Project brief

Assessment of the ownership structures of agricultural land in Germany (EigLanD)

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- **The distribution of ownership of agricultural land is the subject of intense political debate, but there is as yet no statistical data on which to base this.**

- **We have developed a method for analysing the distribution of agricultural land ownership in a largely automated way from data in the official land register.**

- **The analysis of a nationwide sample of 59 municipalities shows that land ownership is distributed very differently among owner categories and individual owners.**

Background and objective

The distribution of ownership of agricultural land is increasingly the subject of political debate in Germany. The current Real Property Transaction Act provides that the purchase of agricultural land can be interdicted if this would lead to an "unhealthy distribution of land".

However, how land property is distributed in Germany is largely unexplored. Statistical recording does not take place because the practised documentation of land ownership in the land register prevents this. Owners are recorded with name, date of birth and postal address, but a unique personal identifier (such as the tax identification number) is missing. Since names and addresses might change over time, the data of the same owner of different plots of land often differ.

In the EigLanD project, we have analysed owner data of agricultural land in a nationwide sample of municipalities on behalf of the German Federal Ministry of Food and Agriculture, with regard to the following questions:

- How is agricultural land ownership distributed among different types of owners?
- What proportion of agricultural land is owned by the largest individual owners on site?

Approach

The owner data from the land register are provided in digital form in the Official Real Estate Cadastre Information System (ALKIS). The participating federal states (all except the City States) provided us with this data for a sample of 59 municipalities. We generated the sample randomly at two points in time, considering size (target: between 2,000 and 4,000 ha of agricultural land), spatial distribution and availability of data (no ongoing land consolidation).

We processed the ALKIS data using algorithms that identify identical persons from the owner data and aggregate the land ownership onto them (aggregation level 1 (Agg_1). In a further step, we summarized the land ownership of those owners who belong together economically in common households or with enterprises (Agg_2). Furthermore, we identified agricultural households and enterprises on the basis of the receipt of EU agricultural support.

Results

**Figure 1: Number of owners in ALKIS data and in aggregation level 1**
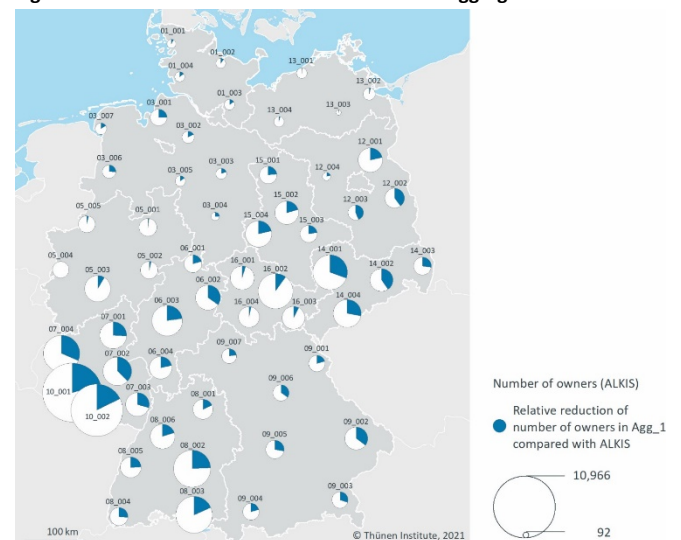
Source: Tietz et al. (2021). Figures on the map are sample numbers.

We have found that the owner data in ALKIS differ enormously in terms of fragmentation and completeness. The data sets comprise between 92 and 10,966 different owner entries per municipality. By using algorithms, we could reduce the number of owners in Agg_1 by an average of 12 % (Figure 1). In order to

identify economic togetherness in Agg_2, we need complete postal addresses; yet these are missing in nine sample municipalities. The data sets of 50 municipalities in Agg_2 contain between 71 and 3,255 economically related owners.

All statistical indicators show a very high variability within the sample of analysed municipalities. Natural persons are the dominant owner category, but in many East German municipalities, enterprises own a high percentage of land. Regional authorities and other corporations (such as Federal Republic, federal state, municipality or church) have a total share of 10.2 % of agricultural land on average, but depending on the municipality, their shares (between 1.7 % and 30.2 %) and the distribution among categories vary notably (Figure 2).

Figure 2: Percentages of land per owner category (Agg_1)
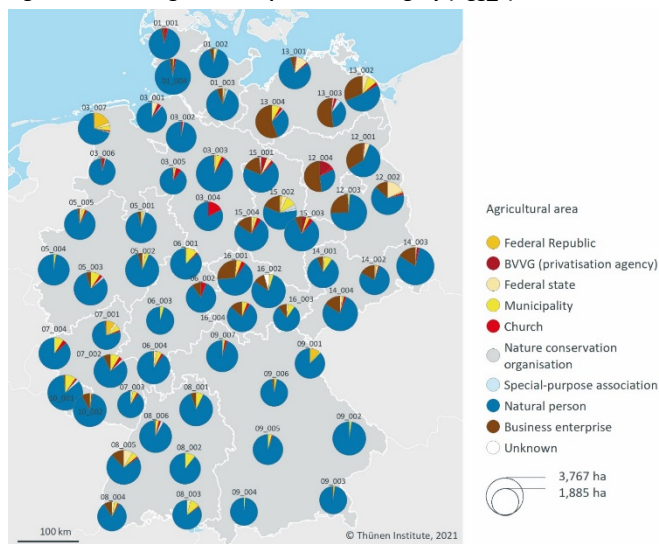
Source: Tietz et al. (2021).

In Agg_2, land ownership is distributed among the new category „agricultural household / enterprise" and non-agricultural natural persons and enterprises. Non-agricultural natural persons – which may also include former farmers – own 48.7 % on average (between 13.5 % and 70.9 % per municipality), agricultural households/enterprises own 39.7 % (between 17 % and 74.6 %) and non-agricultural enterprises own 1.4 % (between 0 % and 8.8 %) of the analysed agricultural land in the sample municipalities (Figure 3).

Figure 3: Percentages of land per owner category (Agg_2)
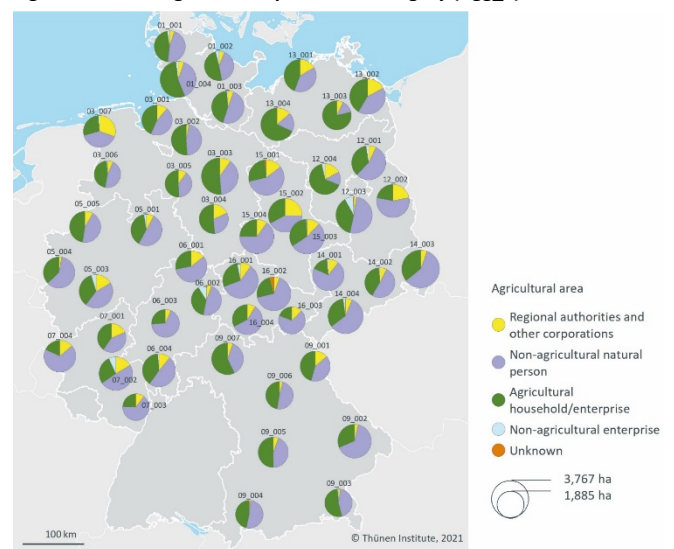
Source: Tietz et al. (2021).

On total average, 6.0 ha are allocated to each owner in Agg_2. However, agricultural land is very unevenly distributed among owners. 57.7 % of all owners belong to the size-class with less than 1 ha of agricultural land. On the other hand, only 1.9 % of owners have more than 50 ha of agricultural land.

With respect to the political debate, the land shares of the largest owners are of major importance. For this purpose, we calculated the concentration rates CR1 to CR5 of land ownership. The values of CR1 indicate that on average 9.8 % (between 2.1 % and 34.8 %) of agricultural land is allocated to the largest owner in each municipality. CR3 is on average 19.2 %, CR5 on average 25 %, with equally a high range of variation between municipalities.

Conclusion

We have achieved the most important goal of the EigLanD project: to develop a method for analysing the distribution of agricultural land ownership in a largely automated and accurate way from data in the official land register. However, the sample of 59 municipalities is too small for statistically reliable statements on ownership structures and differences between federal states and regions. In addition, there are still methodological problems regarding the treatment of joint ownership and economic togetherness, as well as the identification of agricultural holdings among land owners, which might be solved in the course of a larger investigation.