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“To explore the potential of nature to improve the quality of life”



The EU's farm-to-fork strategy: An assessment from the perspective of agricultural economics

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EU Climate Change Policy: Green Deal

“Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal will transform the EU into a **modern, resource-efficient** and **competitive economy**, ensuring:

- no net emissions of greenhouse gases by 2050
- economic growth decoupled from resource use
- no person and no place left behind”

EU Climate Change Policy: Green Deal

Some more details

- 0.6 trillion euro investments from the NextGenerationEU Recovery Plan, and the EU's seven-year budget.
- **One trillion** in total with private sector
- lifeline out of the COVID-19 pandemic
- reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.
 - Proposals on climate, energy, transport, and taxation

Actions



Climate



Environment and oceans



Energy



Transport



Agriculture



Finance and regional development



Industry



Research and innovation

EU Agriculture and Climate Change

- Farm-to-Fork Strategy
- Biodiversity Strategy
- Eco-Design policy
 - Sustainability labelling
- CBAM: carbon border adjustment mechanism

EU Agriculture and Climate Change

TABLE 1 Key quantitative targets of the F2F strategy to be reached by 2030

- Reducing the use and risk of chemical pesticides by 50%
- Reducing the use of more hazardous pesticides by 50%
- Reducing nutrient losses by at least 50% while ensuring no deterioration in soil fertility
- Reducing fertilizer use by at least 20%
- Reducing the sales of antimicrobials for farmed animals and in aquaculture by 50%
- Increasing total farmland under organic farming to 25%
- Reducing per capita food waste at retail and consumer levels by 50%
- EUR 10 billion under Horizon Europe (2021–2027) to be invested in R&I related to food, bioeconomy, natural resources, agriculture, fisheries, aquaculture, and the environment

Source: EC (2020a).

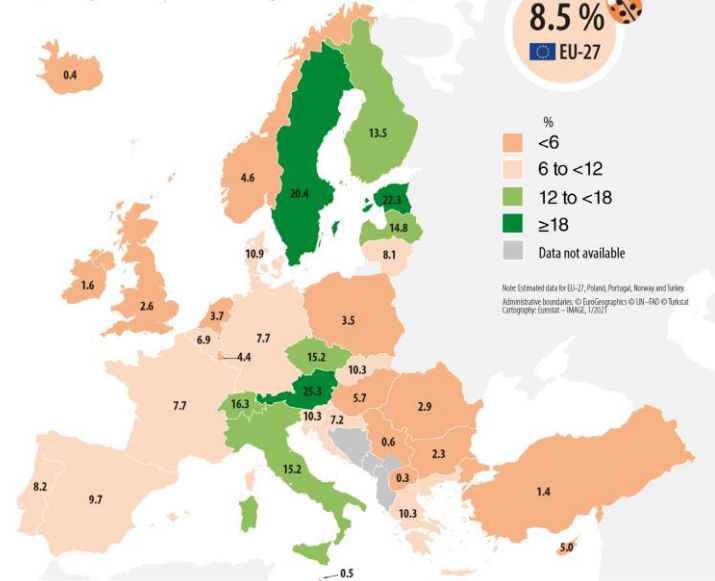
TABLE 2 Key qualitative targets of the F2F strategy to be reached by 2030

- Creation of a healthy food environment supporting healthy and sustainable food choices
- Mandatory harmonized front-of-pack nutrition labeling
- Sustainable food labeling framework that covers the nutritional, climate, environmental, and social aspects of food products
- Collaboration with third countries and international actors to support a global move toward sustainable food systems
- Support via EU Horizon Europe key funding programs for research and innovation.

Source: EC (2020a).

Organic farming area

(% of organic area in total utilised agricultural area, 2019)



EU Agriculture and Climate Change

TABLE 3 Objective of the EU new CAP 2023–2027

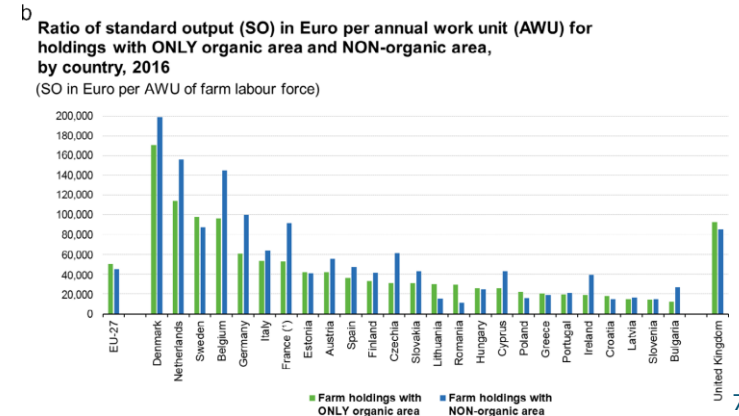
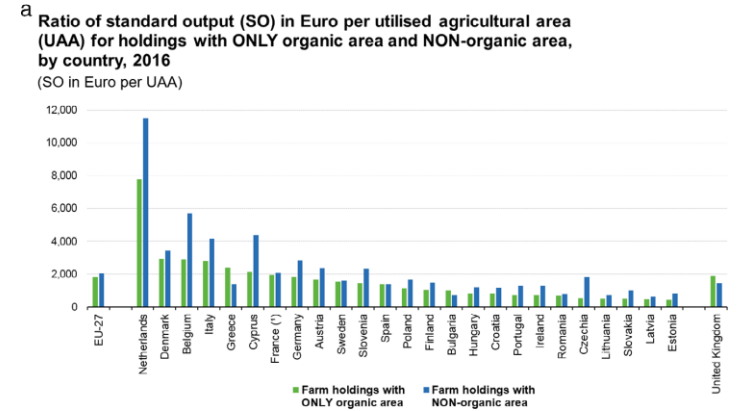
Three overall objectives

- Foster a smart, resilient, and diversified agricultural sector ensuring food security;
- Bolster environmental care and climate action and contribute to the environmental- and climate-related objectives of the Union;
- Strengthen the socio-economic fabric of rural areas.

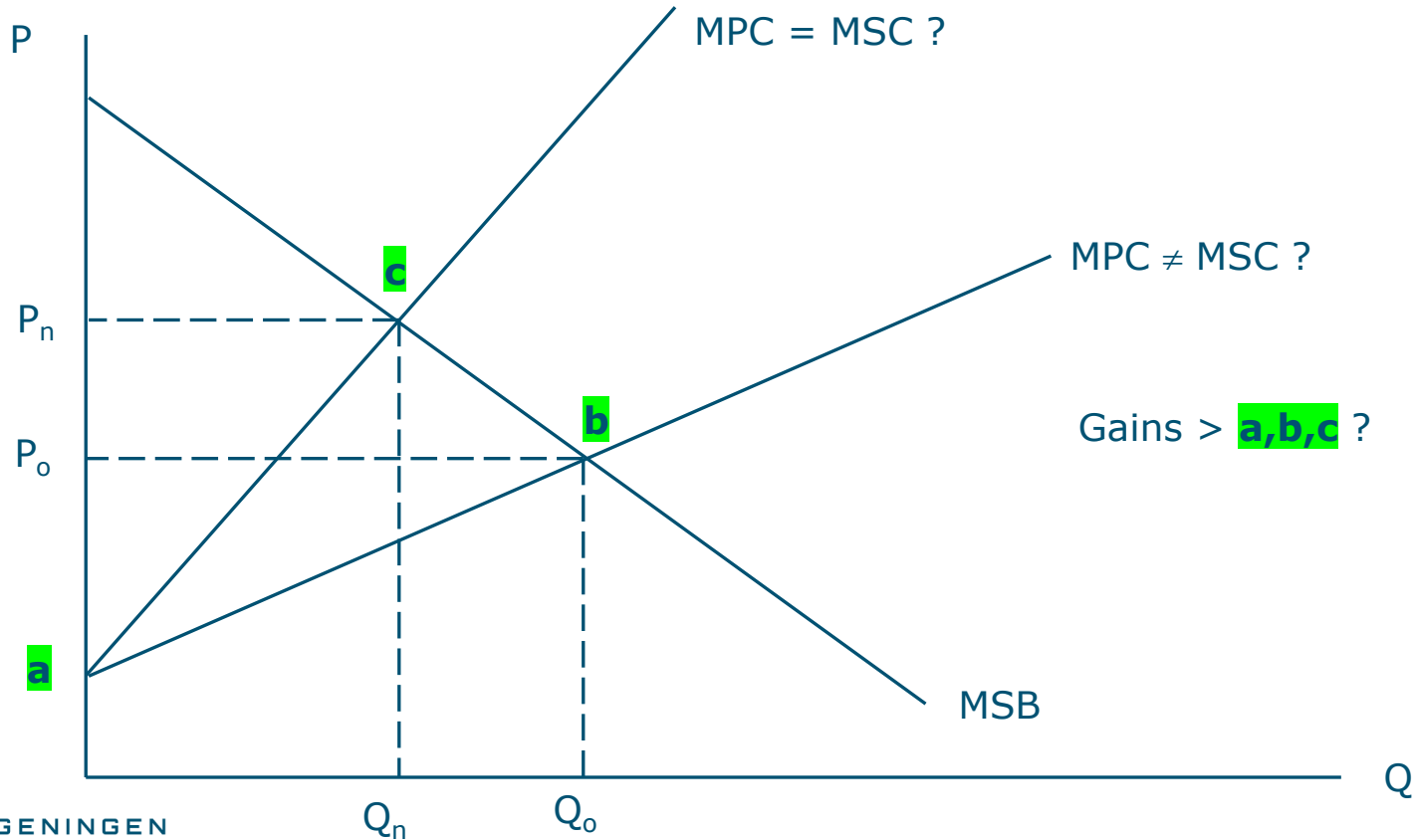
Nine specific objectives

- Ensure fair farm income
- Increase competitiveness
- Rebalance power in food chains
- Climate change action
- Environmental care
- Preserve landscapes and biodiversity
- Support generational renewal
- Vibrant rural areas
- Protect food and health quality

Source: EC, 2020b.



Economic (Welfare) Impact



Expected impact of F2F

TABLE 6 Study results on the aggregate economic impact of the F2F strategy

Farm income	Food expenditure	GDP	EU production value (billion)	Author
Increase	Increase	Decrease ^c		Barreiro-Hurle et al.
-16%	153.2 USD/capita	-84.2 billion USD ^d		Beckman et al.
Decrease			-140 Euro	Bremmer et al.
+35.08 billion Euro	70 billion Euro ^b	Decrease	Increase	Henning et al.
>15 billion ^a	Increase ^c	Decrease ^c	Decrease	Noleppa et al.

^aOnly plant production considered and calculated for 2040.

^bExpressed in total consumer surplus.

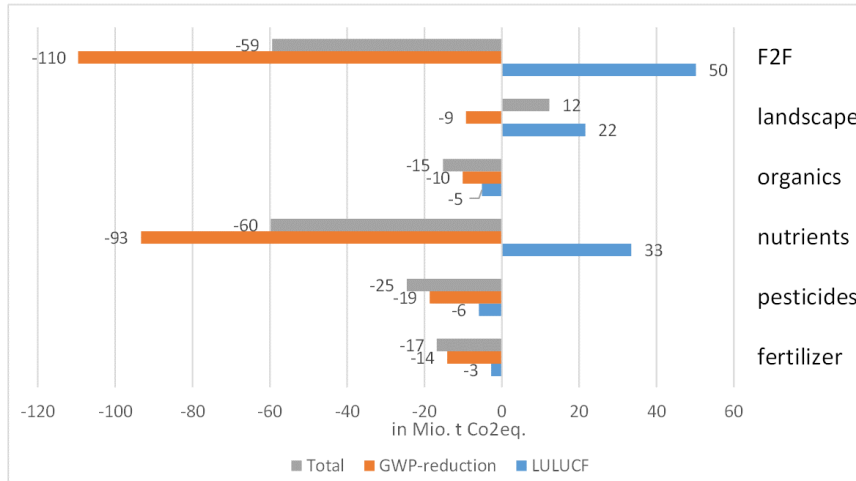
^cIndirectly concluded from the decline in output and the general model description.

^dFor the EU only.

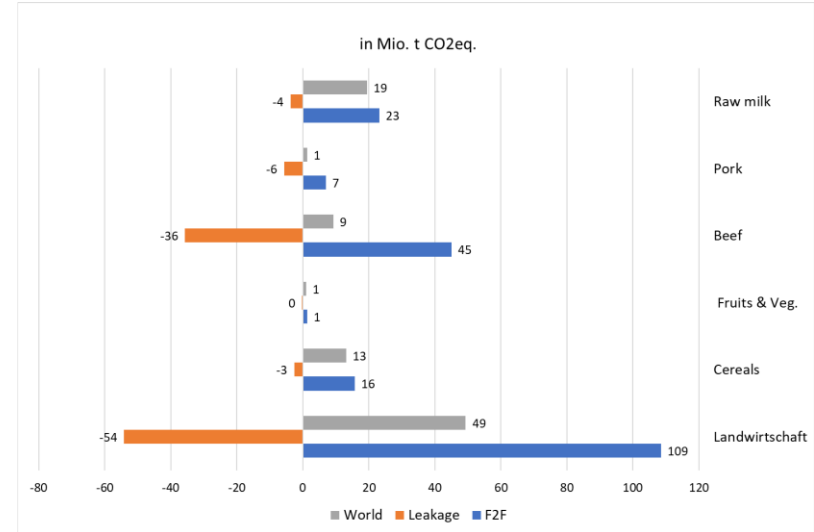
Source: derived from the studies cited.

Changes in Global Warming Potential

Expected emission changes



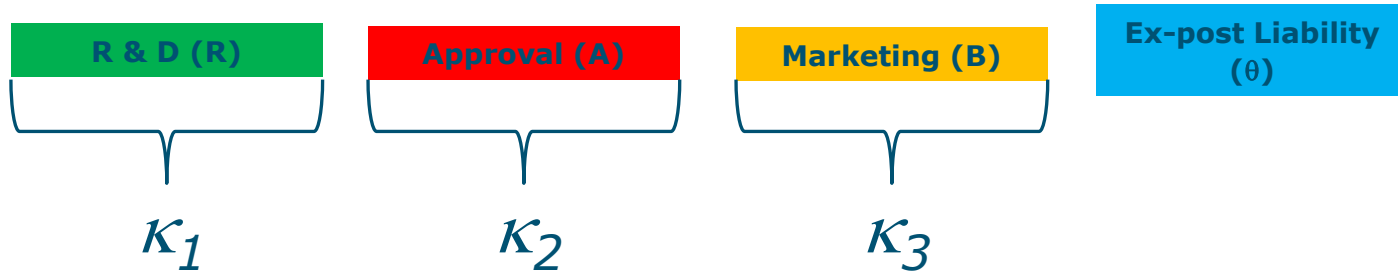
Leakage effects (not including LULUCF)



Net GWP in Mio. t CO_{2eq}: $-110 + 50 + 54 = -6$

Regulatory Implications for New Solutions

- Four phases: R&D, Approval, Marketing, Ex-post Liability



- Effect of Regulation on Immediate Investment

Some Disturbing Results...

TABLE 2 Ordinary least squares (OLS) regression results of the Monte Carlo simulation

Variable	Coefficients	t Stat
Intercept	6.7640 (0.0197)	342.4964***
κ_1 (R&D phase)	0.7091 (0.0017)	420.9326***
κ_2 (approval phase)	0.7375 (0.0017)	437.4946***
κ_3 (ex-post liability)	-0.0134 (0.0017)	-7.9767***
μ (discount rate)	32.1754 (0.1520)	211.6686***
q (probability benefits high)	-15.4388 (0.0151)	-1019.4632***
Observations	120,012	
R square	0.9238	
F-value	291060***	

***Indicates statistical significance at the 1% level and numbers in brackets the SEs.

EU F2F Strategy: Conclusions

- Farm-to-Fork/Biodiversity Strategy: diverse (negative) welfare impacts
- Farmers gain, consumers loose, climate change effect questionable
- EU Green Deal: more needs to happen
- Institutional change for technical change important
- Policy makers have it in their hands!

Sources

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Many thanks for your attention!

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The views expressed are my own and not necessarily reflect theirs.



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