

Project *brief*

Thünen Institute of Market Analysis

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Transformation of a livestock intensive region

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- **The economy and employment in the region in northwest Germany with the highest density of pigs have grown strongly between 2007 and 2019. However, this happens at the expense of ecological and economic resources.**
- **If livestock farming were severely restricted, the potential for employment growth would be reduced but still high in most districts in the region.**
- **Where livestock farming has dominated so far, there could even be compensatory growth in other industries if the economic situation remains positive.**
- **For this to happen, stakeholders need to move away from a strong focus on stabilising the livestock and meat value chain in favour of transformative strategies.**

The livestock and meat industry contributes significantly to economic growth in north-west Germany. However, observers assume that its sectoral growth will be limited by scarce resources and a stronger regulation of livestock density as well as other aspects of production in the future. Against this background, the ReTiKo project has investigated the economic consequences of a reduction in livestock density for the regional economy.

Background

The case region studied consists of the nine districts in Lower Saxony and North Rhine-Westphalia with the highest pig densities in Germany. They are highest in the two case districts of Cloppenburg and Vechta. The extended case region of the quantitative analysis includes seven further neighbouring districts with also very high livestock densities.¹

The spatial concentration of livestock and meat production is partly due to the advantages of the proximity of livestock production and slaughterhouses. It is further driven by the increasing advantages of large production units and increasingly specialised local labour markets.

In the district of Cloppenburg, 19 percent of all employees worked in the agricultural and food industry in 2019. In the 16 case districts, the figure was seven per cent in total. In the 220 non-metropolitan "reference districts" in western Germany, the figure was only 3.7 per cent. In Cloppenburg, in addition to the service sector, the manufacturing industry apart from the food industry is relatively weak. In the districts of Warendorf and Emsland, however, it is mainly the scale- and innovation-intensive "complex" manufacturing industry and the service sector that contribute to employment growth.

Between 2007 and 2019, the number of employed persons in the reference districts increased by 12.3 percent, while in the Lower Saxony and North Rhine-Westphalia case districts it increased by 24.4 and 14.8 percent, respectively. The strong

growth also leads to land and labour scarcity. In Vechta and Cloppenburg, the purchase prices for agricultural land in 2019 were more than twice as high as the Lower Saxony average. In the North Rhine-Westphalian case districts, there were only 0.6 skilled workers registered as unemployed for every vacancy reported by the meat processing industry in 2019.

Study approach

In the quantitative part of the project, panel regressions are used to determine the relationships between the various industries and their employment developments between 2007 and 2019 separately for 16 case and 220 reference districts. The identified coefficients of the case and reference regimes are then used to simulate the potential development with and without a permanent halving of the agricultural sector for two further periods of 12 years each. A comparison of the scenarios shows the possible effects of a corresponding exogenous shock. However, regional development cannot be predicted with certainty. In the qualitative part of the project, interviews were therefore conducted with regional experts and stakeholders on the various strategies for further development in and outside the value chain of the livestock and meat industry. These strategies influence the further development after a possible exogenous shock.

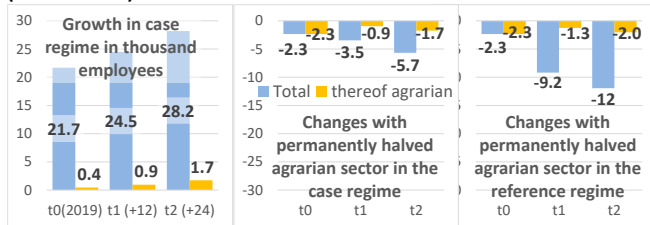
Results of the quantitative scenario analysis

According to the simulation, the number of employees in an average case district continues to grow even if employment in the agricultural sector is permanently halved, other things being equal. This is because other industries are also growing strongly in the case districts. However, since these no longer receive positive impulses from the growth of the livestock sector, the overall employment growth decreases significantly more than in the agricultural sector alone.

¹ Lower Saxony case districts: Vechta, Cloppenburg, Osnabrück, Emsland, Grafschaft Bentheim; Randkreise: Oldenburg, Diepholz, Minden-Lübbecke

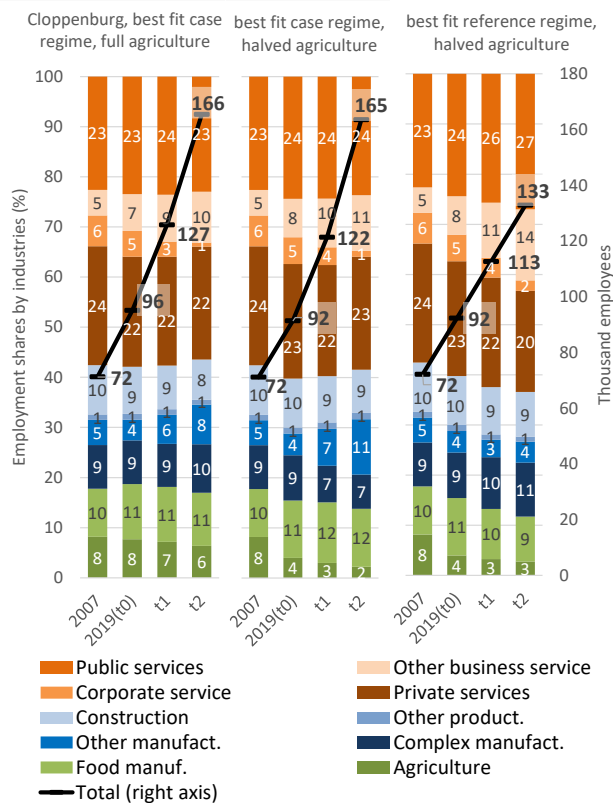
North Rhine-Westphalia case districts: Coesfeld, Borken, Warendorf, Steinfurt; Randkreise: Gütersloh, Paderborn, Soest, Kleve

Development of the number of employees in the average case district (in thousands)



Contrary to what is assumed by input-output analyses, there are not only positive but also negative interactions between the industries in the case districts due to the limited land and labour market reserves. As a result, especially in districts with a particularly dynamic livestock industry, such as Cloppenburg, the shrinkage of the agricultural sector is at least partially compensated for by increased growth in "other manufacturing". Thus, the production sector remains strong in the case regime. However, it cannot be ruled out that districts will slip into the less high-growth reference regime, which would also result in a decrease in the importance of the producing sector.

Development of employment & industry structure by scenarios



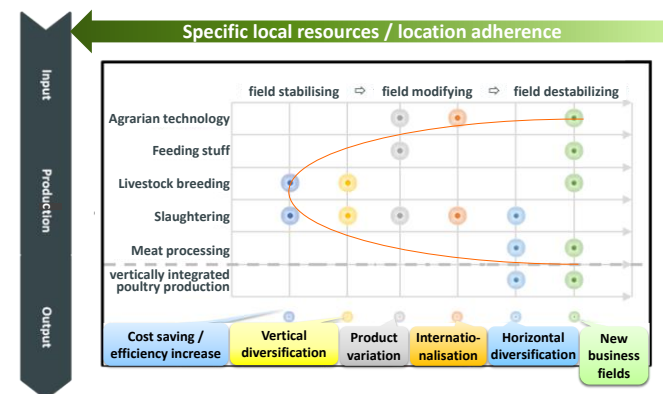
Results of the qualitative analysis

In order to preserve the positive interrelationships between the industries in the case regime even in the event of a reduction in livestock farming, it is important that the resources of the

livestock & meat value chain find new uses in the region. The interviews with experts and stakeholders have shown that the livestock and slaughter industry, with its high location commitment, relies more on field-stabilising strategies than companies in the upstream and downstream industries. Companies in the livestock and slaughter industry try to safeguard existing business models because it is difficult to profitably use their specific competences and capacities in other fields and at other locations.

The sometimes-large companies in agricultural technology and meat processing, for example, often have more alternatives. However, realising them can also mean destabilising their own current action field. We find that some of the stakeholders have the ability and also the willingness to do this. To what extent the new business areas, for example in the field of alternative proteins, will then be built up at the old location remains to be seen.

Strategies in the regional livestock & meat value chain



Conclusions

If the economic situation remains stable, livestock densities in the case region can be reduced without having to forego further growth. The less the economic and political stakeholders of the livestock and meat industry cling to old objectives despite signals to the contrary, the more likely the transformation is to succeed. If regional production capacities can be maintained locally through diversification, the growth of other industries can largely compensate for the decline of the livestock and meat industry.

If diversification at the location does not succeed, the specific endogenous location advantages may be lost and development departs from the old growth regime. In many case districts, growth then slows down more strongly and the production sector, which is important for the development of rural regions, loses ground.

Diversification and compensatory growth, however, depend on stable economic development even in the best of cases. The apparently inevitable structural transformation of the case region should therefore, if possible, be accelerated in a positive economic phase.

Further Information

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Publications

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