

Costs of European environmental standards and additional regulations for German agriculture

A farm-level and sector-level analysis and aggregation

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Study commissioned by the German Farmers' Association (DBV)
and supported by the Landwirtschaftliche Rentenbank

- **Problem setting**

- The future of German agriculture and the further development of the Common Agricultural Policy (CAP) of the EU are in public debate.
- The principle “public funds for public services“ triggers this discussion.
 - In this context, environmental costs supposedly caused by the agricultural sector are often discussed.
- Not part of this discussion are costs associated with services of the sector to protect the environment and deliver societally benefits which often exceed requirements set by legal standards.

- **Objectives of the study**
 - **Comprehensive analysis** of the additional costs for German agriculture associated with environmental standards and additional regulations.
 - **Comparison of the situation** in Germany and important non-EU competitor countries.
 - Contribution to **objectivity** of the ongoing **public debate**.
 - A direct comparison of the costs of environmental standards and other regulations with the publicly debated environmental costs associated with agricultural activities is not an objective of this study.

- **Methodological approach: Using a dual concept and reliable data**
 - Comprehensive analysis of already available scientific information and data.
 - Extensive calculations and projections on two levels:
 - The entire agricultural sector;
 - Average agricultural farms.
 - Definition of costs to be associated with standards and regulations:
 - Additional production costs (caused by e.g. changing input use);
 - Lower market revenues (caused by e.g. reduced productivity).
 - Own calculations are rather conservative, cost effect is not over-estimated.
 - Only data derived from official statistics is used for aggregation purposes.
 - **Important:** Transparency of the data generation process and aggregation.

- **Methodological approach: Included standards and regulations**
 - Quantifiable standards and regulations:
 - a) EU Water Framework Directive;
 - b) New German Fertilizer Ordinance;
 - c) Additional legislation on plant protection (EU regulation 1107/2009 concerning the placing of plant protection products on the market);
 - d) Specific standards and regulations regarding livestock farming;
 - e) Additional bureaucracy and cross-compliance;
 - f) Greening;
 - g) Pending amendment of the German Technical Instruction on Air Quality.
 - Standards and regulations, whose costs are not calculated.

- **Methodological approach: Still excluded costs of standards and regulations:**
 - Examples of currently not quantifiable cost drivers:
 - Costs of a potential ban on various active ingredients of chemical plant protection;
 - Costs of currently debated additional animal welfare measures;
 - Costs of more crop diversification and a ban on plant protection measures in the realm of the Greening.
 - Examples of further not included aspects:
 - Social standards, e.g. costs regarding a minimum wage;
 - Non-remunerated agricultural services, e.g. in the context of preserving open landscape (willingness to pay amounts to several billion EUR).

- **Costs of the EU Water Framework Directive**

- Analysis of the following data and information:
 - Substantial analysis within a study on management planning of river basins in North Rhine-Westphalia;
 - Fundamental costs of water protection by agricultural businesses (primarily cross-compliance regulations concerning fertilizer and plant protection, storage sites etc.);
 - Contributions by farms (costs of cooperation and consultancy);
 - Ca. 134 million EUR in North Rhine-Westphalia (NRW).
- Extrapolation of these results for the overall sector:
 - Land use and fertilizer application in NRW are very similar to Germany;
 - Costs: ca. **92 EUR/ha** or **1.54 billion EUR** in total.

- **Costs of the new German Fertilizer Ordinance**

- Analysis of relevant data and information:

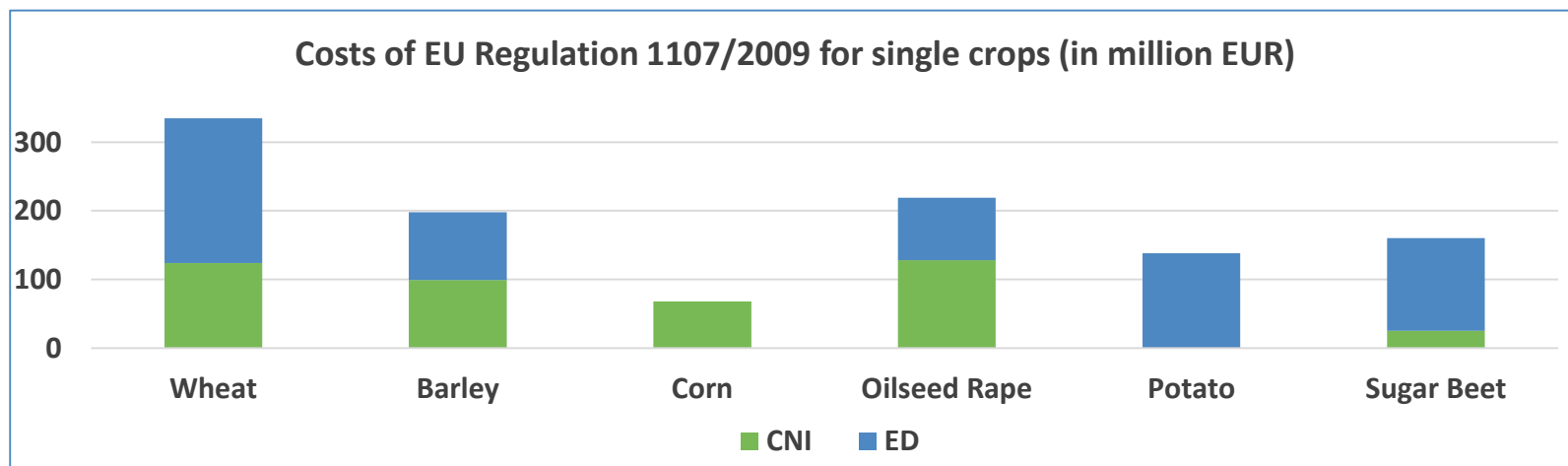
- Calculated compliance costs for the economy: 191.2 million EUR;
- Additional costs due to a low-loss and low-emission application of liquid fertilizers (0.34 – 3.36 EUR/m³): 245.2 million EUR;
- Additional leased farmland for application of excess N: 33.6 million EUR;
- N- and P-reduced feeding strategy: 22.5 million EUR.

- Extrapolation of these results for the overall sector:

- Costs: ca. **0.49 billion EUR** in total.

Crop	Additional costs	Crops	Additional costs
Wheat	21.68 EUR/ha	Oilseed rape	25.30 EUR/ha
Barley	21.68 EUR/ha	Potato	26.29 EUR/ha
Rye/Triticale	21.68 EUR/ha	Silage maize	62.50 EUR/ha
Corn/CCM Maize	55.75 EUR/ha	Other green fodder	28.30 – 47.60 EUR/ha

- Costs of additional legislation on plant protection (EU Regulation 1107/2009)
 - Analysis of relevant data and information:
 - Cumulative effect of the regulation's "cut off" criteria: 2.4 billion EUR;
 - It seems too pessimistic; we "only" analyze a ban on neonicotinoids (CNI) and active ingredients with endocrine effects (ED).
 - Extrapolation of these results for the overall sector:
 - Costs: ca. **1.12 billion EUR** in total.



- Costs of specific standards and regulations regarding livestock farming

- Analysis of relevant data and information:

- This study includes impacts of 16 directives and regulations;

- Milk: 5.61 EUR/t;

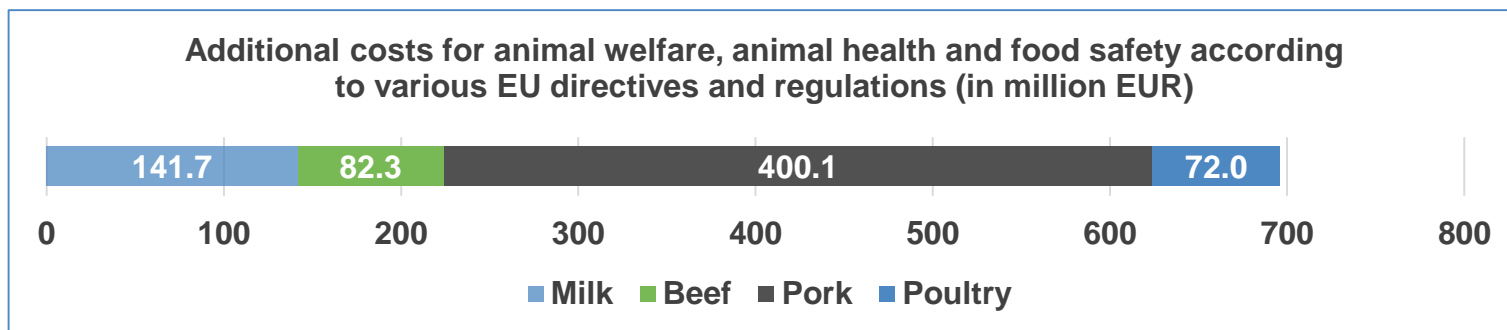
- Beef: 36.87 EUR/t slaughter weight;

- Pork meat: 71.68 EUR/t slaughter weight;

- Poultry meat: 47.15 EUR/t slaughter weight.

- Extrapolation of these results for the overall sector:

- Costs: ca. **0.70 billion EUR** in total.

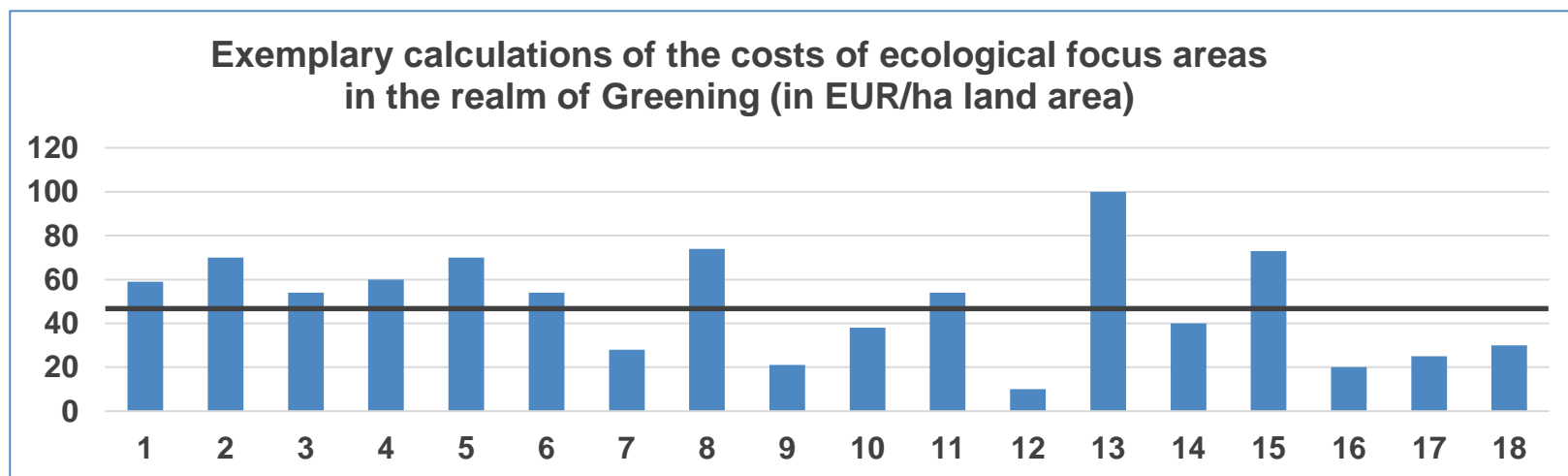


- Further costs for bureaucracy and Cross Compliance
 - Analysis of relevant data and information :
 - Many costs for Cross Compliance and bureaucracy are already included in previous calculations;
 - But not the costs of applying for EU direct payments;
 - These are on average ca. 14.93 EUR/ha;
 - Furthermore, costs for food safety: 1.21 EUR/t wheat.
 - Extrapolation of these results for the overall sector:
 - Costs of applying: ca. 250 million EUR;
 - Food safety (only wheat): ca. 8 million EUR;
 - Costs: ca. **0.26 billion EUR** in total.

- Greening Costs (I)

- Analysis of relevant data and information:

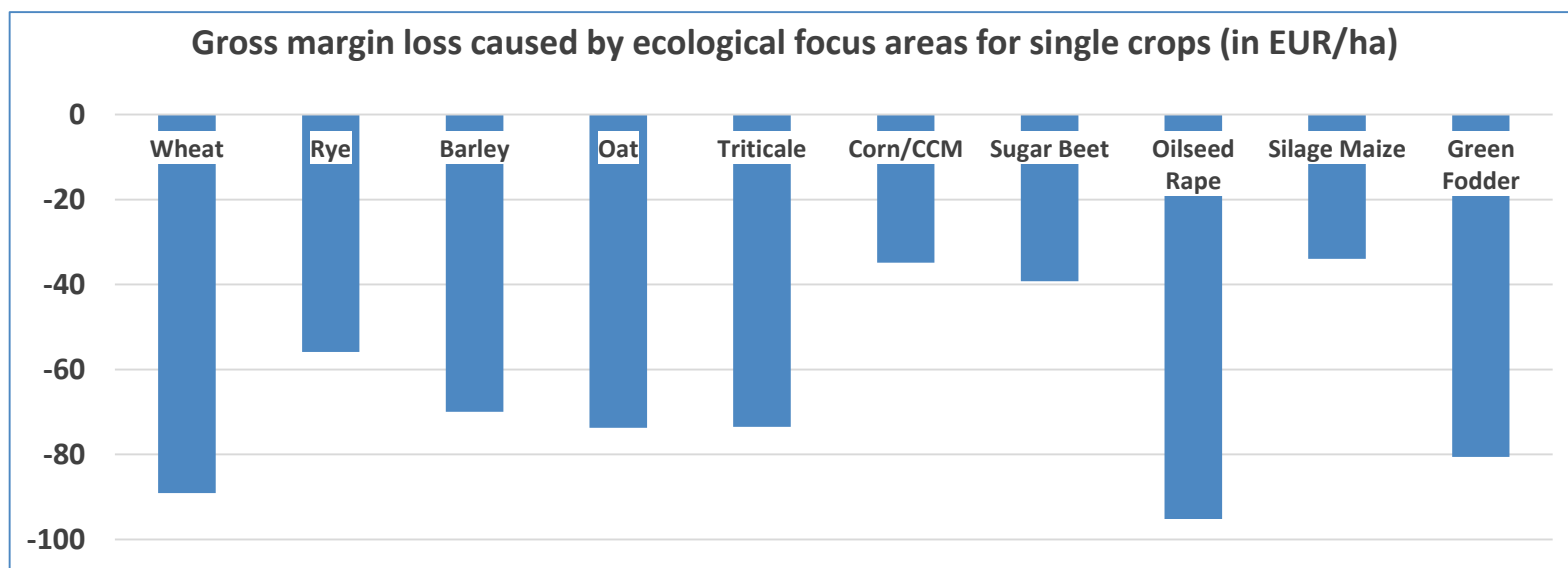
- Exemplary calculations of the costs of ecological focus areas are sufficiently available and allow calculation of average costs of 48.99 EUR/ha;



- Own calculations on the basis of actually applied ecological focus areas in 2016 result in an average gross margin loss of 49.87 EUR/ha.

- Greening Costs (II)

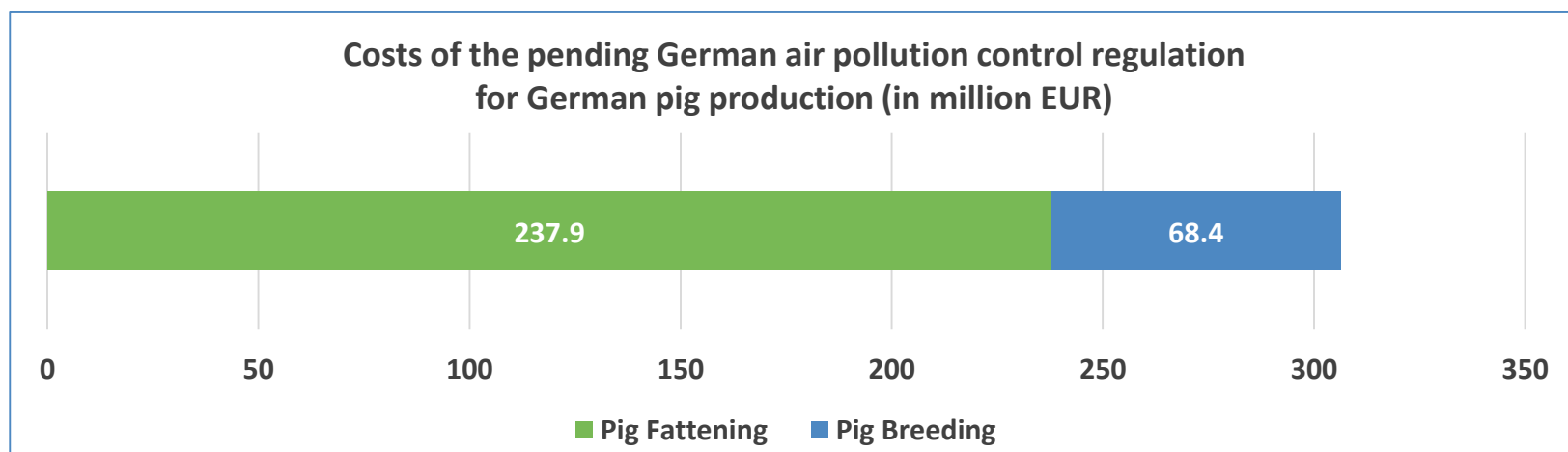
- Extrapolation of these results for the overall sector:



- Costs of ecological focus areas: ca. 835.6 million EUR;
- Additional costs of the ban on converting grassland to arable land:
31.2 million EUR;
- Costs: ca. **0.87 billion EUR** for the overall sector.

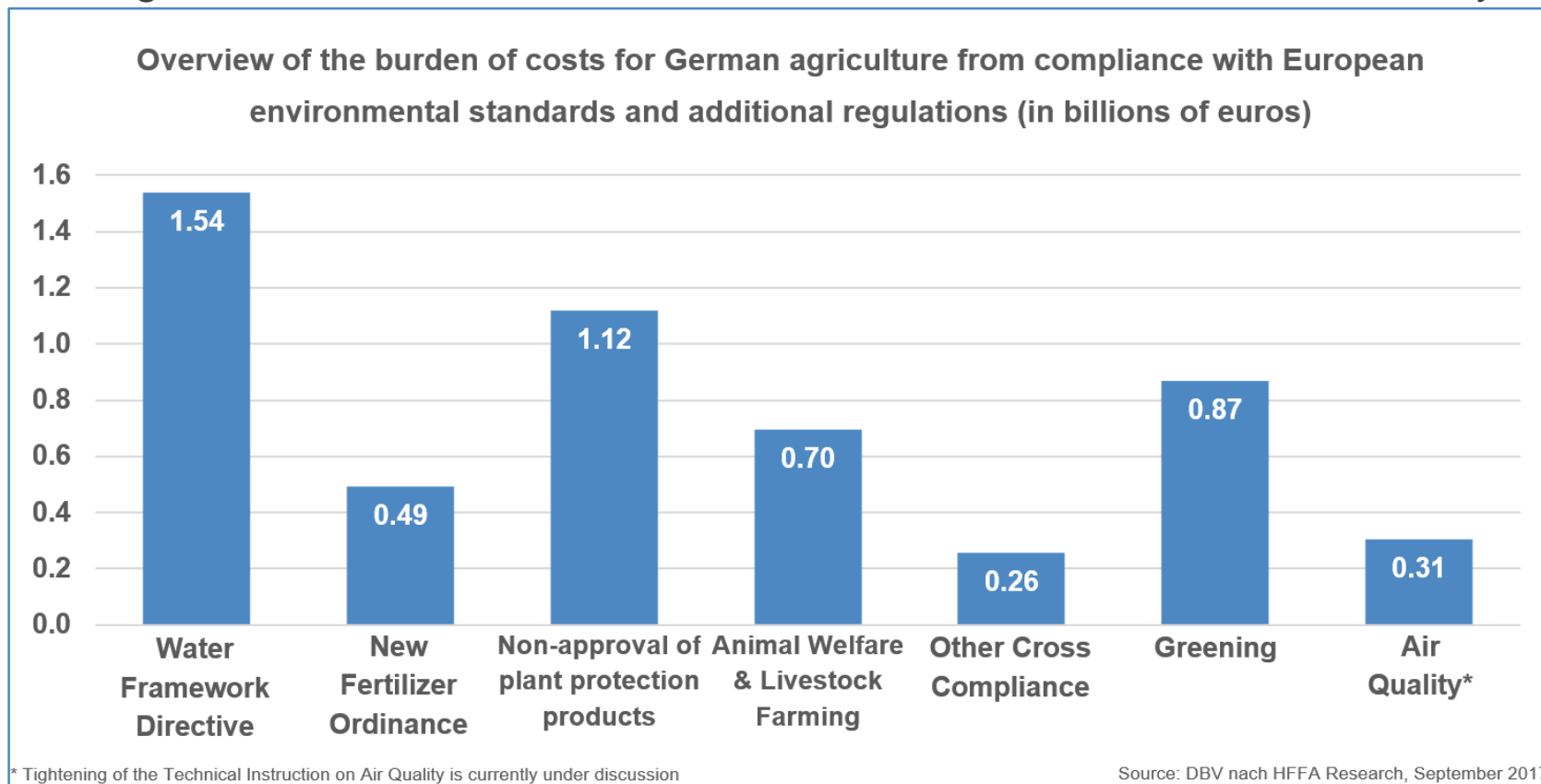
- **Costs of the pending German Technical Instruction on Air Quality**

- Analysis of relevant data and information :
 - Costs in pig fattening: 18 – 21 EUR/place;
 - Costs in pig breeding: 22 – 50 EUR/place;
 - Costs of cattle farming: Not quantifiable, but certainly very high.
- Extrapolation of these results for the overall sector:
 - Costs: ca. **0.31 billion EUR** in total (for pig production).



- Accumulated costs of the herein included standards and regulations

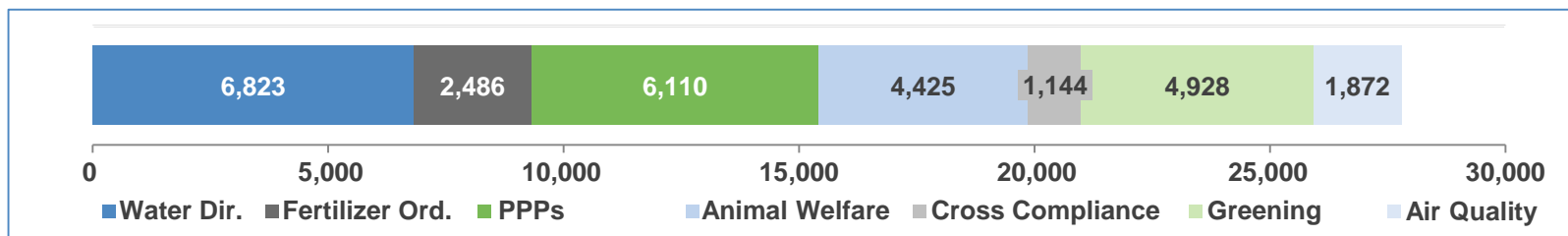
- While avoiding double counting, costs for all included environmental standards and regulations amount to **over 5.2 billion EUR** or **315 EUR/ha** in Germany.



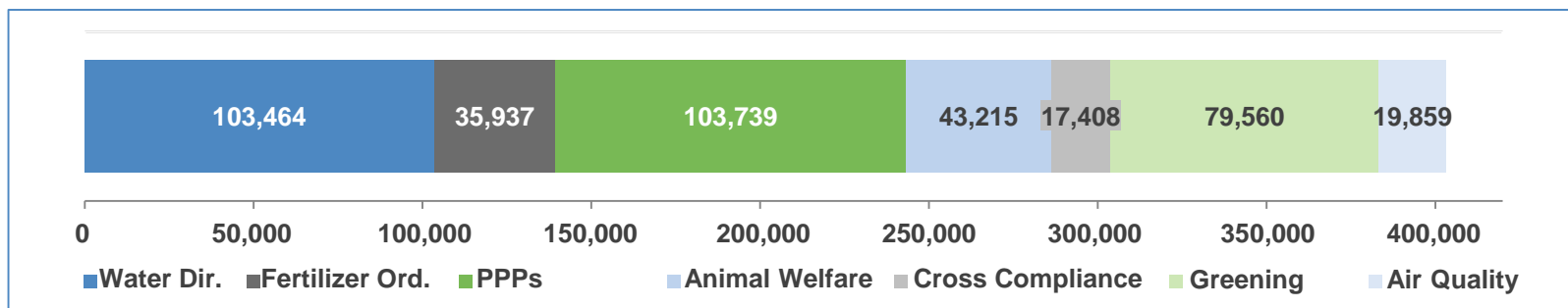
Costs of agricultural standards and regulations

- Aggregated costs for average farms

- According to the German farm accountancy data network, a full-time family farm should anticipate costs of 28,000 EUR per year or 367 EUR/ha.



- A corporate entity is burdened with over 400,000 EUR per year or 356 EUR/ha.



- A full-time family farm producing milk/beef has costs of 278 EUR/ha.

- Comparison of the situation in Germany with non-EU competitor countries (I)

- Due to limited available data, this analysis is built upon case studies from scientific and expert literature.
- It becomes possible to determine the cost differences in selected competitor countries as regards standards associated with the water framework directive, animal husbandry and food safety:

Product	Costs for Germany	Costs for competitor A	Costs for competitor B
Milk (EUR/t)	6.26	1.94 (AUS)	2.63 (NZL)
Beef (EUR/t slaughter weight)	70.99	7.10 (ARG)	101.52 (BRA)
Pork meat (EUR/t slaughter weight)	154.16	41.62 (BRA)	0.69 (USA)
Poultry meat (EUR/t slaughter weight)	26.90	0.57 (BRA)	0.00 (THA)
Wheat (EUR/t)	4.26	0.03 (CAN)	0.68 (UKR)

- Comparison of the situation in Germany with non-EU competitor countries (II)
 - Other case studies also display significantly lower costs for the compliance with country-specific standards in competitor countries:
 - Regulatory costs of cattle farming in Germany: 182 EUR/livestock unit; corresponding costs in Australia: 29 – 61 EUR.

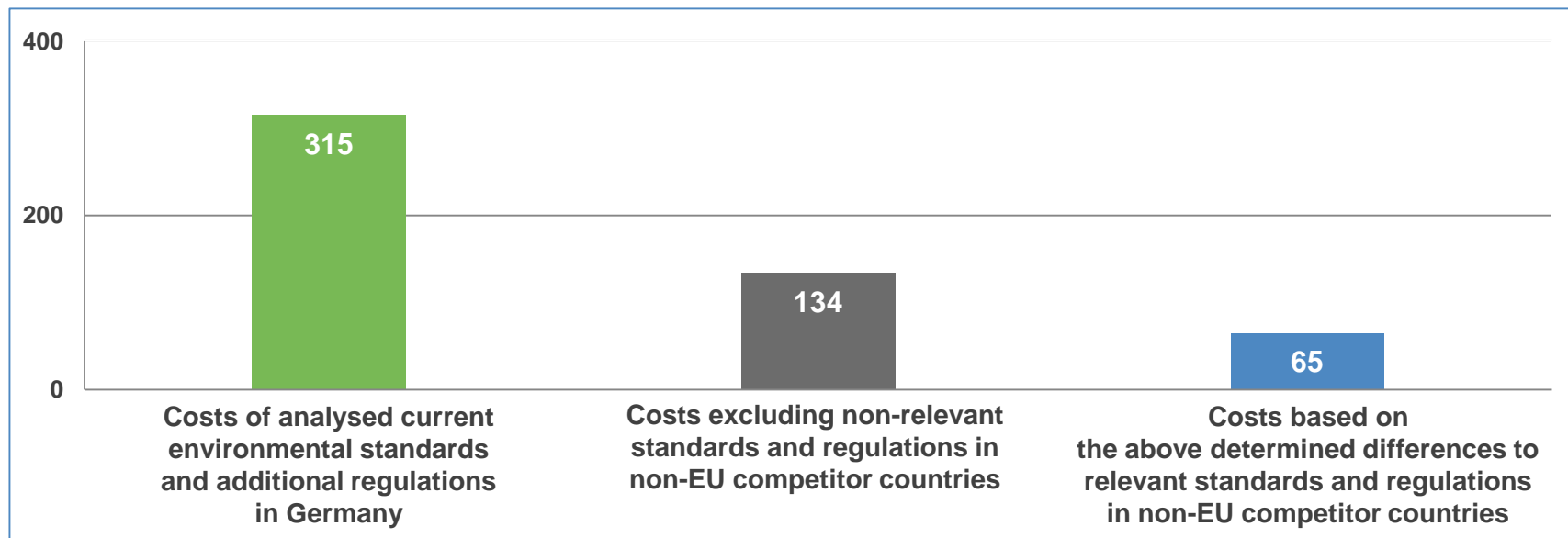


- Standard-related costs of poultry production in Germany: 19 ct/kg live weight; corresponding costs for non-EU competitors: 9 – 15 ct.

- Comparison of the situation in Germany with non-EU competitor countries (III)
 - These **case studies** lead to the conclusion
 - (a) that comparable standards are weaker outside the EU and
 - (b) that their compliance costs are lower than in Germany.
 - Further **considerations** support this conclusion:
 - For Germany costs for seven standards/regulations were calculated above;
 - Some of these costs are not existent outside the EU or Germany:
 - Costs of the new German Fertilizer Regulation: 493 million EUR;
 - Costs of EU regulation 1107/2009: 1.118 million EUR;
 - Greening costs: 867 million EUR;
 - Costs of pending German Air Quality regulation: 306 million EUR;
 - Costs of the application for EU direct payments: 250 million EUR.

- Comparison of the situation in Germany with non-EU competitor countries (IV)
 - The findings can be condensed:
 - The **costs for German farmers** associated with environmental standards and regulations amount to a **minimum of 5.2 billion EUR**;
 - In non-EU countries more than 3.0 billion EUR of these costs do not occur, because various specific standards or regulations are inexistent.
 - The costs in non-EU competitor countries for the remaining and (in the context of this study) comparable standards are (significantly) lower.
 - In other words: If for German farmers:
 - (a) only those standards of non-EU competitors were relevant and if
 - (b) these standards caused the same amount of costs as in competitor countries, the burden on Germany's agriculture would be much lower.

- Summary on the comparison between Germany and non-EU competitors
 - Costs associated with standards and regulations in Germany: 315 EUR/ha.
 - Costs for German farmers minus the costs associated with standards and regulations inexistent in non-EU competitor countries: 134 EUR/ha.
 - Burden on German farmers when considering cost differences of the remaining and comparable standards in non-EU competitor countries: 65 EUR/ha.



- **Conclusions:**

- The costs of complying with standards and regulations for German agriculture are a considerable burden in comparison with non-EU competitors.
- This leads to significant disadvantages regarding income and competition.
- In particular, it is important to note that such compliances require considerable and continuous investments, which are not sufficiently internalized by markets.
- Therefore, this cost burden (especially when comparing internationally) must be part of the upcoming discussion on the CAP.
- Specifically, one must note that farmers consider **theses** standards and regulations as an expression of societal preferences and therefore help to follow and carry them.

Costs of agricultural standards and regulations

- Information and material on the study:

*Costs of European environmental standards
and additional regulations for German agriculture:
A farm-level and sector-level analysis and aggregation*

can be accessed through this link:

www.bauernverband.de/studie-kosten-landwirtschaft