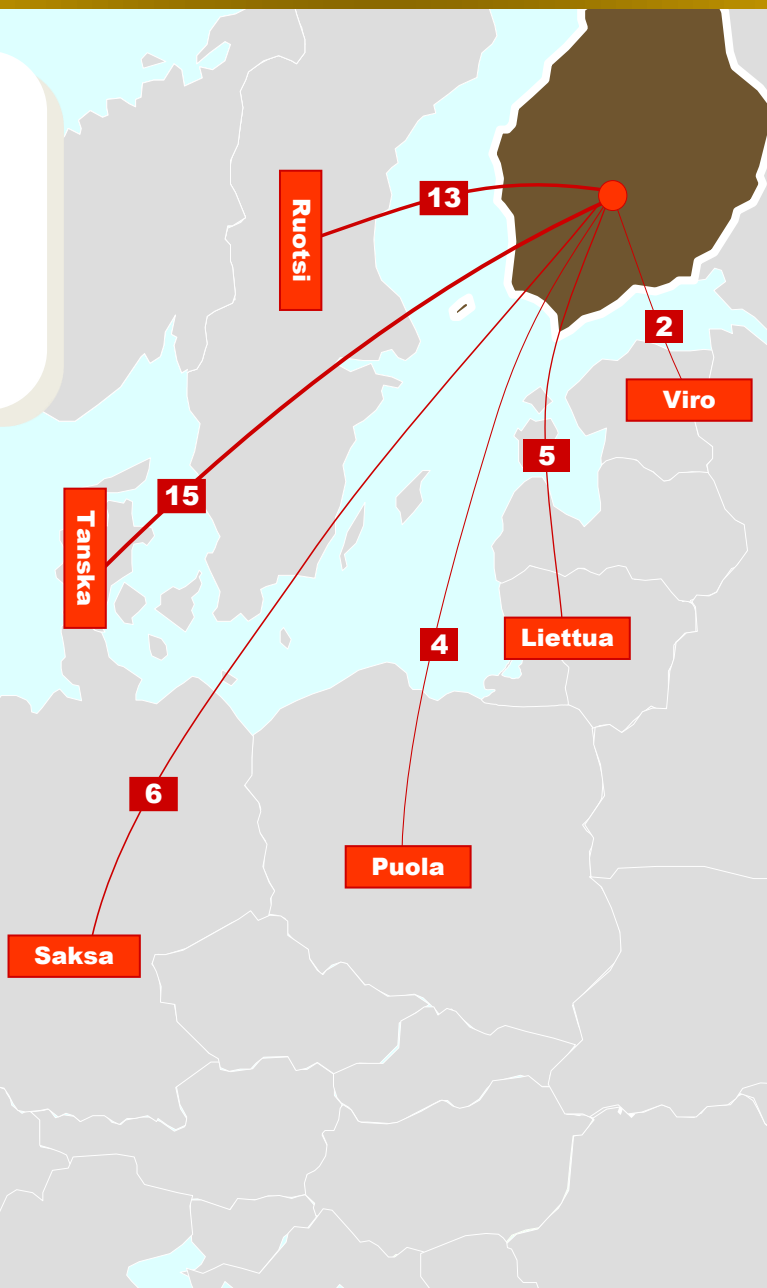
# Mainstreams of grain trade - Rye

**Rye export:**

**0,01 thousand tons**

**Rye import:**

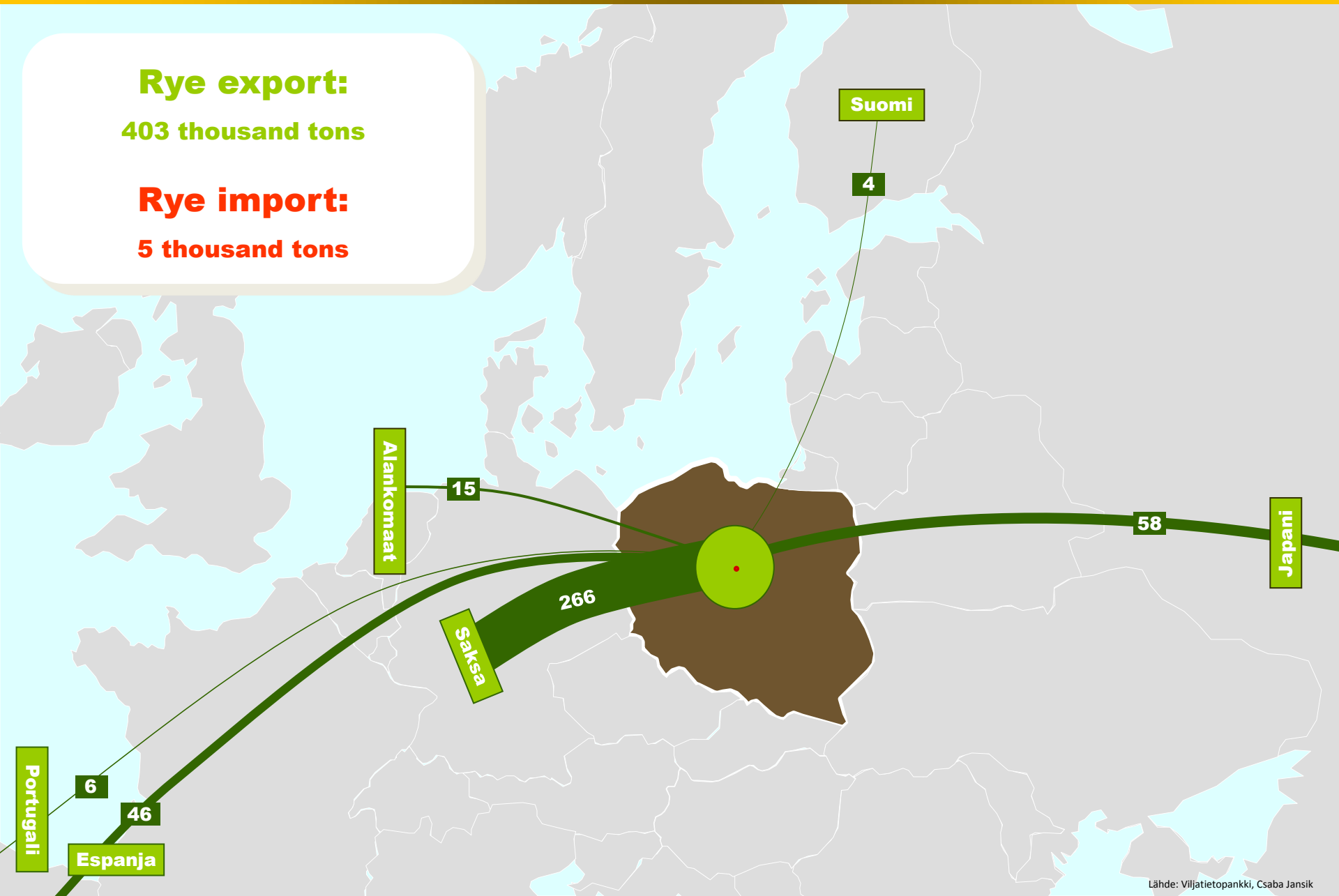
**44 thousand tons**



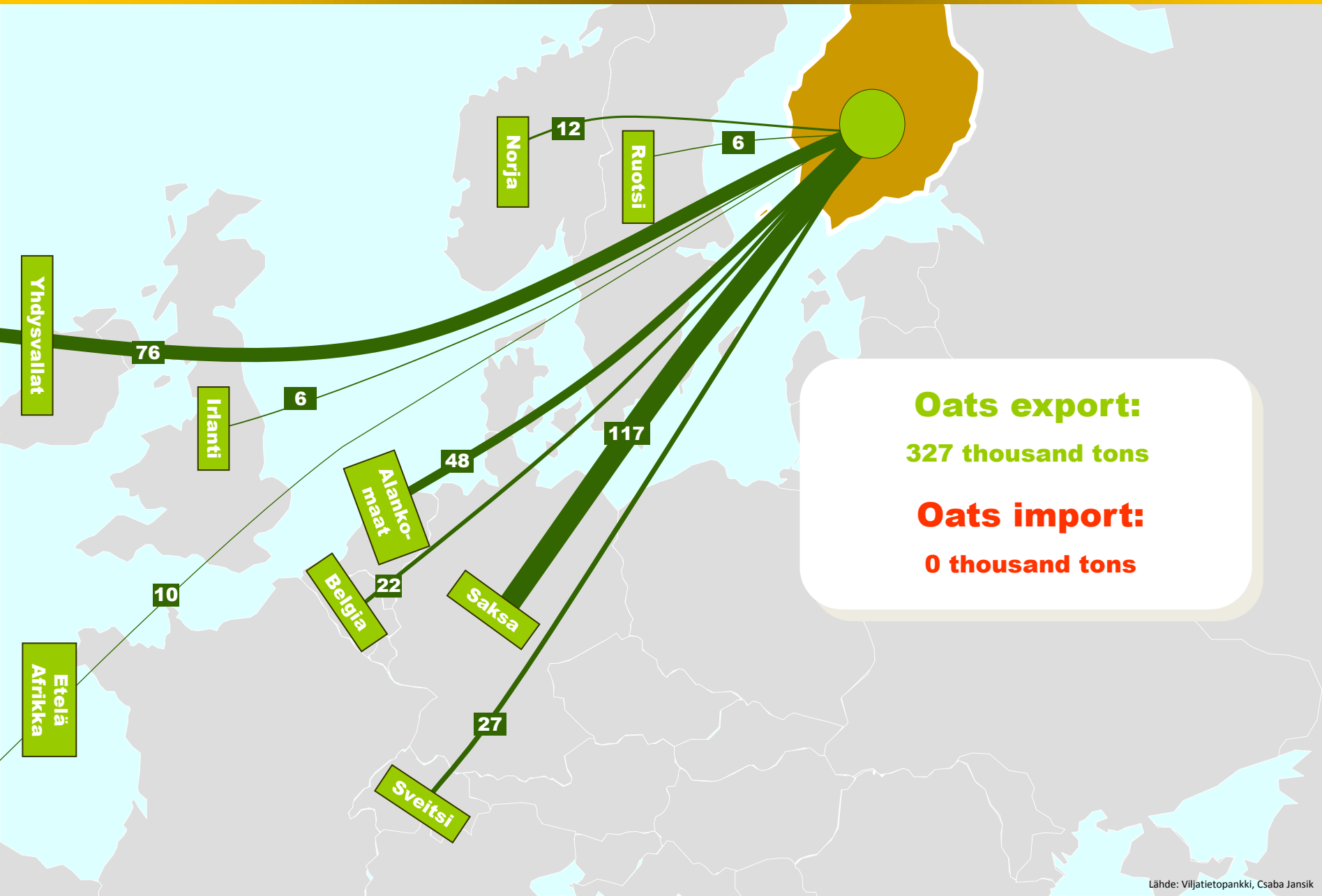
# Mainstreams of grain trade - Rye

**Rye export:**  
403 thousand tons

**Rye import:**  
5 thousand tons



# Mainstreams of grain trade - Oats





# Mainstreams of grain trade - Oats

**Oats export:**

**45 thousand tons**

**Oats import:**

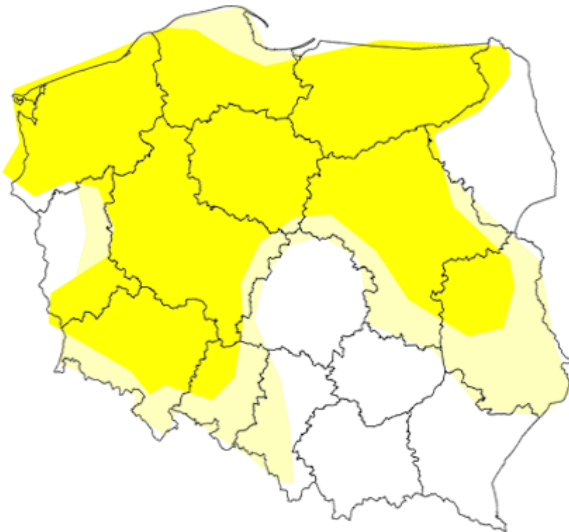
**4 thousand tons**



# Rapeseed production

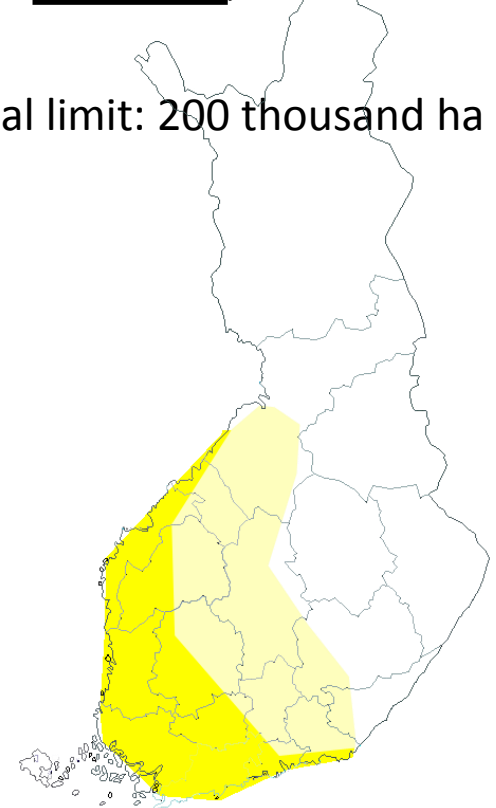
## Poland

- ▶ Regional distribution/suitability for rapeseed production
- ▶ Reasons: climate, soil, farm structure, farm know-how
- ▶ Biological limit: 1,2 million ha



## Finland

- ▶ Regional distribution/suitability for rapeseed production
- ▶ Reasons: **climate**, farm know-how
- ▶ Biological limit: 200 thousand ha

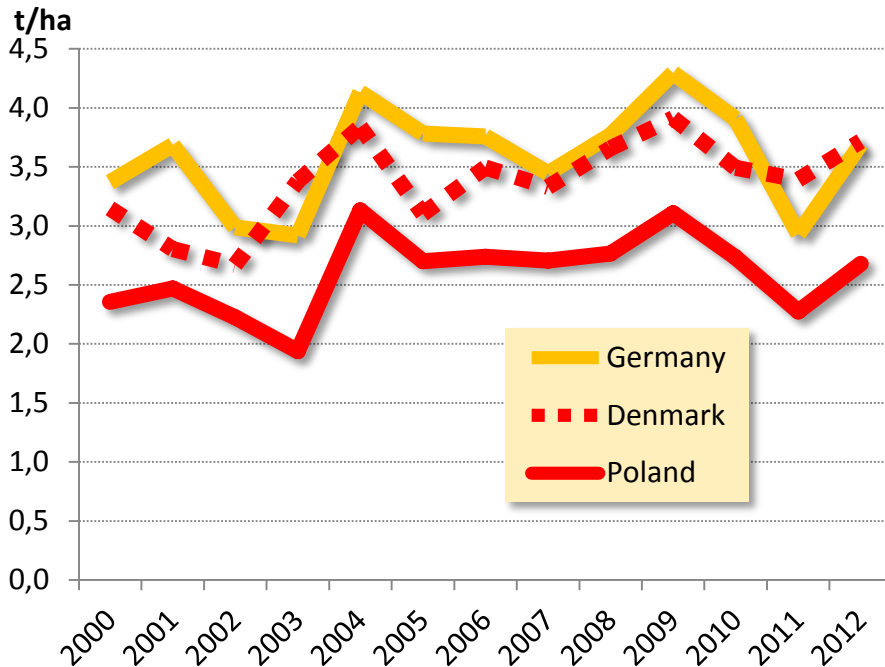


# Rapeseed production

## Poland

- ▶ Production of winter rapeseed
- ▶ Polish yield levels are closer to those in the neighboring countries than in the case of grains

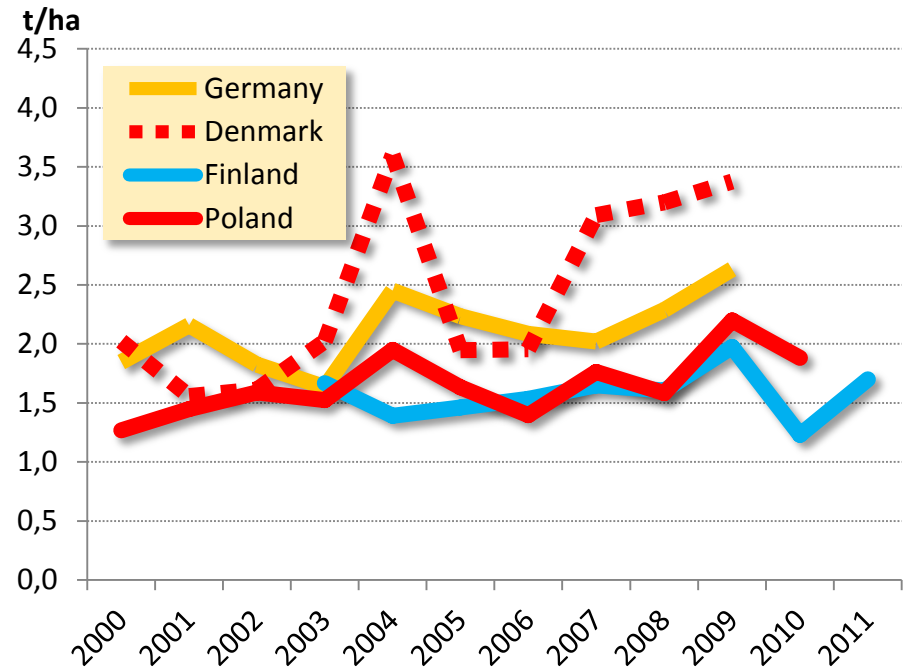
### Winter rapeseed average yield levels



## Finland

- ▶ Production of spring rapeseed
- ▶ Frost danger for winter rape is very big in Finland – saying among the Finnish farmers

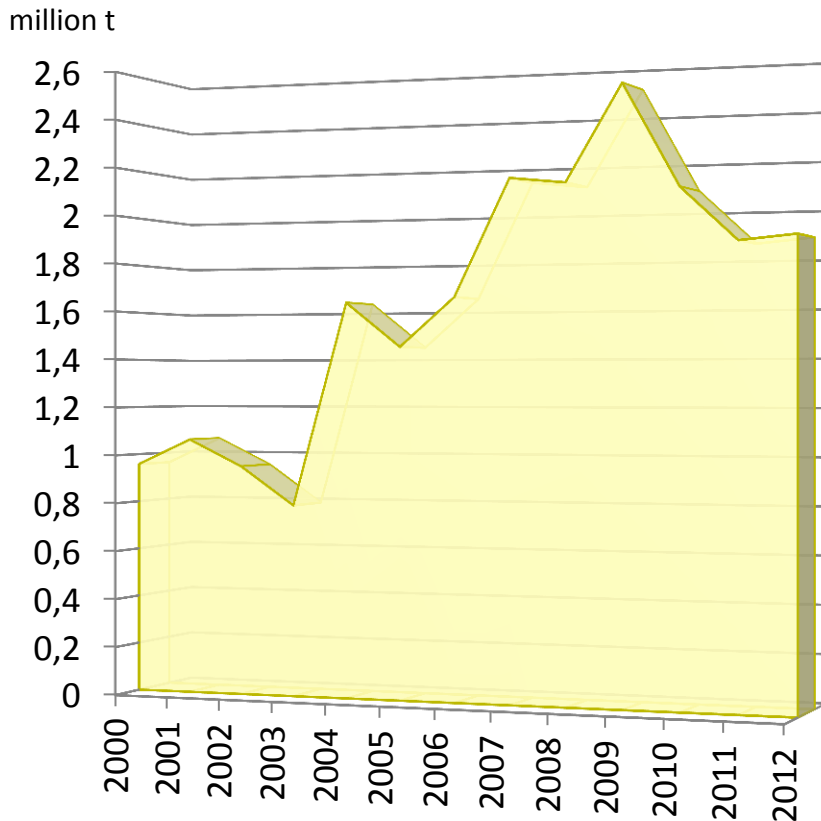
### Spring rapeseed average yield levels



# Rapeseed production

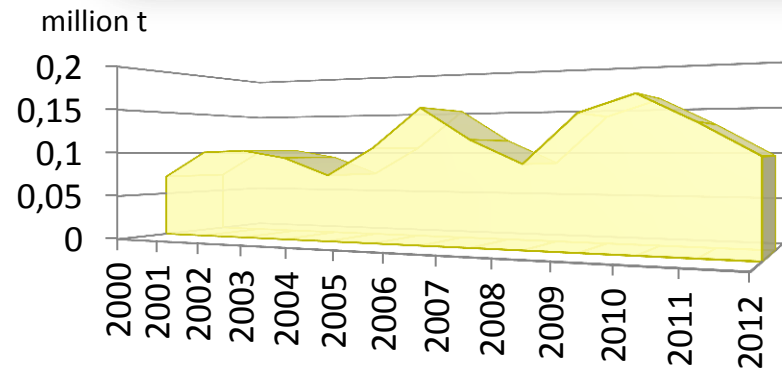
## Poland

- ▶ Self sufficiency rate 90-110%
- ▶ Rapid growth in the 2000s, peak in 2009



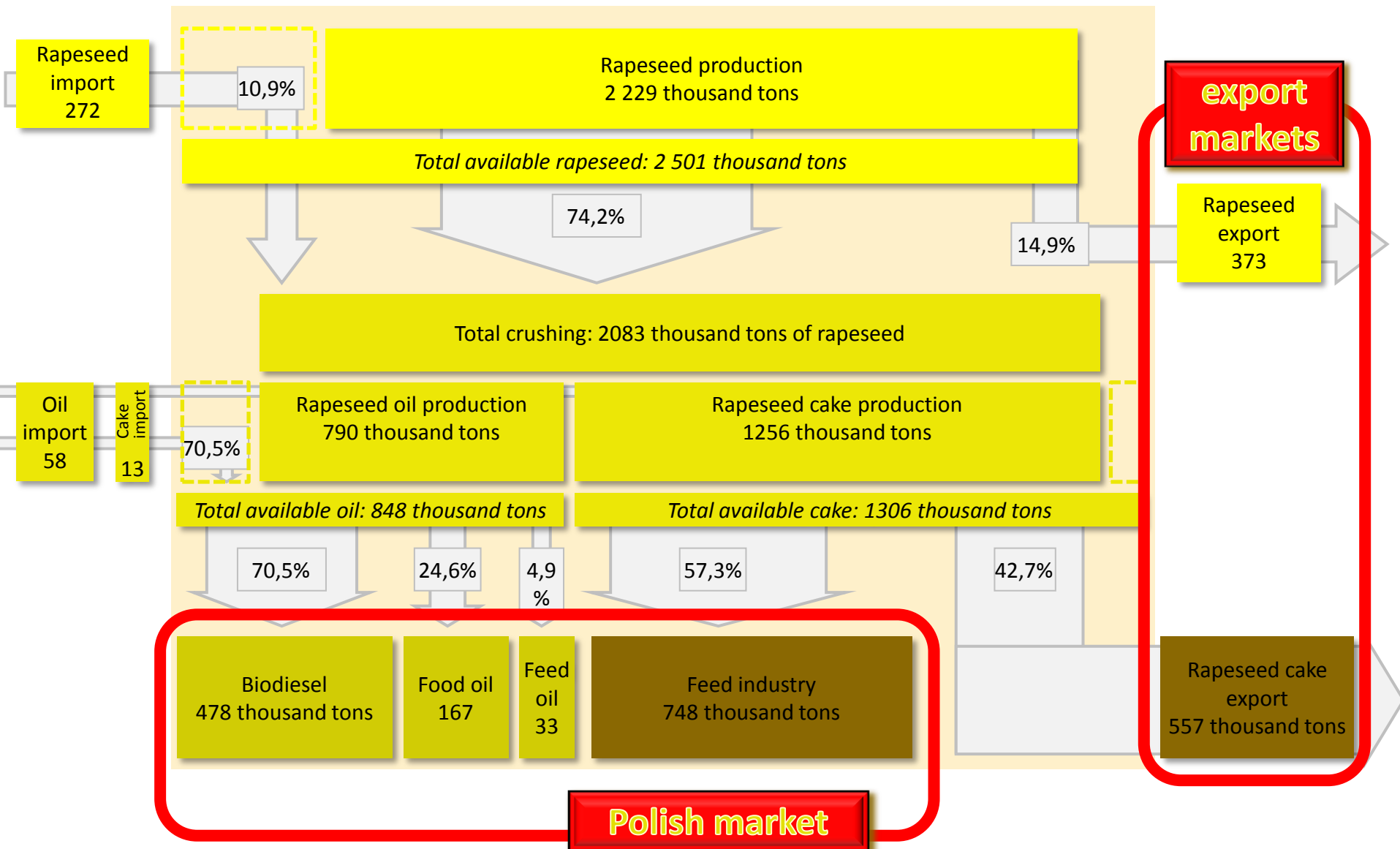
## Finland

- ▶ Self sufficiency rate 30-60%
- ▶ Increase in the 2000s – peak in 2010



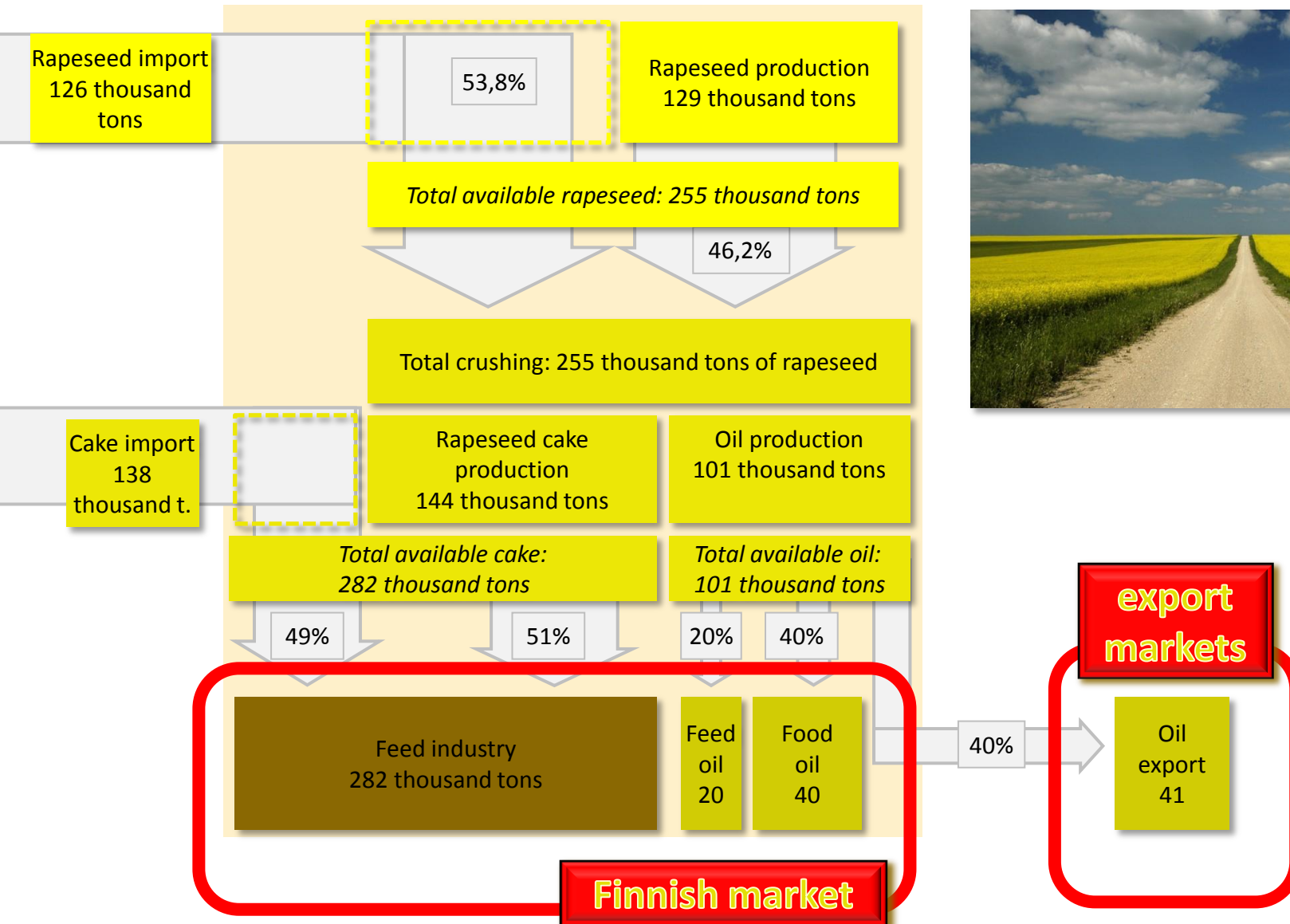
# Rapeseed supply chain

## Flowchart of Polish rapeseed supply chain in the 2011/12 crop season



# Rapeseed supply chain

## Flowchart of Finnish rapeseed supply chain in 2011



# Rapeseed supply chain

## Polish market

Biodiesel  
478 thousand tons

Food oil  
167

Feed  
oil  
33

Rapeseed cake  
748 thousand tons

+ 40 thousand tons of own protein crops:  
Peas (10), beans (8), lupine (22)  
+ 142 thousand tons other protein feed from own prod.



Imported  
sunflower cake  
642 thousand tons

Imported  
soya cake  
1888 thousand tons

## Finnish market

Rapeseed cake  
282 thousand tons

Feed  
oil  
20

Food  
oil  
40

+ 32 thousand tons of  
own protein crops: peas  
(12), beans (20)



Imported  
soya cake  
180 thousand tons

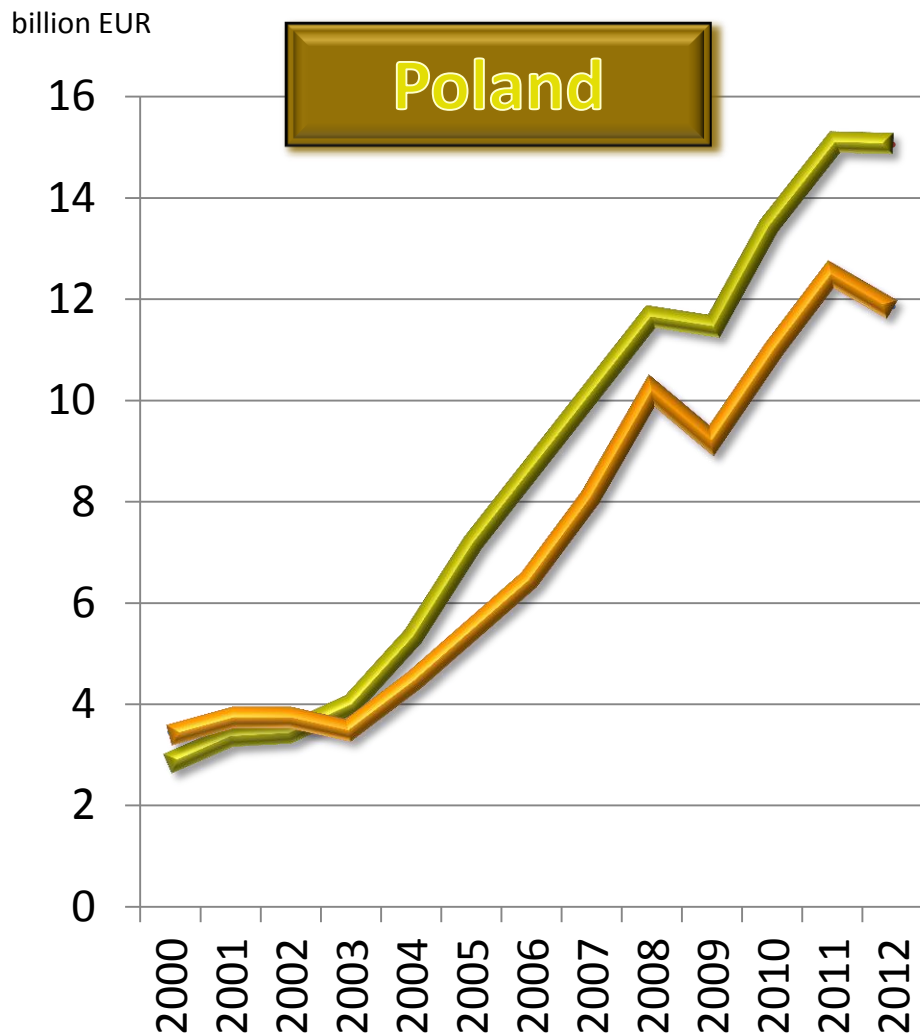
- ▶ Major driver of growth: biodiesel
- ▶ Vegetable oil consumption is stable
- ▶ “Cake surplus – oil shortage”
- ▶ **Protein feed self sufficiency: 27%**

- ▶ Major driver of growth: cake
- ▶ Vegetable oil consumption is stable
- ▶ “Oil surplus – cake shortage”
- ▶ **Protein feed self sufficiency: 40%**

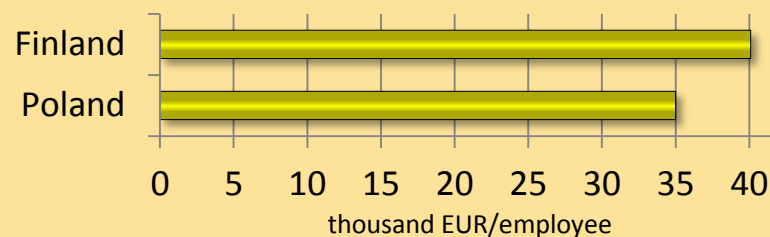
# Agrifood trade

Remember the size difference between the two countries.

In any relative indicator the 2012 export performance is not so far from each other.



## Agrifood exports/food industry worker





# Agrifood exports

## Poland

Largely competitive  
Positive trade balance  
Spectacular growth in 10 years

## Finland

Competitive  
Negative trade balance - expanding  
Sluggish over the past decade

### Reasons:

- ▶ Excellent location in the heart of Europe – logistic advantages
- ▶ Expanding huge domestic market (determines company size and growth opportunities)
- ▶ Cost advantages: labor, raw material, energy

- ▶ Peripheral location – logistic disadvantages
- ▶ Saturated small domestic market (determines company size and growth opportunities)
- ▶ High costs



# Major questions in the chain



## Who owns the chain?

- ▶ Farmers, domestic private investors, banks, pension funds, insurance funds, or foreign capital (professional or financial)?
- ▶ What is the interest of the owners? Further development? Modernisation? Geographical expansion? Market consolidation? Dividends?

## Who integrates the chain?

Who takes the initiative to make the chain operating smoother?

- ▶ Vertical coordination and integration
- ▶ Organizational issues, information flow, traceability, quality and hygienic control

# Major questions in the chain



## ▶ Who controls the chain?

Which segment has the biggest negotiating power? Which is the strongest to enforce its will on the others?

- ▶ Market structures – concentration
- ▶ Distribution of income within the chain – who adds value within the chain?
- ▶ Foreign trade used as the ace card

## ▶ Who bears risk within the chain?

- ▶ In the case of commodities? Buyers? Sellers? Traders? Is there any risk management? Hedging? Insurance?
- ▶ How sudden price changes flow through the chain?
- ▶ Who bears the risk of daily grocery sales?

Thank you!