What if meat consumption would decrease more than expected in the high-income countries?

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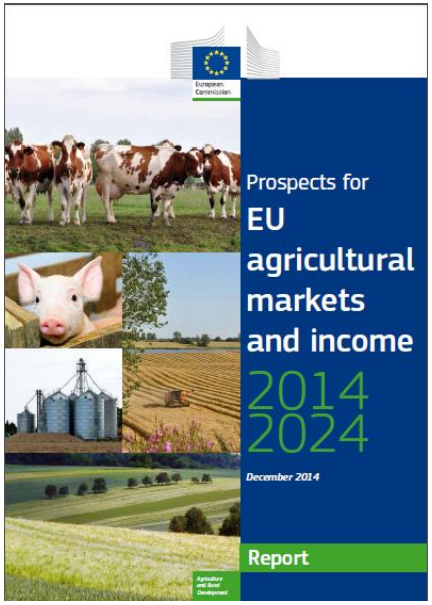
JRC - IPTS

Innovation, productivity and growth: towards sustainable agri-food production

4th Conference of the AIEAA,
Ancona, June 11-12, 2015

European prospects for meat

(JRC-IPTS + DG AGRI + 100+ experts)



- EU per capita **meat** consumption levelling off
- Rising per capita **meat** consumption in low-income countries

➔ An increase in EU meat production + exports

At the same time:

- Reduction of per capita meat consumption in **specific sub-groups**
- Spreading "Low meat consumption" messages in medias, NGO's, political arena
- **Official nutrition recommendations** (Sweden, United Kingdom, the Netherlands and the USA)

➔ **2 alternative scenarios exploring a "lower meat consumption trend"**

"**What if…" approach** to assess **impacts** on agricultural commodity markets developments at global and European level

Aglink-Cosimo: the model used for the simulations

- Recursive-dynamic, partial equilibrium, Supply-Demand model of world agriculture
- OECD's Aglink + FAO's Cosimo sub-modules

Simulates the production, consumption, price and trade of

- 93 agricultural commodities
- 44 individual countries and 12 regions
- 40 world market clearing prices
- 36000 equations, most of them "double-log": $Log(Y)=\xi \cdot \log(X)+\beta_0+\log(R)$

Meat consumption modelled as the total food use (FO) of meat products

$$Log\left(FO_{c,r,t}\right) = c + \sum^{c} \xi_{FO_c,CP_c} \cdot Log\left(\frac{CP_{c,r,t}}{CPI_{r,t}}\right) + \xi_{FO_c,DGPI} \cdot Log\left(\frac{GDPI_{r,t}}{POP_{r,t}}\right) + Log\left(POP_{r,t}\right) + trend + Log\left(R_{CI}\right.$$

CP: consumer prices
CPI: consumer price index
GDP: gross domestic product
POP: population

c: commodity
r: region
t: time

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Assumptions of the alternative scenarios
per capita meat consumption

Scenario 1: Lower meat consumption **with no** protein compensation

Scenario 2: Lower meat consumption **with** partial protein compensation

SC 1 and SC 2:

- - 11% relative to the baseline by 2024 in North America, Europe and Oceania
- - 5% relative to the baseline by 2024 in Brazil, Mexico and Argentina

SC 2: Partial protein compensation with

- Cereals (+5%)
- Dairy products (+5%)
- Oilseeds and pulses (+2%)
- Eggs (+5%)

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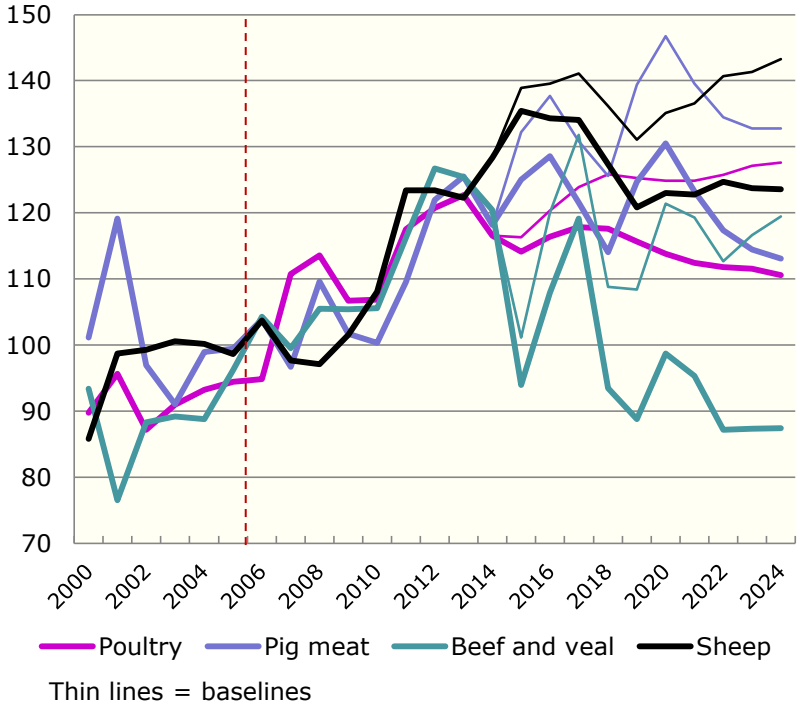
Outputs of the Aglink-Cosimo model:
EU and Global domestic prices

Scenario 1: Lower meat consumption **with no** protein compensation

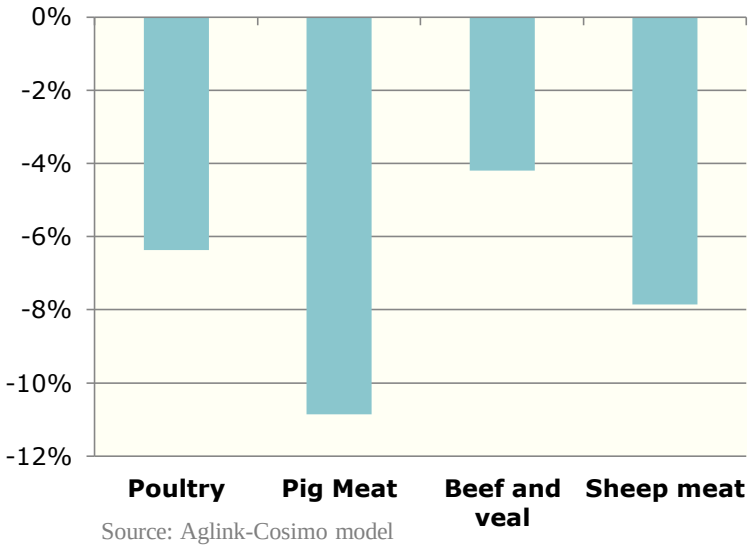
Evolution of EU meat domestic price index in scenario 1 (Base 100= 2005-07)



Thin lines = baselines

Source: Aglink-Cosimo model

Impact of the scenario 1 on the world price for different meat (% difference to the baseline in 2024)



Source: Aglink-Cosimo model

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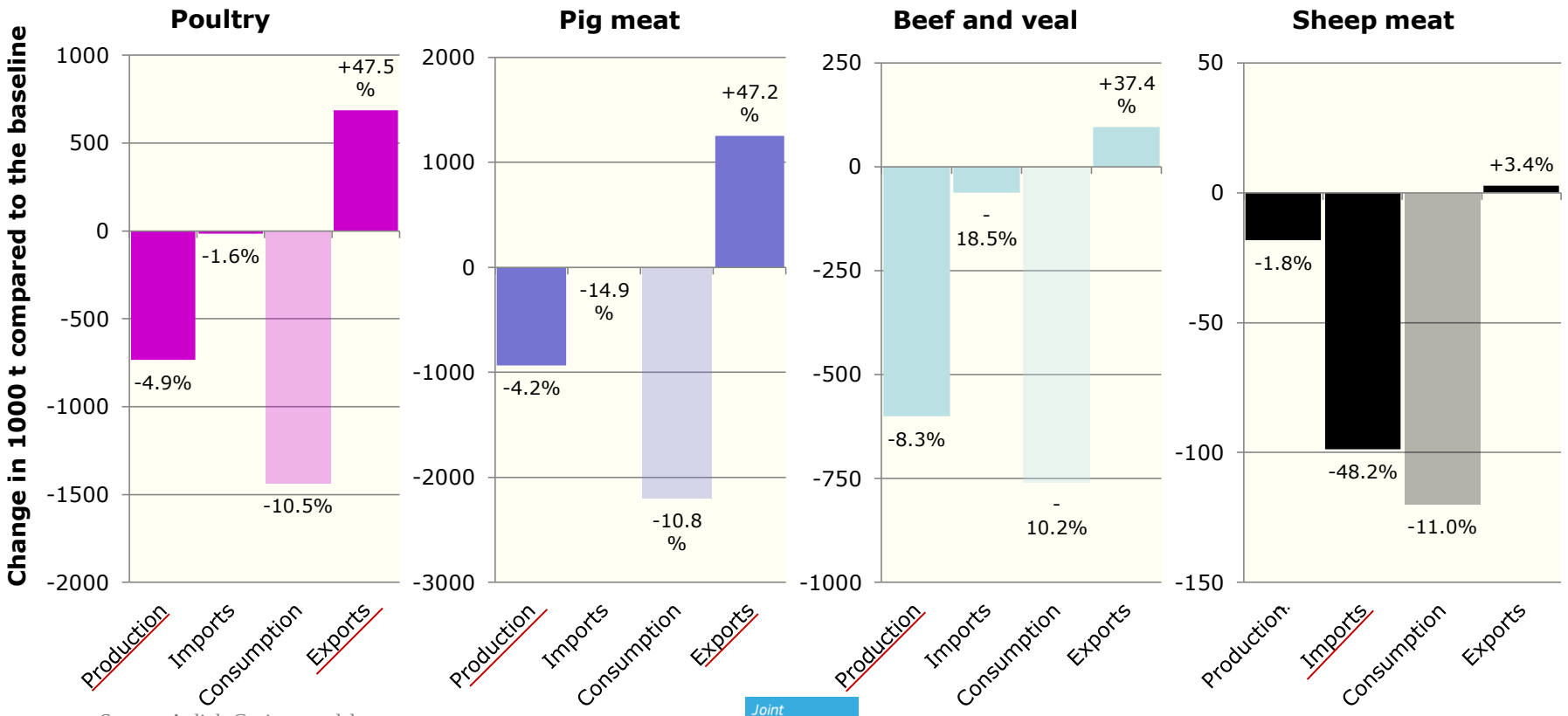
Outputs of the Aglink-Cosimo model:
Production & Consumption, Imports & Exports

Scenario 1: Lower meat consumption **with no** protein compensation

EU supply balance sheet for the meat markets in 2024
(Y axis: change in 1000T relative to the baseline, labels: % change relative to the baseline)



Source: Aglink-Cosimo model

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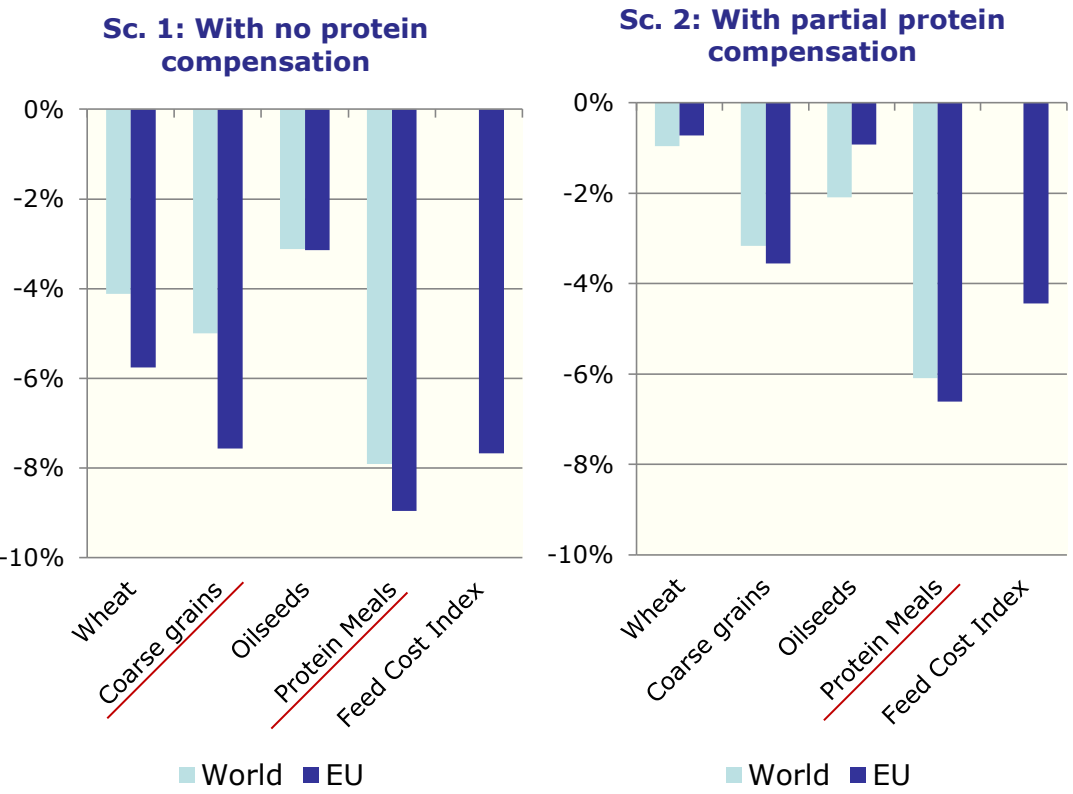
Outputs of the Aglink-Cosimo model:
Grain prices and Feed cost index

EU domestic and world prices for crops and EU feed cost index
(Difference to baseline in % change, 2024, scenario 1 and scenario 2)



Source: Aglink-Cosimo model

Contradictory market signals

↓ EU domestic demand

\+ ↓ EU domestic prices

↓ **Profitability of meat production**

vs.

↓ EU dom. feedstuff price

\+ ↑ EU export opportunities

↑ **Incentive to produce**

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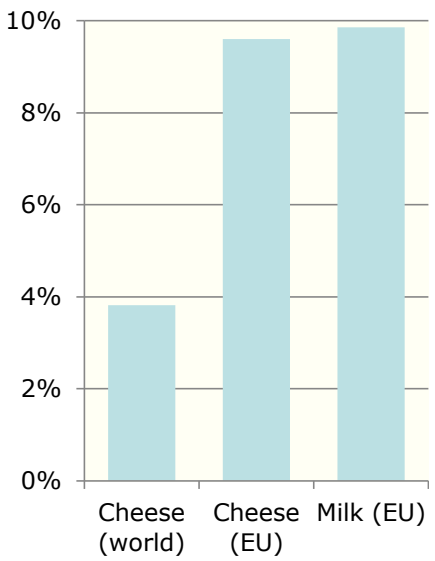
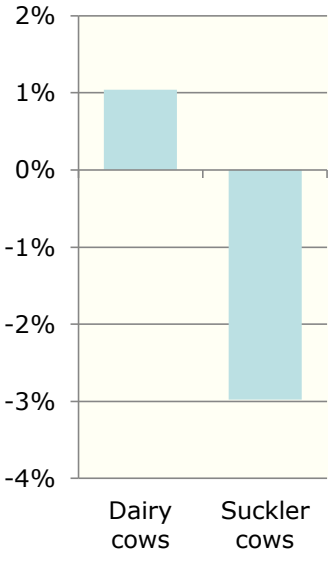
Outputs of the Aglink-Cosimo model:
dairy market

Dairy products price
(Difference to baseline in % change, 2024)



EU Cow inventory
(Difference to baseline in % change, 2024)



Source: Aglink-Cosimo model

Competition on beef and veal meat markets

in sc. 2 with partial protein compensation:

↑ Demand for dairy produce

↓

New market for **dairy farmers**

…

at the expenses of **suckler-cow producers**

Is the CAP 2014-2020 providing policy tools to smooth the transition for livestock producers in the 2 alternative scenarios?

Beef and veal, and Sheet and Goat sectors

Recoupling possibilities for direct payments: livestock and protein sectors (EU 1307/2013)

- Beef and veal = 40^{+}% total voluntary coupled supports in 2014/15
- Sheep and Goat ≈ 12% total voluntary coupled supports in 2014/15

Supports to grazing systems in line with "less-but-better" messages

- Direct payments redistribution for internal convergence
- LFAs and ANCs
- Agri-environment-climate measures
- Labelling and quality schemes

Pig and Poultry: less policy tools

All farming systems: Supports to sectorial restructuration

Uncertainties: ≠ implementation of CAP instruments among MS (design of RDPs)

CAP post 2020?

Status of this study = Explanatory research

High level of uncertainties on future pathways

Further research areas:

- Enlarge the commodity scope of the model (Fish, Fruits and Vegetables)
- Conversion of physical quantities into nutritional units (calories, nutrients equivalent)
- Integration of environmental indicators (coupling the model with an agro-economic module??)

Main messages of the scenario analysis

- A reduction of per capita meat consumption by 11% in high-income countries and 5% in Mexico, Argentina and Brazil **would have an impact on global meat market, with stronger consequences on EU markets**, even taking into account leakage effects

- **Beef and Veal** would be the most affected sector in case of protein compensation with milk and dairy produce among other

- **The CAP 2014-2020 presents policy tools** to smooth the transition for ruminant breeders but their implementation will be diverse among Member States.
- Less options are available for poultry and pig breeders.

Thank you for your attention

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