The Effectivity of Land Consolidation in Finland

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SUMMARY

In the last two decades land consolidations in Finland have been concentrated in agricultural areas. The main goal of the projects has been reduction of the agricultural cost. Key figures when assessing the impact of a land consolidation project are parcel size and distance to the farmhouse. In winter 2015–2016 NLS Finland director Timo Potka did a comprehensive study about the development of land consolidations in Finland. The study was commissioned by the Ministry of Agriculture and Forestry. The study included a detailed survey of the 17 areas in which land consolidation was carried out between 10 and 20 years ago, four areas where land consolidation was done roughly 100 years ago and four areas where land consolidation was not implemented although the possibility was surveyed 15 years ago. The study found out that the structure of the parcels in these areas did not deteriorate. The average parcel size increased slightly in the years following land consolidation. A similar development was observed in areas where land consolidation was not implemented. Therefore the doubling of the average parcel size in land consolidations could be seen as a long term effect. The distance between farmhouse and parcel was observed to have increased slightly through the years. The main reason for this is the enlargement of the average Finnish farm.

In his report Timo Potka proposed several improvements to land consolidation activity in Finland. Many of these proposals are now being implemented.

SUMMARY IN FINNISH


Selvitysraportissaan Timo Potka esitti useita erilaisia parannuksia tilusjärjestelytoimintaan Suomessa. Monia näistä ehdotuksista ollaan nyt toteuttamassa.
1. BACKGROUND

In the last two centuries, land consolidation procedures in Finland have evolved from large scale Basic Land Consolidations aimed at the consolidation of all land in a rural village to restricted land consolidation procedures aimed at the consolidation of agricultural land only in a somewhat modestly sized area. As in old times, the reduction of agricultural costs remains the first goal of land consolidations and it has become even more important in recent years. Due to the rough and moist climate of Finland, drainage works have been a crucial part of land consolidations in this country.

The last two decades have seen the fastest developments and modernisation of land consolidations in Finland. A semi-automated survey planning platform called Jako2 was introduced in the year 2003. Unified cost-benefit tools came in 2009. National Surveys concerning the need of land consolidations in Finland were done to agricultural, forestry and to water parcels respectively in 2012, 2006 and 2013. Also several smaller improvements increased the efficiency of land consolidations. For example, an automatic letter mailing system was introduced to all cadastral surveys in 2008 and small improvements to the process of land consolidation are done almost yearly.

Land consolidations in Finland have been subsidised by government since the 1970s. Payments by land owners have covered only a part of the total expenses of the project. Earlier cadastral fee, agricultural roads and drainage works have all received government money from 40 to 80 percent of the total cost. Demands for reduction of government spending in Finland have reached land consolidations in recent years. For example, in 2016, the total government funding of drainage works and building of agricultural roads in land consolidations was 3 million euros, when only few years earlier it was 7.5 million euros. This kind of decrease in funding poses a threat to the survival of land consolidation activities in Finland. How could ongoing projects be completed? How could new projects be implemented effectively when funding for them would be uncertain?

In Finland there is a tradition to appoint an official government investigator (in Finnish: selvitysmsies) to solve or gather information about difficult questions. For example, the last two years have seen government appointed investigators concerning healthcare organisation, medical cost savings and student allowances. In October 2015, the Ministry of Agriculture and Forestry (MAF) appointed Timo Potka, the director of Land Consolidations at the National Land Survey (NLS), to investigate the development of land consolidations in Finland. In its appointing letter MAF raised some questions and arguments about land consolidations. Key arguments and questions were:
1) Difficulties of synchronisation on national legislation and EU-legislation in state subsidies to Land Consolidations.

2) Increase of crofting of fields in Finland and difficulties that this presents to land consolidations.

3) Argument that land consolidations do not provide a long term solution to parcel fragmentation.

4) Need to cut costs and bureaucracy in all government activities.

5) How to improve parcel structure more with less government spending?

In October 2015 at the National Land Survey assembled several work groups to survey background information to investigators report. The survey included 120 personal and email interviews of land owners, municipal chiefs of agriculture, cadastral surveyors, and officials of other agencies and representatives of land owners associations. Also several foreign land consolidation specialist from the EUregion were interviewed via email. The parcel structure of 21 areas which had experienced land consolidation and four that had not were surveyed and compared.

Director Timo Potka handed in the investigation report to the Ministry of Agriculture and Forestry on 31 March 2016. This article includes some of the findings of that report.

2. CROFTING AND LAND CONSOLIDATIONS

2.1 Crofting in Finland

In Finland there is a long tradition of crofting of agricultural land. During the 1600s and 1700s the king of Sweden would often grant ownerships of vast areas of Finland to noblemen distinguished in war or in the administrative duties of the kingdom. Noblemen seldom worked in the fields themselves. Their lands were cultivated by crofters or hired hands. Although free peasantry survived in Finland, there were large areas in southern Finland where crofting was major way to cultivate fields. During the 1800s there were several restrictions to the partitioning of estates. With an improvement in living conditions and a population increase, this led to an increase of crofting.

One of the reasons for the bloody Finnish Civil war of 1918 was the so called crofter problem. Although crofters were liberated in the years between 1918 and 1945 and they could purchase land they had leased with cheap government loans, the memory of 1918 has affected the Finnish crofting legislation. For example, the Finnish Crofter’s Act of 1966 (259/1966) restricted crofting time of agricultural land to 10 years. Crofting was seen as socially dangerous and there was a wish to avoid a reoccurrence of the events of 1918. Legislation was mitigated in 2010 and the restriction limit was increased to 20 years. After 1918, crofting decreased steadily in Finland and during the 1980s there was a low point when only 12 percent of cultivated land was leased (Potka page 39).
In the late 1980s the lease of agricultural land increased and after Finland joined to EU in 1995 it continued to increase until 2005. One major reason for increased area of leased cultivated land was the structural development of Finnish agriculture. The average farm size in Finland has grown by approx. one hectare each year since 1995, reaching 45 hectares in 2015. During the 2010s the amount of leased agricultural land has remained roughly at the same level of 34% of cultivated land (Pässi, p. 12, Potka, p. 39).

2.2 Crofting and Land Consolidations

One problem with leased cultivated field parcels is their size. Leased parcels tend to be smaller than average (Sulonen, p.14). Parcel size explains the economical result of agricultural production (Myyrä, p. 42) and main goal of land consolidations in Finland is to decrease agricultural costs and so to improve the profitability of agriculture. An important way to do this is to increase the size of parcels. Because leased parcels are small, the biggest economical gains through land consolidations could be reached with leased parcels.

Often the start of land consolidation proceedings also starts the sale of cultivated land to active farmers. Landowners that participated in land consolidation were asked did they sell their leased land during the project. Depending on province 23–40 % answered that they did sell (Sulonen p.31).

Interviews of landowners showed that the merging of earlier leased parcels and leaseholders’ own parcels is very rare event in land consolidation. Reasons for this were difficulties of exchanging a leased parcel next to leaseholder’s own parcel in land consolidation plan, short durations of lease contracts, missing approval of landlord and costs of a merger. One
interviewed municipal agricultural chief told that: “Merging of cultivated parcels is very difficult with contracts and voluntary means. We have been doing crofting and contracts a long time and they haven’t impacted positively on the parcel structure.” Also, it seems that in areas were parcel structure is good crofting and contract work do not deteriorate it. (Potka, p. 39-40)

In practice, the management of leases by verdict in a land consolidation project is not common event. Finnish land consolidation legislation organises leases automatically. Old leases follow the exchanged parcels. Normally the benefits of farmers and landlords both are tended to in land consolidation. (Potka, p.40)

3. EFFECTIVITY OF THE FINNISH LAND CONSOLIDATIONS

3.1 Development of Land Consolidations

Production volume of land consolidations in Finland have remained roughly the same in recent years. Between 2002 and 2014 production has varied from 6,700 hectares in 2002 to 10,800 in 2009. In same time number of people working with Land Consolidation have declined. When in 2003 land consolidations took 64 man-years, in year 2015 they took only 36. (Potka, p. 45)

![Chart 2. Production of Land Consolidations in hectares per man-years put to Land Consolidations between years 2002 to 2014 (Potka, p.45).](chart)

There are several reasons for this increase in productivity. Legislation was reshaped in 1997 when Real Estate Formation Act came into force. Development of the semi-automated land consolidation planning program Jako2 in year 2003 reduced planning work to less than half of what it had been earlier. All these played a part, but the most important reason of the production increase was the development and reshaping of the land consolidation process. Earlier land consolidations were more oriented towards the completion of cadastral map and cadastral information than parcel readjustment. In the first decade of the new millennium
emphasis was put on essential improvements and on work that had real impact on the outcome of the project. Mapping, new boundary markers, drainage and road works were concentrated in areas, which were important to the achievement of a better parcel structure.

Before the year 2007 in Finland, all land owners in the project area of a land consolidation procedure were eligible for funding for drainage and road works through land consolidation. This way, large areas where exchanges of parcels did not occur received funding if the area was fortunate enough to be included in a project area. This changed in 2007, when strict criteria for funding of drainage and road works were introduced. Now only parcels that were newly formed in a land consolidation procedure could get funding for subterranean drainage. The size of tubing of main drainage was limited to 25 mm and other drainage and road works were limited to only those areas on which land exchanges occurred and where the works were important for achieving land consolidations goals. As you can see from Chart 3, the costs of drainage and road works decreased rapidly.

![Chart 3. Costs of drainage and road works per hectare of exchanged land (blue) and per hectare of cultivated area in land consolidations project area (red) by land consolidations finalisation date. (Potka, p.55)](chart3.png)

### 3.2 Effects to Parcel Structure

Long term studies about the effects of land consolidation on parcel structure are hard to find. MAF raised the question that effects might be short term and not so long lasting as was supposed earlier. Because of this, NLS surveyed long term effects of land consolidations on parcel structure in 25 areas. Of these, 17 areas were such that land consolidation was completed between 1996 and 2003. Four areas were such that land consolidation was never implemented, although possibility was studied 15 years ago, and four areas were such that land consolidation was completed 100 to 120 years ago. Information was gathered from old
survey maps, aerial photographs and the agricultural administrations information system (IACS). Number of farms, cultivated area, leased area, number of parcels and average parcel size was surveyed. The effects of farming distance from farmhouse to parcel by road was also surveyed. In older areas this proved too difficult, because the information available on older survey maps was incomplete.

From Chart 4 you can see that parcel structure has not deteriorated in areas where land consolidation was completed roughly 15 years ago. In only one area, Sievi Jokikylä, the average parcel size has decreased slightly in recent years. In all other areas, average parcel size has increased and in all areas combined the average parcel size has grown by 6%. (Potka p.51-52)

Investigation of older land consolidations showed that over 100 years have not much changed how cultivated parcels lay in the Finnish countryside (Chart 5). The First World War, Civil War, the Second World War, the collapse of the Soviet Union and Finland’s EU membership have not much changed average parcel size, which has remained almost the same in Laihia and Vöyri and has grown only a little in Vaasa and Kaustinen after land consolidation was completed over 100 years ago.

In 2012 NLS Finland surveyed parcel structure and opportunities for land consolidation in all cultivated areas in Finland. One factor of study was the average size of natural parcels, ergo average parcel size that could be reached if only nature would limit the size of a parcel. The survey was done by municipalities. It was found that the natural parcel size in Vöyri was 13.9,
Vaasa 10.1, Kaustinen 9.3 and in Laihia 15.7 hectares (Hiironen, p. 70, 75). Although the old land consolidations areas surveyed in 2015 did not include all cultivated area in those municipalities as the survey in 2012 did, you could argue that possibilities for a much faster increase of the average parcel size were present in the last 100 years by nature, but not in Finnish society.

![Chart 5](image)

**Chart 5.** Average parcel size right after land consolidation and in year 2015 in four areas which land consolidation was completed 100 to 120 years ago. (Potka, p. 52)

In four surveyed areas that no land consolidation was implemented, the average parcel size had slightly increased from 2.22 hectares to 2.38 hectares. In light of NLS surveys you could say that land consolidation doubles the parcel size of a cultivated area. In recent history free markets have not managed to reach such performance as land consolidations in the structural development of cultivated land in Finland. You could say that it takes free markets at least 150–200 years to make similar improvement to parcel structure as land consolidation. (Potka p. 53–54)

From Chart 6 you can see the effect of land consolidation compared to areas where it was not done. Last 15 years increase of parcel size is very similar regardless of areas current situation. Average parcel size have increased 6–7%. The survey proved that MAF’s belief that the effect of land consolidations on parcel structure might be short term was groundless. At least in surveyed areas the parcel structure remained the same on even improved from the situation right after land consolidation.

While the average parcel size has remained the same or increased after land consolidations, the average distance from farmhouse to parcel has increased in all surveyed areas (Potka p. 53). Therefore you could say that distance is not as stable a variable as parcel size.

Undoubtedly the enlargement of the average Finnish farm has played major part causing farming distance to grow.
INVESTIGATORS PROPOSALS

In his report Timo Potka proposed several different actions that NLS and MAF should take to improve the efficiency of land consolidations in Finland. The first action proposed was improving the knowledge concerning land consolidations. Especially the knowledge of land consolidations in the agricultural and forestry sector must be improved. Also, land consolidations should be integrated into the National Rural Development Program. In recent years land consolidations have remained very land surveyor driven and unattached to rural development. This proposal led to action when NLS established a team to promote knowledge of land consolidations and to participate in the planning of the next rural development program. (Potka p. 78-79)

Traditionally, benefits of land consolidations have been calculated through agricultural cost savings. Other impacts have been forgotten. Timo Potka proposed that social effects of land consolidations should be researched. This proposal led also immediate action when NLS organised project group to survey this in year 2017. (Potka p. 78)

The funding of land consolidations has been in turbulence in Finland. Timo Potka proposed many improvements to clarify funding of land consolidations. Currently drainage works and ditching are supported by two separate funding systems, one for land consolidations and one
for general drainage works. Potka proposed a combination of these two funding systems. (Potka p. 83)

Land Consolidation normally promotes the enlargement of active farms. Timo Potka proposed that this structural development should be supported more vigorously in land consolidations and in general and means to this should be examined. This could be achieved, for example, by more active land banking, taxation relief of agricultural land purchase and promotion of long term leases of agricultural land. In September 2016 these propositions have not yet led any actions in Finland. (Potka p. 82)

Timo Potka also proposed several smaller improvements to land consolidations. Active follow-up, faster start and implementation, simplified traffic of payments, improvements to legislation and funding more suited for EU regulations were proposed to make land consolidations in Finland more efficient. Many of these proposals are now in active preparation at the National Land Survey of Finland. (Potka p. 78-84)

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BIOGRAPHICAL NOTES

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