

Surveying the Regional Need for Land Consolidations from GIS Information in Finland

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SUMMARY

Finnish agricultural landscape has experienced fragmentation due to long-lasting structural change in the agricultural sector as well as historical reasons. On the other hand, multiple land consolidation projects have been completed throughout the country. Although previous studies on Finnish parcel structure and its development have been conducted, no conclusive study with fully comparable datasets to determine the change parameters has not been done before.

The aim of this study was to quantify how the Finnish agricultural parcel structure has changed over the period of 10 years, between 2010-2020. Different spatial analysis methods, including overlay analysis and map algebra were utilized over two datasets of all agricultural parcels in the country, one for each year. Individual parcels were considered, as well as larger parcels that combined the adjacent fields owned or rented by the same farmer.

The results show that the average parcel size has increased with 5 %. There was no significant difference in the growth rate whether individual parcels were considered or if adjacent holdings of the same owner were combined. During the same period, the average distance from the homestead to the parcel has increased by 19 %. In areas where land consolidation projects have been completed during the study period, the parcel size has increased on average by 27 %, while the average distance has grown by 11 %. Comparing the two datasets showed that 74 000 hectares of new fields were taken into use within the study period, while some 52 000 hectares worth of fields were taken off use. Around 37 % of fields are currently under

lease.

In conclusion, the average size of Finnish agricultural parcels is slowly growing, while the increase in farming distance shows that to increase farm size the farmers need to seek for new parcels further away from the homestead. The rates for land consolidation project areas show that land consolidation can be an both increase the parcel size growth rate and decrease the rate of distance growth. The results of this study can be utilized in land consolidation project planning, as well as a tool in focusing them on areas where they are most needed.

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