

# Evaluation of Land Fragmentation in Agricultural Areas: Farmers Perspective

Juhana Hiironen, Pauliina Krigsholm, Kirsikka Riekkinen, Karin Kolis and Arvo Vitikainen (Finland)

**Key words:** Land management; Land readjustment; Land Fragmentation; Property Structure; Land Consolidation

## SUMMARY

In Finland, the number of active farms has declined constantly since the beginning of 21st century. Simultaneously, the combined area of farmland has remained on its initial level and the average farm size has grown. This study examines how the change in average farm size has affected the average farm structure.

In this study, farms are divided into nine subgroups according to their respective sizes. This study measures the degree of land fragmentation with four instruments: the average number of parcels hold by a farm, the average size of the parcels, the average distance to farm buildings from the parcels, and Simmons fragmentation index. Data used in this study consists of the field plot information of Finland from the years 2000 and 2012.

This study shows that larger farms occupy, on average, larger parcels but the average size of the parcels has declined in all nine farm size groups. Moreover, the number of parcels hold by a farm has increased in every group. Also the Simmons fragmentation index, which expresses the relationship between number of parcels and the relative size of the parcels, indicates that farm structure in Finland has become weaker. The average overall distance from the farm to the parcels has increased between years 2000 and 2012, due to the increasing farm size. Within different farm size groups the average distance from one parcel to the farm has not changed significantly during the same period. Noteworthy, the average distance from parcel to farm becomes higher as the farm size increases. This indicates that expanding farms are required to acquire new arable land from further distances.

Land fragmentation causes a lot of problems, with the most obvious ones being the increasing production costs and greenhouse gas emissions. Due to land fragmentation the farm industry is not

increasing its profitability, even though the industry is going through a major rationalization phase. The problems caused by land fragmentation could be mitigated through land management activities, especially through farmland consolidation.

---

Evaluation of Land Fragmentation in Agricultural Areas: Farmers Perspective (7939)  
Juhana Hiironen, Pauliina Krigsholm, Kirsikka Riekkinen, Karin Kolis and Arvo Vitikainen (Finland)

FIG Working Week 2016  
Recovery from Disaster  
Christchurch, New Zealand, May 2–6, 2016