


## **The Farm to Fork/Biodiversity strategies** What are the first studies saying about their potential impacts?

Last rev. 28.09.2021

The Copa-Cogeca Communication Team

# Background



**11.12.19** – First presentation of the European Green Deal (incl. the Farm to Fork and Biodiversity strategy)

**20.05.20** – Release of the [EC Communications](#) on the Farm to Fork strategy (F2F) and Biodiversity strategy for 2030 (BDS)

**19.10.20** – EU Council [sets its priorities](#) for the F2F. EU Council endorses the goal of developing a sustainable European food system. EU Council calls for “scientifically-sound ex-ante impact assessments”.

**10.09.21** – The EU Parliament's joint ad-hoc AGRI/ENVI committee adopts a report adding 48 compromise amendments to the Commission's communication.

**21.10.21** - The EU Parliament is expected to vote in the plenary on the report proposed by the joint AGRI/ENVI report.

**2022** - The EC will have to work from this basis to propose a set of regulations.



# A target-oriented approach that remains vague as to the means and tools available to the EU farming community

- \* The Commission's communication, which could be reinforced by the European Parliament's vote in the plenary in the coming weeks, is mainly built around numerical targets that have to be reached. Here are the key targets, as presented by the European Commission ([Factsheet 20.05.20](#)):



**The use of pesticides in agriculture** contributes to pollution of soil, water and air. The Commission will take actions to:

- ✓ **reduce by 50%** the use and risk of chemical pesticides by 2030.
- ✓ **reduce by 50%** the use of more hazardous pesticides by 2030.



The **excess of nutrients** in the environment is a major source of air, soil and water pollution, negatively impacting biodiversity and climate. The Commission will act to:

- ✓ **reduce nutrient losses by at least 50%**, while ensuring no deterioration on soil fertility.
- ✓ **reduce fertilizer use by at least 20%** by 2030.



**Antimicrobial resistance** linked to the use of antimicrobials in animal and human health leads to an estimated 33,000 human deaths in the EU each year. The Commission will **reduce by 50% the sales of antimicrobials for farmed animals and in aquaculture by 2030**.



**Organic farming** is an environmentally-friendly practice that needs to be further developed. The Commission will boost the development of EU organic farming area with the aim to achieve **25% of total farmland under organic farming by 2030**.

# A target-oriented approach that has not been objectively quantified to date.

- \* The **EC promised a comprehensive impact assessment** of its strategies back in 2020 when the F2F/BDS were launched.
- \* A few months after the release, the rhetoric changed to having "[impact assessments for each of the different targets/initiatives](#)", as measuring all the impacts in a comprehensive manner would be "almost impossible" (DG SANTE).
- \* Faced with an increasing number of studies since early summer, the EC's position seems to have changed again.
- \* In a [tweet](#) on 23<sup>rd</sup> September, Commissioner for Agriculture, Janusz Wojciechowski, announced the return of an overall impact study before retracting his statement at a [press conference](#) the same day, speaking of "impact assessments" without providing further details.
- \* What is certain today is that **we will not have an official impact study before the EP votes on its own initiative report.**
- \* It is therefore important to understand what the reports/studies that have already been published, even if they are incomplete, say about the F2F/BDS and their impacts.



# COPA-COGECA position on the need for a comprehensive impact assessment of the F2F/BDS.

- \* From the day that this strategy was launched, COPA-COGECA has always been [crystal clear](#):
- \* **We share and support the principles of a more sustainable form of agriculture.** The EU farming community is aware of the challenges ahead and is willing to operate with significant changes where possible.
- \* **We call for a comprehensive impact assessment that would include any new key proposals made by co-legislators.**
- \* Specific assessments are interesting but all proposals that are being formulated around the F2F/BDS will impact our farms and cooperatives at the same time. **Specific assessments cannot take into account the cumulative or dynamic effects that actually lie behind these broad objectives.**
- \* This call for a comprehensive impact assessment does not aim to delay the policy process but rather to do the opposite. Indeed, we hope to start a discussion as soon as possible in which concrete options and tools are debated using fact-based evidence.





# I. FIRST ASSESSMENT - THE USDA REPORT (02.11.20)

<b>Authors</b>	Jayson Beckman, Maros Ivanic, Jeremy L. Jelliffe, Felix G. Baquedano, and Sara G. Scott - Economic Research Service USDA
<b>Analysed targets (4 main targets)</b>	<p>(1) 50% reduction in the use of plant protection products          (2) 20% reduction in the use of fertilisers          (3) 10% decrease in productive agricultural area*          (4) 50% reduction of antibiotics in livestock farming.</p> <p>*It should be noted that the third objective is slightly different from that of the Commission. The USDA evaluation did not take into account the objective of 25% of UAA in organic farming or the reductions of food waste/change in Food Systems.</p>
<b>Model used</b>	The study uses the GTAP-AEZ partial general equilibrium model which divides the world into 18 agro-ecological zones and takes into account the allocation of agricultural and non-agricultural land, as well as another model (IFSA) to estimate the effects on food consumption in developing countries and on food security.
<b>Relevant specificities of the study</b>	<p>The USDA study is the only one that try to measure the effects of the F2F and BDS in Europe but also the rest of the world with 2 main scenarios: the EU alone adopts its measures, or these measures are adopted fully/partially in all countries.</p> <p>It is interesting to look at this approach in conjunction with <a href="#">the discussions</a> surrounding the launch of the UN Food Systems Summit.</p>
<b>Authors recommendations</b>	As the EU is a major agricultural producer and participant in international agricultural trade, this policy shift is likely to affect international markets for agricultural commodities and, consequently, the broader food and agriculture system.





# I. KEY CONCLUSIONS – USDA REPORT (02.11.20)

## Overall impact on production

The EU-only scenario, by far the most likely in the short to medium term, **predicts a 12% decline in overall EU agricultural production**. If the Farm to Fork strategy was adopted worldwide, the overall decrease in EU production would be around 7%.

The USDA study is to date the only study to also assess the level of “food insecurity” if the strategy was applied at EU/world level. According to the lead authors, in an **EU-only adoption** scenario, by 2030 the number of food-insecure people **would increase by an additional 22 million more than the number projected if the EC’s proposed strategies were not adopted. This number would climb to 185 million food-insecure people in a worldwide adoption scenario.**

## Overall impact on farmers’ incomes

**16% drop in gross EU farm income if the EU is the only bloc to opt for a F2F approach.** If adopted worldwide, EU gross farm income could increase by 15%, resulting mostly from the decrease in overall production and limitations to trade.

## Overall impact on EU trade

**European agri-food exports would fall by 20% and imports would rise by 2% in an EU-only scenario.**

The declines in production and trade, coupled with the projected increases in food commodity prices, would significantly reduce the EU’s gross domestic product (GDP), especially if adoption was limited to the EU. **In this case, the EU’s decline in GDP would represent 76 percent of the decline in the worldwide GDP.**

## Overall impact on food prices

A 17% increase in agricultural and food prices is predicted if the EU alone adopts the F2F/BDS. In a worldwide adoption scenario, the price index used within the USDA model predicts a 53% increase.

## Study limitations

Assumption of a 10% decrease in productive agricultural area (i/o 10% non-productive agricultural area); 25% of UAA in organic farming not considered; no change considered in food diet and waste; no change considered in agricultural methods.





# I. KEY TABLE – USDA REPORT (02.11.20)

Summary of the main impacts of the Strategies under the three scenarios<sup>1</sup>

	European Union	United States	Worldwide
<b>Scenario: EU adoption only</b>			
Production (percent change)	-12	0	-1
Prices (percent change)	17	5	9
Imports (percent change)	2	-3	-2
Exports (percent change)	-20	6	-2
Gross farm income (percent change)	-16	6	2
Increase in food cost (annual per capita change in U.S. dollars)	153	59	51
Increase in food insecurity <sup>2</sup> (millions of people)	na <sup>1</sup>	na	22
GDP (change, in billions of U.S. dollars)	-71	-2	-94
<b>Scenario: middle<sup>3</sup></b>			
Production (percent change)	-11	0	-4
Prices (percent change)	60	1	21
Imports (percent change)	-10	-7	-9
Exports (percent change)	-10	-2	-9
Gross farm income (percent change)	8	1	4
Increase in food cost (annual per capita change in U.S. dollars)	651	16	159
Increase in food insecurity (millions of people)	na	na	103
GDP (change, in billions of U.S. dollars)	-186	-86	-381
<b>Scenario: global adoption</b>			
Production (percent change)	-7	-9	-11
Prices (percent change)	53	62	89
Imports (percent change)	-5	-15	-4
Exports (percent change)	2	3	-4
Gross farm income (percent change)	15	34	17
Increase in food cost (annual per capita change in U.S. dollars)	602	512	450
Increase in food insecurity (millions of people)	na	na	185
GDP (change, billions of U.S. dollars)	-133	-74	-1,144







## II. THE HFFA STUDY (12.05.21)

<b>Authors</b>	Steffen Noleppa, Matti Carlsburg - HFFA Commissioned by Euroseed
<b>Analysed targets</b>  <b>(4 main targets)</b>	(1) An inclusion of non-productive land - 10 percent of all agricultural land by 2030 (2) An increase of the area under organic farming - 25 percent of all agricultural land by 2030 (3) A reduction of the use of chemical PPP - 50 percent reduction by 2030 (4) A reduction of nitrogen fertilisers - 20 percent reduction by 2030
<b>Model used</b>	<p><b>The modelisation used is</b> a partial equilibrium model. It is based on an already existing own multi market model (MMM) (see, Lüttringhaus and Carlsburg, 2018) and fed with current data. It was also further modified and calibrated to fit the reference scenario and time horizon of this study.</p> <p>In this study, the focus is not per say on the impact of the Farm to F2F/BDS but on the capacity of plant breeding to contribute to productivity (ex-post analysis) and on the capacity of plant breeding innovation specifically to limit the overall production decrease induced by the implementation of the two strategies (ex-ante assessment). Chapter (3.1) of the report is devoted to the impact of the strategies on crop production for 10 different crop groups.</p>
<b>Overall impact on production</b>	For the EU, the report predicts a decrease of <b>26% in wheat, 22% in corn, 22% in sunflower seeds, 21% in raw sugar, 23% in potatoes, 20% in pulses and 23% in green maize.</b>
<b>Relevant specificities of the study</b>	The main interest of the ex-ante analysis of this study is to analyse the impact of plant breeding on the compensation of production losses due to the implementation of the new strategies including the role of new plant breeding methods (see graph on the next slide).
<b>Authors' recommendations</b>	On average across all major EU arable crops, plant breeding accounts for approximately 67% of innovation-induced yield growth. EU arable crop production would have been more than 20% lower in 2020 without the genetic crop improvements that plant breeders have provided since 2000. Extra market supply in 2030 with plant breeding maintaining its current pace between 2020 and 2029 will not be enough to compensate the losses of the strategies. For wheat, OSR, other oilseeds and pulses, even two decades are not enough.





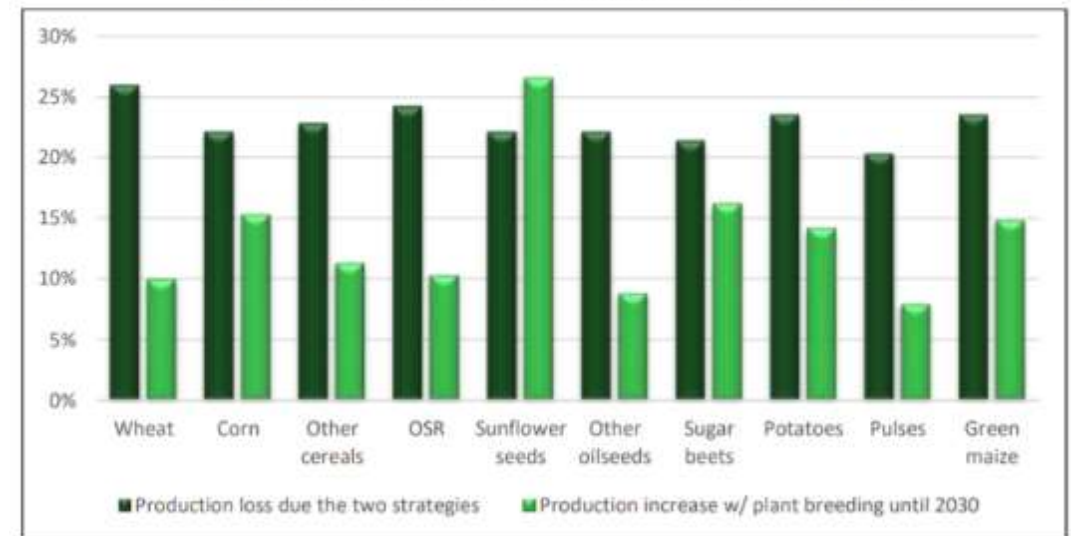
## II. KEY GRAPHS – HFFA STUDY (12.05.21)

Figure 3.2: Assumed production cuts in 2030 of full implementation of the "Farm to Fork" and "Biodiversity" strategies in the EU and selected member states (in percent)

Crop/Region	EU	DE	FR	IT	ES	UK
Wheat	26	32	29	23	22	31
Corn	22	30	22	19	19	23
Other cereals	23	31	22	22	21	23
OSR	24	28	25	19	19	26
Sunflower seeds	22	28	22	19	19	23
Other oilseeds	22	28	22	19	19	23
Raw sugar	21	19	25	27	27	26
Potatoes	23	29	24	22	22	26
Pulses	20	30	18	24	24	19
Green maize	23	30	24	22	22	26

Source: Own calculations and figure.

Figure 3.3: Production effects in 2030 of the "Farm to Fork" and "Biodiversity" strategies vs. with plant breeding progress between 2020 and 2029 in the EU



Source: Own calculations and figure.



## II. KEY GRAPHS – HFFA STUDY (12.05.21)

Figure 3.18: Comparing (above) and balancing (below) partial market supply effects of the two strategies with plant breeding progress until 2040 in the EU (in million tons)

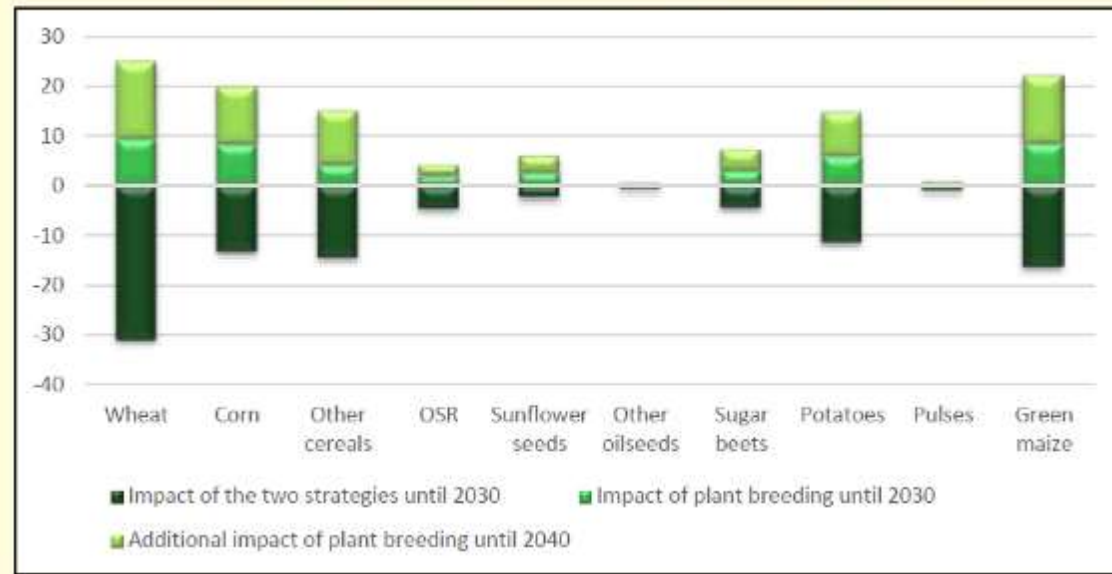
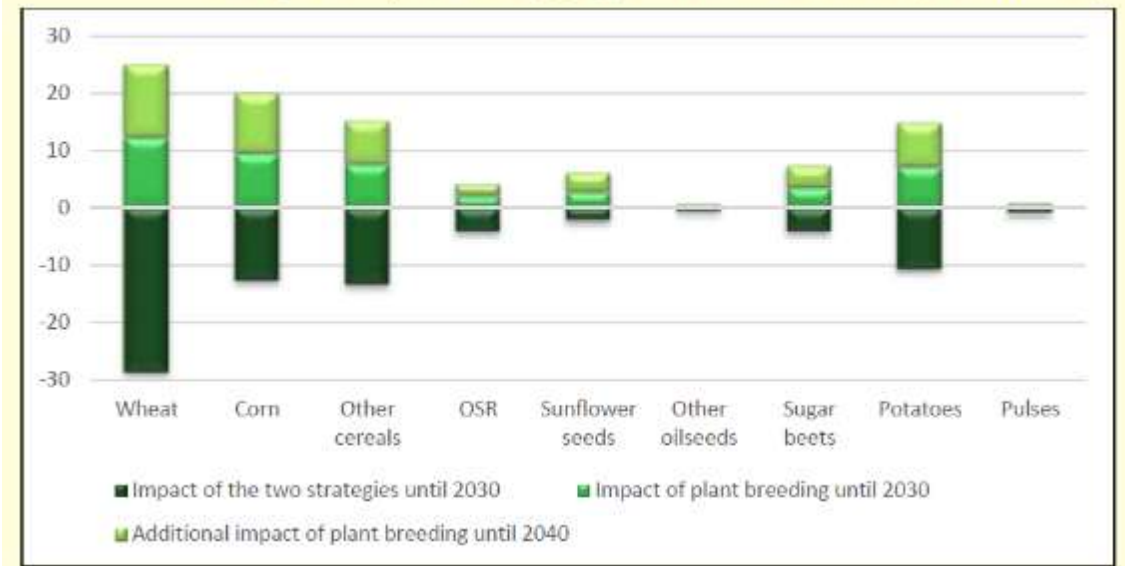


Figure 3.25: Comparing (above) and balancing (below) partial net trade effects of the two strategies with plant breeding progress until 2040 in the EU (in million tons)





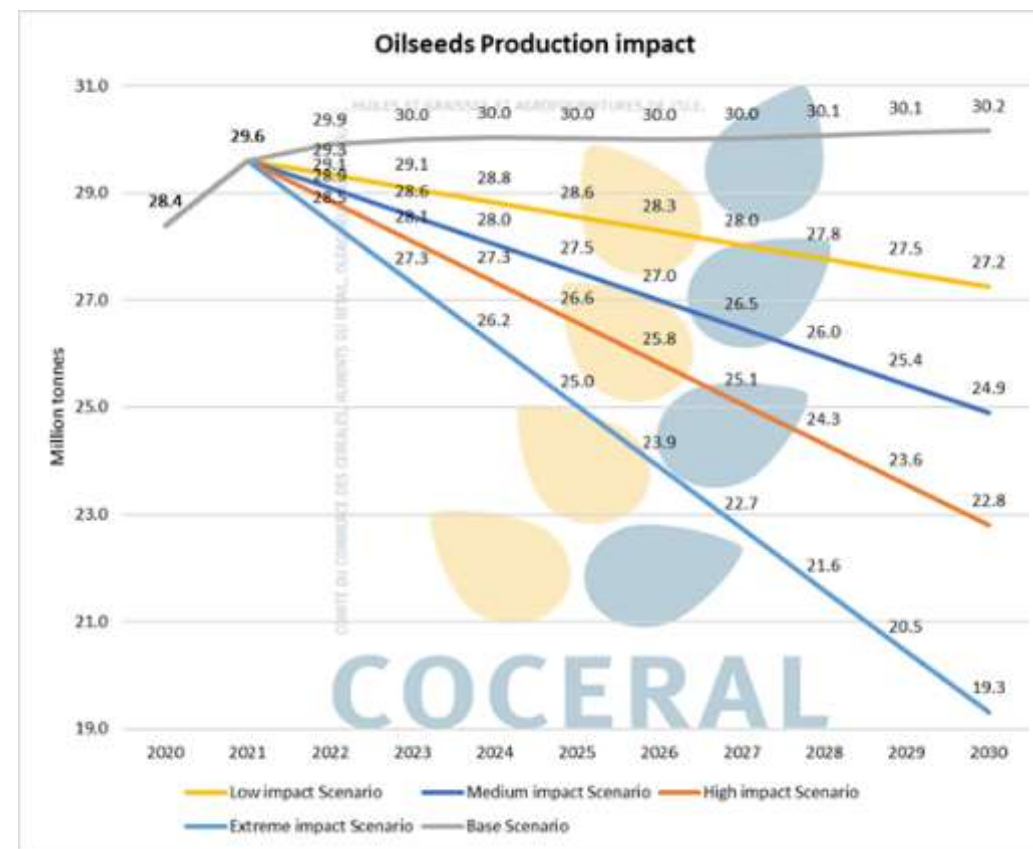
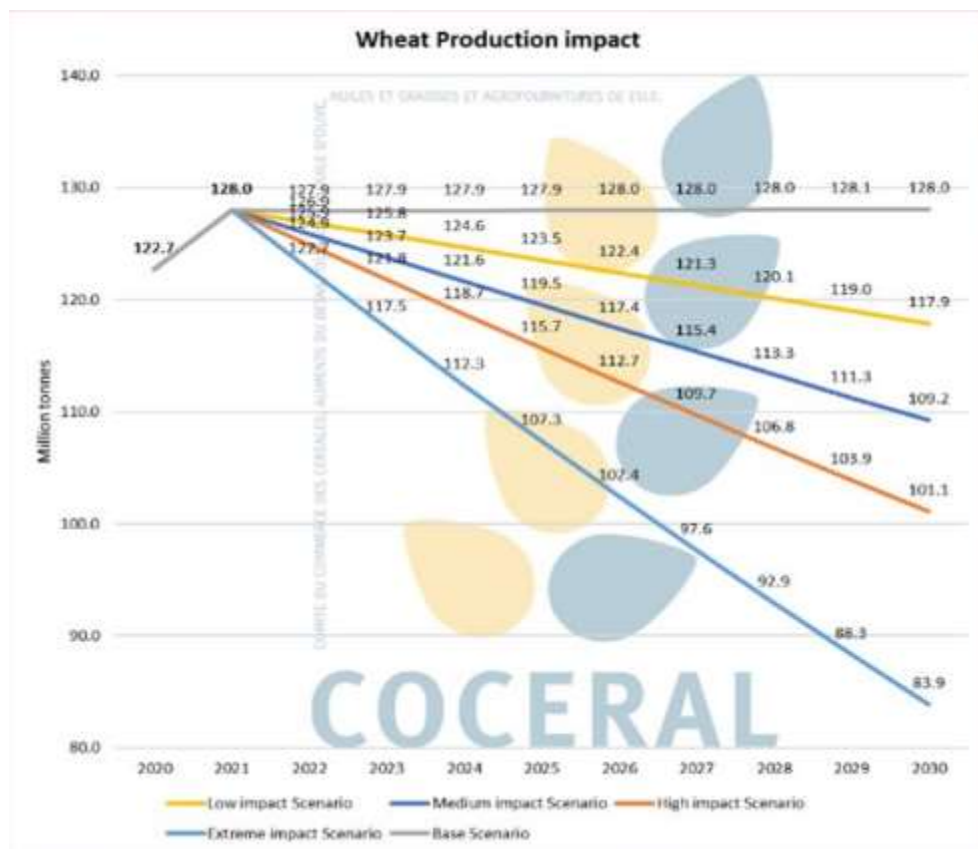
# III. THE COCERAL STUDY (23.06.21)

<b>Authors</b>	Coceral internal study: expert study prepared by market specialists from Coceral and Unistock Europe members (i.e. national associations and companies)
<b>Analysed targets (4 main targets)</b>	<ol style="list-style-type: none"> <li>(1) Reduce pesticide use by 50%</li> <li>(2) Reduce fertiliser applications by 20% and reduce nutrient losses by 50%</li> <li>(3) Bring organic area from a current ~8% to 25% of agricultural land by 2030</li> <li>(4) 10% of total agricultural land to be dedicated to 'high diversity landscape'</li> </ol>
<b>Model used</b>	<p><b>The assessment that was presented by Coceral in June 2021 was not academic in nature nor based on intricate modelling.</b> It is rather an empirical evaluation put together by analysts and business operators from a dozen companies and national associations, members of Coceral, which looked at how the EU's agricultural production would be transformed.</p> <p>Three scenarios were considered depending on the area of arable crops impacted in comparison to the total agricultural area: a low impact, a medium impact and a high impact scenario. A fourth scenario (extreme impact) only assesses the implementation of the F2F targets on arable land, especially the set-aside and organic targets.</p>
<b>Overall impact on production</b>	Similar to the HFFA study, Coceral mostly focused on the impact of the proposed targets on production. Coceral predicts a <b>8-21% decrease in wheat production, a 8-19% decrease in corn, a 9-22% decrease in barley and a 10-24% decrease in oilseed.</b> (See graphs on the next slide)
<b>Relevant specificities of the study</b>	In its study, Coceral tries to consider the impact of this drop in cereals production on trade. In all scenarios, Europe would become a net importer of crops (a result that was later confirmed by the JRC report (except wheat), the Grain Club study and the WUR crops impact assessment).
<b>Study limitations</b>	The study addresses the F2F impact on cereal and oilseed production, not on agriculture as a whole. It does not address the price impact either. Assumptions made on yield impacts of F2F targets and the implementation of mitigation measures (IPM, NBTs, etc.) are not explicit.





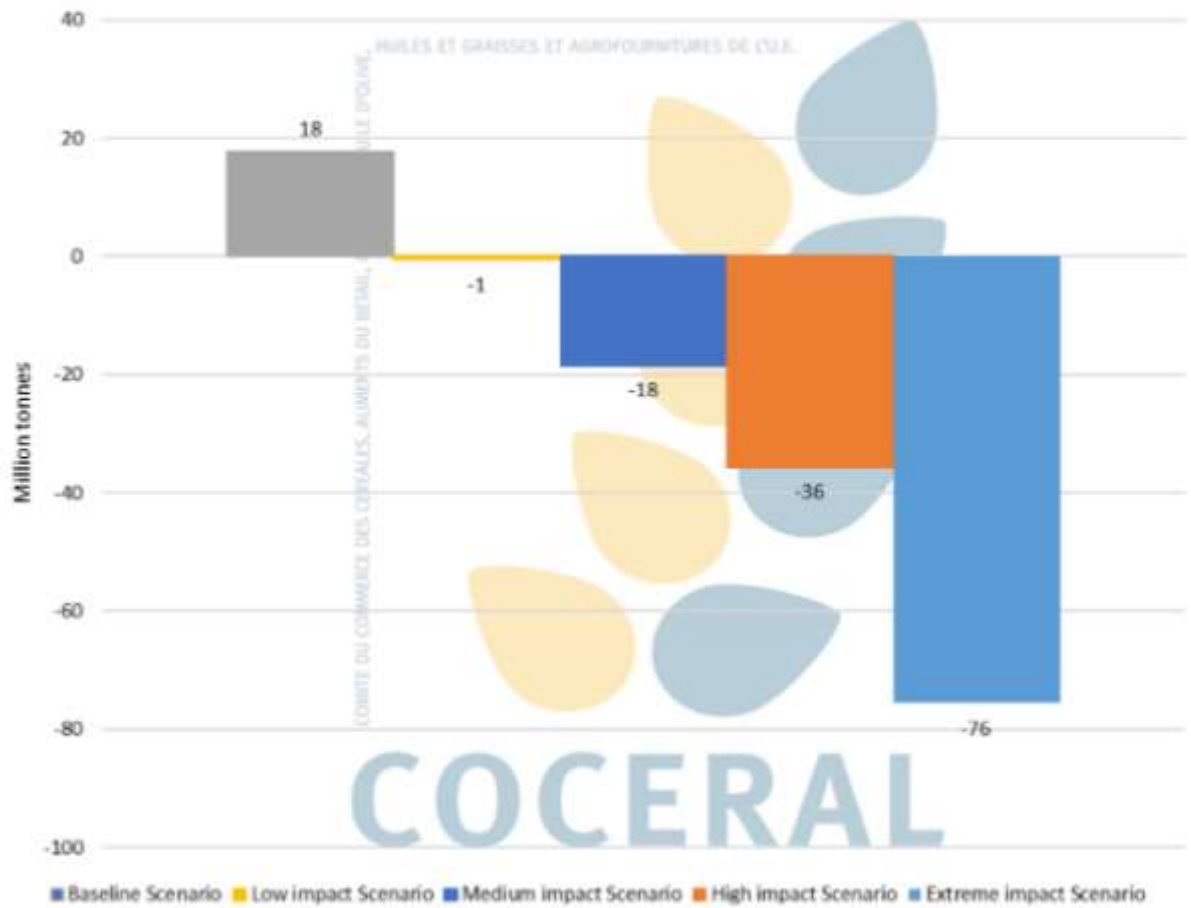
# III. KEY GRAPHS - COCERAL STUDY (12.05.21)



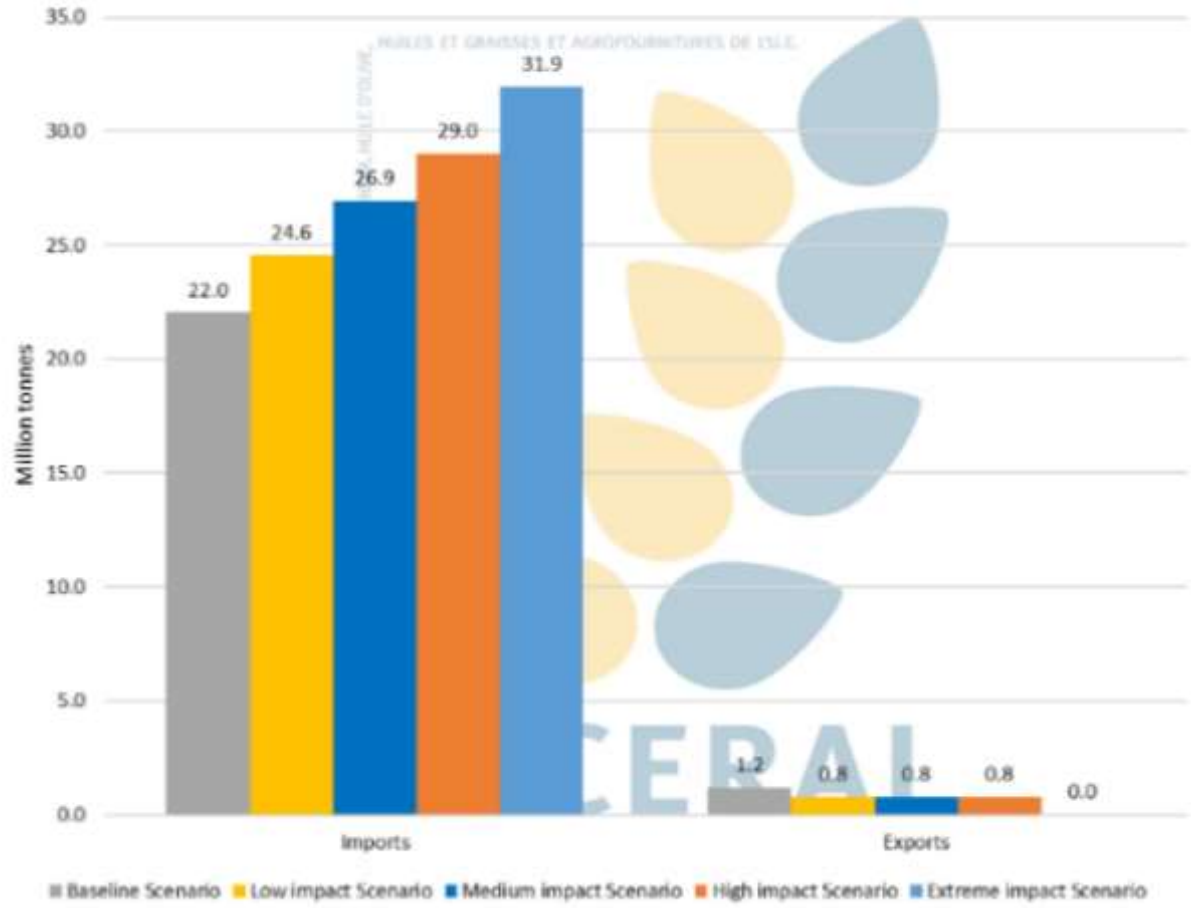


# III. KEY GRAPHS - COCERAL STUDY (12.05.21)

Net Grain Trade



2030 Oilseeds Imports/Exports





# IV. THE JRC TECHNICAL REPORT (29.07.21)

<b>Authors</b>	BARREIRO HURLE Jesus; BOGONOS Mariia; HIMICS Mihaly; HRISTOV Jordan; PEREZ DOMINGUEZ Ignacio; SAHOO Amarendra; SALPUTRA Guna; WEISS Franz; BALDONI Edoardo; ELLEBY Christian – Joint Research Center
<b>Analysed targets (4 main targets)</b>	(1) Reduction by 50% in PPP expenditure; 50% increase in other input costs (to reflect increased mechanical weeding); 25% increase in cover and catch crop area (2) Reduction by 50% of the EU gross N balance using technology increasing N use efficiency (3) Increase of organic farming area to 25% of agricultural land at EU level (vs. current 8.1%) (4) Increase of fallow area to 10% of EU agricultural area (vs. current 4.7%)
<b>Model used</b>	<p><b>The JRC technical report is using the CAPRI model, which is a regionalised partial equilibrium model focused on the agricultural sector including environmental and land-use effects brought about by agricultural production.</b></p> <p>The impacts were modelled for three scenarios. One is a status quo scenario assuming CAP change (= continuation of the CAP 2014-2020). The other two scenarios include the implementation of the post 2020 CAP (according to the 2018 Commission legal proposal), with and without the use of the Next Generation EU fund supplementing the EARDF budget.</p>
<b>Relevant specificities of the study</b>	<p>This JRC technical report is not a comprehensive impact assessment of the strategy, which would require many more parameters to be taken into account. However, the most interesting point, which is not addressed in previous reports, is the impact on EU and global GHG emissions. <b>The JRC report is the first to point out that the reduction in agricultural CH<sub>4</sub> and N<sub>2</sub>O emissions resulting from F2F/BDS would range from 20% to 30% vs. the baseline scenario. However, between 40 to 60% (depending on scenarios) of the emissions avoided in Europe would be offset by increased emissions in the rest of the world via carbon leakage due to increased non-EU production as a result of increased EU imports.</b></p>





# IV. THE JRC TECHNICAL REPORT (29.07.21)

<b>Overall impact on production</b>	<p>The report predicts an overall decrease in EU production of 5 to 15% (depending on scenarios) <b>Production would be reduced by 12-15% for cereals, 12-15% for oilseeds, 14% for beef, 15-16% for pork, 15% for poultry, 11-12% for milk and 2-3% for sheep and goat fattening.</b></p>
<b>Overall impact on farmers' incomes</b>	<p>The examined scenario leads to significant price reactions, mainly for meat products. The total income of the <b>cereals sector decreases substantially (-26%)</b>. Smaller impacts were observed for the <b>vegetables and permanent crops sector (-5%)</b>. On the livestock side, the CAPRI model is too sensitive according to the author. Indeed, findings derived from the CAPRI model suggested a <b>126% increase in total income for beef</b> production while <b>pork producers would see a +129% income increase</b> and <b>poultry producers a +83%</b>. The WUR policy paper on livestock (slide 22) corrects the sensitivity of the model.</p>
<b>Overall impact on EU trade</b>	<p>The EU agri-food trade balance would deteriorate sharply. The EU would remain a net cereal exporter with a worsening of its position. EU oilseed/vegetables and permanent crop imports would increase significantly, making the EU even more dependent. On the livestock side, the EU will increase its dependency on beef/sheep/goat imports. The EU will remain a net exporter for poultry and pork however the EU will see a very significant decrease of its exporting capacity. Only dairy products should see a limited increase of exports.</p>
<b>Overall impact on food prices</b>	<p>Seems to be a weak point of the CAPRI model, which is very sensitive regarding this point, showing very strong price increases, especially for livestock products. The overall price increase is expected to be around 12%. Cereal prices are expected to see an increase of 8%, oilseeds 12%, vegetables and permanent crops 15%, poultry 18%, sheep/goat 19%, beef 24%, pork 43%). Only milk prices should see a limited increase.</p>
<b>Study limitations</b>	<p>Yield impacts from the 50% reduction of the gross N balance (0%) and the 50% reduction in pesticide expenditure (-10%) may be underestimated. No change considered in food diet and waste</p>
<b>Authors' recommendations</b>	<p>The authors' recommendations mostly focus on the need to develop further tools and data collection to try to better assess the potential impacts of the F2F and BDS strategies. One can only wonder why this is not yet being done or why it is not directly part of the strategy.</p>

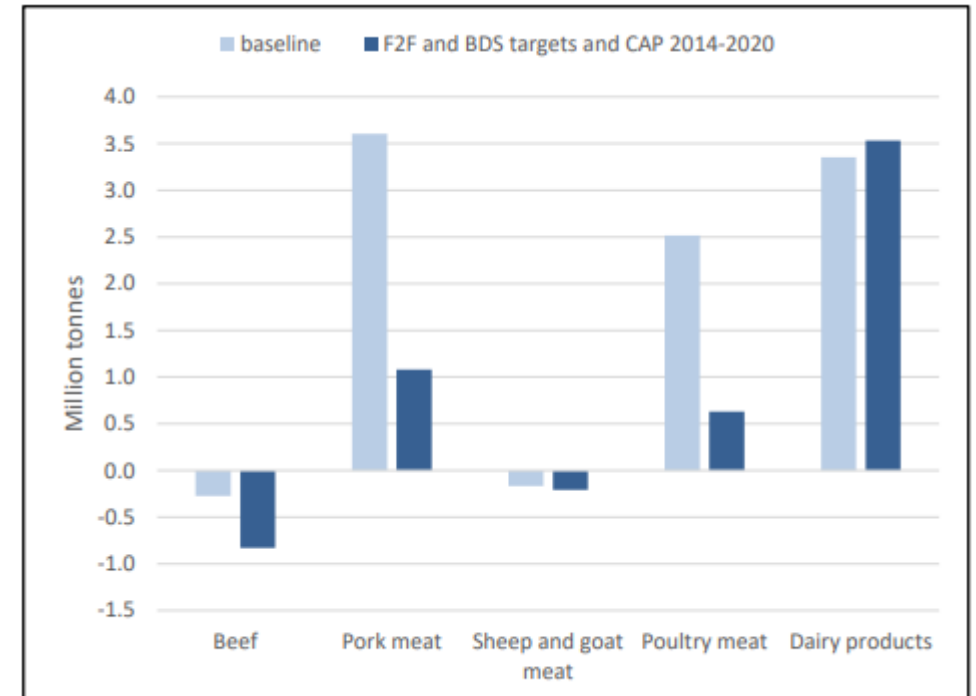
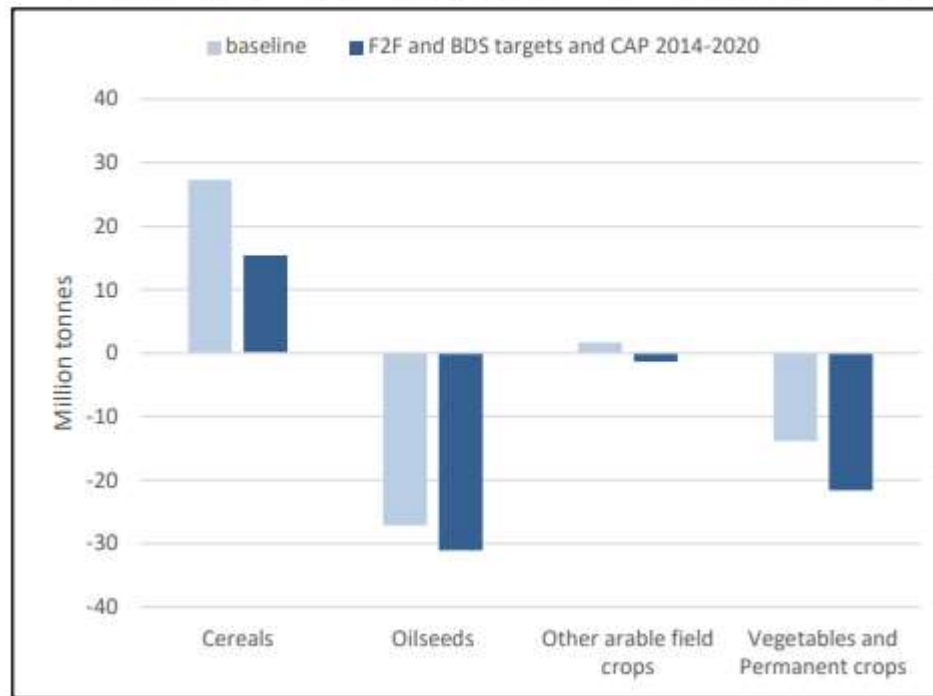






# III. KEY GRAPHS - JRC REPORT (12.05.21)

Figure 6. EU-27 net trade for crops (upper figure) and livestock products (lower figure) in both baseline and F2F and BDS targets and CAP 2014-2020 scenario in 2030





# III. KEY GRAPHS - JRC REPORT (12.05.21)

Figure 10. EU-27 area (ha) or animal number and supply changes in 2030 for the F2F and BDS targets & CAP LP and F2F and BDS targets & CAP LP + NGEU scenarios, relative to the baseline

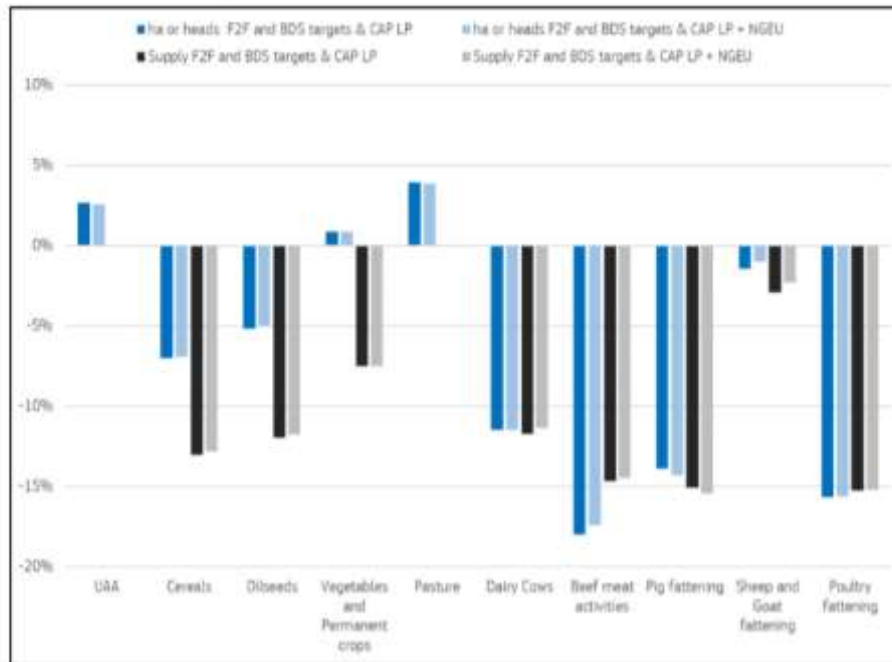
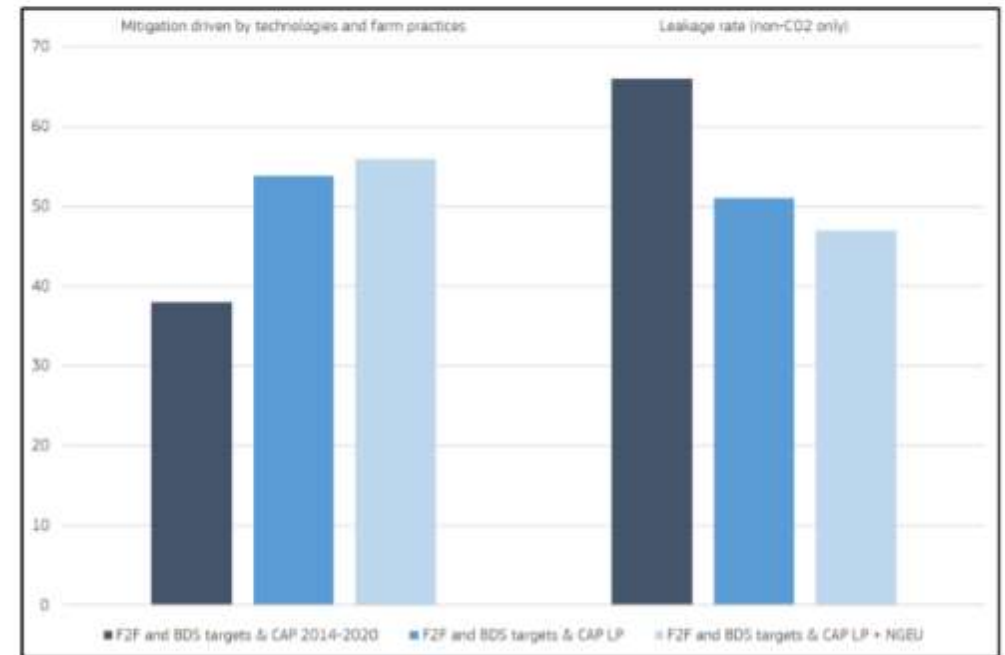


Figure 17. Share of total mitigation due to adoption of technology and farm practices and leakage of domestic mitigation to the rest of the world, under the F2F and BDS targets, CAP LP and CAP LP + NGEU scenarios (% of EU mitigation in 2030)





# V. THE GRAIN CLUB STUDY (09.09.21)

<b>Authors</b>	Prof. Dr. Dr. Christian Henning, Dr. Peter Witzke, MSc agr. Lea Panknin, Dr. Michael Grunenberg – Kiel University, Eurocare
<b>Analysed targets (5 main targets)</b>	<ol style="list-style-type: none"> <li>(1) Reduction of pesticide use by 50%</li> <li>(2) Reduction of the Nitrogen-balance surplus [nutrient losses] by 50%</li> <li>(3) Reduction of mineral fertiliser use by 20%</li> <li>(4) Share of organic farming of at least 25% of agricultural area</li> <li>(5) Share of high diversity landscape features of at least 10% of agricultural area</li> </ol>
<b>Model used</b>	Just like the official JRC study, the analysis was conducted based on <b>the CAPRI model and linked to an international trading model</b> . It also proposes a different testing approach, with scenarios such as a “(a) decrease of the domestic demand for meat products by 20%, (b) complete ban of soy imports into the EU, (c) decrease of China's economic growth, (d) integration of agriculture into the European CO2-permit trading system at 100 €/t CO2eq. and (e) assuming constant export and import prices for the EU.”
<b>Relevant specificities of the study</b>	The most interesting learning of this study is related to the expected GHG reduction. <b>Like the JRC study, this new report forecasts an EU-wide GHG emission reduction of -109 Mt CO2 eq (-29%) compared to the baseline scenario. However, the carbon leakage due to increased EU imports (+54 M t CO2 eq.) would offset half of this amount. Moreover, also taking account of the LULUCF effect in Europe (+50 Mt CO2 eq.), the overall effect of the F2F/BDS targets on the global GHG balance (-109+50+54 = -5 Mt CO2eq) appears negligible!</b>
<b>Authors' recommendations</b>	The F2F Strategy itself does not yet represent a consistent agricultural policy strategy. Individual F2F measures correspond to specific production restrictions, but they do not yet provide a consistent agricultural policy framework designed to achieve an effective and efficient implementation of the Green Deal's goals in agriculture. The report includes 4 recommendations: 1) consider the issue of carbon leakage 2) include LULUCF 3) review the approach by proposing an evidence-based approach 4) consider the social and fair sharing dimension of this policy for farmers and consumers.





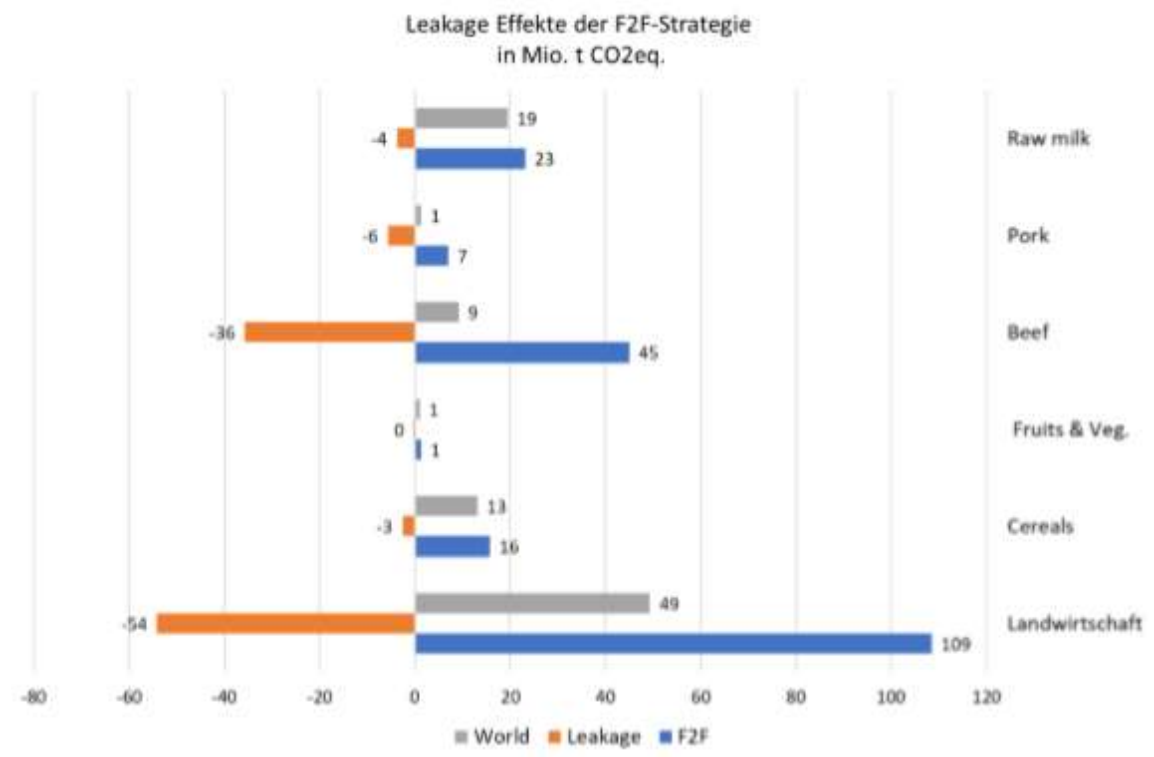
# V. THE GRAIN CLUB STUDY (09.09.21)

<p><b>Overall impact on production</b></p>	<p>The EU decrease in production is estimated at <b>-16% for agriculture as a whole, with -20% for beef, -17% in pork, -6.3% for milk, -21.4% for cereals and -20 % for oilseeds.</b> The number of animals would be even further reduced with a decline of <b>-45% for feeder cattle</b> and <b>-13.3% for milk cows</b> and young cattle.</p>
<p><b>Overall impact on farmers' incomes</b></p>	<p>Farmers' income is expected to increase by up to <b>+35 billion Euro.</b> As with the JRC, this study expects an increase in gross margins for animal products, especially milk, beef and pork, of <b>55 billion Euro in total</b> (24.5 billion Euro for milk, 6.5 billion Euro for beef and 24 billion Euro for other meat, especially pork). The gross margins for crop production are reduced by <b>-21.3 billion Euro</b>, with a reduction of <b>-5.8 billion Euro for cereals and oilseeds</b> and <b>-9.2 billion Euro for fruits &amp; vegetables</b> (including wine).</p>
<p><b>Overall impact on EU trade</b></p>	<p>If the F2F Strategy is implemented, the EU's positive trade balance for cereals, with net exports at <b>22 million tonnes, will turn negative, with net imports of 6.5 million tonnes.</b> Net <b>beef exports would drop from +22.5 thousand tonnes to a net import of -950 thousand tonnes.</b> Pork would drop from net exports of <b>+4.3 million tonnes to +1 million tonnes.</b> Milk exports would be reduced from <b>+5.9 million tonnes to +4.9 million tonnes,</b> while net imports of oilseeds would increase from <b>-17 to -22 million tonnes.</b> The net import of fruits &amp; vegetables would also increase from <b>-10 million to -22 million tonnes.</b></p>
<p><b>Overall impact on food prices</b></p>	<p>The implementation of the F2F Strategy is expected to lead to corresponding public adjustment costs of approximately <b>42 billion Euro.</b> The major share of adjustment costs would be financed by consumers with an estimated consumer welfare loss of <b>70 billion Euro equalling 157 Euro per capita.</b></p>





# V. KEY GRAPHS - GRAIN CLUB STUDY (09.09.21)





# VI. THE WAGENINGEN UNIVERSITY IMPACT ASSESSMENT – CROPS (PLANNED RELEASE 10.21)

<p><b>Analysed targets</b> <b>(4 main targets)</b></p>	<p>(1) 50% reduction of use of pesticides - 50% reduction of use of hazardous pesticides          (2) 20% reduction use of fertilisers - 50% reduction in nutrient losses          (3) 25% of areas cultivated under organic*          (4) 10% set aside</p> <p>*Grassland not included, since this also assumes an increase of organic livestock farming, which not within the scope.</p>
<p><b>Model used</b></p>	<p>The Wageningen impact assessment has a different approach to the previous studies. 25 in-depth case studies (10 crops, 7 countries across the EU) were executed by local experts and scaled up to macro level with the <b>AGMEMOD model (6 crops) or EDM-models (wine, olives, citrus, hops)</b>. 4 scenarios were examined to assess the overall impact on key crop productions. Scenario one considers the impact of a 50% reduction of use of pesticides and a 50% reduction of use hazardous pesticides. Scenario two examines a 20% reduction in the use of fertilizers and a 50% reduction in nutrient losses. Scenario 3 considers the impact of a 25% organic target. Scenario 4 considers the cumulative impact of scenario 1 + 2 coupled with the 10% set aside target.</p>
<p><b>Overall impact on production</b></p>	<p>See key graphs on the next slides</p>







# VI. KEY TABLES - THE WAGENINGEN UNIVERSITY IA – CROPS

## Summary of intermediate results Scenario 2: 50% reduction nutrients emission

	Finland	Poland	Germany	France	Spain	Italy	Romania	<u>Average</u>
Wheat								-10
<u>Rapeseed</u>								-11
Sugar beet								-9
Maize								-12
<u>Apples</u>								-20
Tomatoes								-10
Wine								-15
Olives								-15
Citrus								-18
Hops								-14







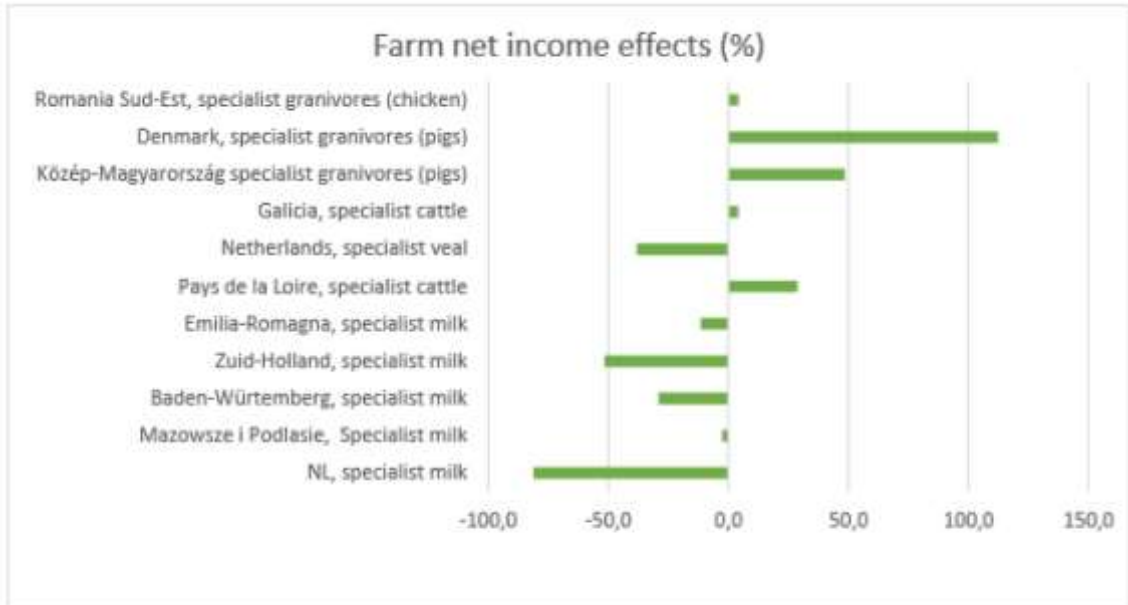
# VII. THE WAGENINGEN UNIVERSITY POLICY PAPER – LIVESTOCK (PLANNED RELEASE 10/21)

<b>Analysed targets</b>	<b>The purpose of a policy paper is not to make a direct analysis of targets but to compile existing knowledge.</b>
<b>Model used</b>	As a policy paper, this Wageningen policy paper compiles many of the conclusions of previous studies on the impact on the livestock sectors. This document therefore does not have a model for analysing the whole strategy. However, in <b>Chapter 4</b> the academics have attempted to apply the JRC model to the aspect of farmers' income and examine how sensitive it is to different parameters.
<b>Overall impact on production</b>	The F2F/BDS targets & the new CAP are expected to lead to an increase in land allocation by 2.6%, from previously abandoned land, but a decrease in animal production in order to improve the nitrogen balance. Consequently, the <b>meat supply is estimated to decrease by about 14% and the raw milk supply by 10%</b> by 2030 (JRC).
<b>Overall impact on farmers' incomes</b>	For producer prices the study shows a 10% increase, which is significantly higher for livestock products than for crop products and is caused by the decreasing animal herds and inelastic food demand. The study acknowledges the danger of increasing imports and the possible impact on prices. The price increases would translate to disproportionate positive impacts on total farm incomes.
<b>Overall impact on EU trade</b>	The changes in production would lead to a sharp decrease in net exports for pork and poultry, and a worse EU trade deficit for beef, sheep and goat meat. In dairy, the EU's export position would improve slightly (JRC).
<b>Relevant specificities of the study</b>	<b>The WUR policy paper proposes a relevant testing of the sensitivity of the CAPRI model and its modules by Wageningen University used within the JRC and Grain Club study. While these studies assume that livestock farmers' incomes would experience a positive evolution, the different sensitivity tests have shown that one could obtain greatly contrasting results in reality if a 15% price increase was applied to milk, beef and pork (see graph on the next slide).</b>

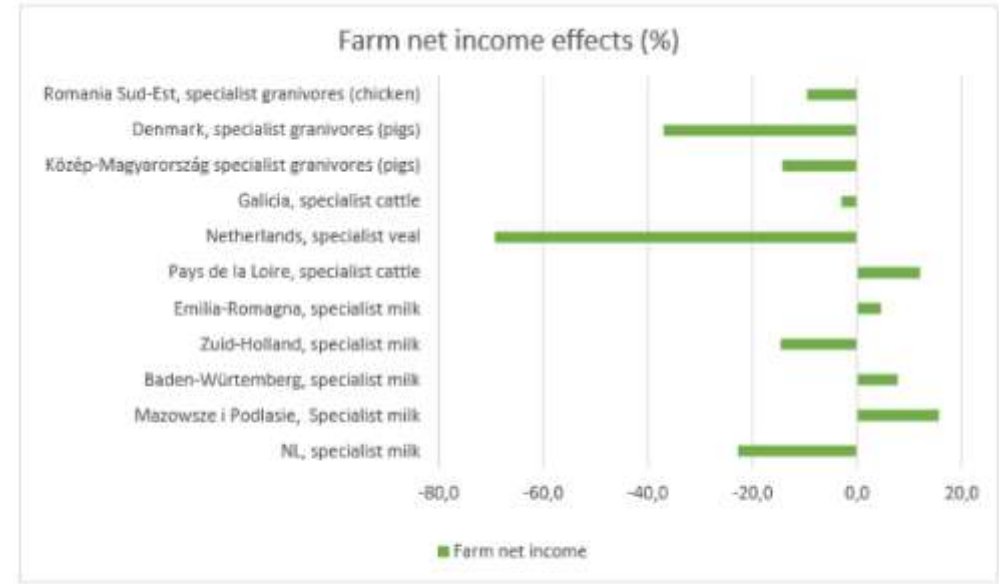




# VII. KEY GRAPHS - THE WAGENINGEN UNIVERSITY PP – LIVESTOCK



**Figure 4.2** Potential impacts of F2F and BD strategies on farm income (percentage changes) for selected farm cases



**Figure 4.3** Sensitivity analysis of potential impacts of F2F and BD strategies on farm income (percentage changes) for selected farm cases, assuming a 15% price increase for dairy, beef and pork.

A man with a beard, wearing a striped polo shirt and blue shorts, is smiling while riding a brown bull. The scene is set in a dry, open field under a clear, warm sky. The background shows some sparse vegetation and a distant horizon.

Thank you for your attention !

