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**The Consolidation of  
Farms in Six Countries  
of Western Europe**



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## LAND FRAGMENTATION AND MEASURES OF CONSOLIDATION IN FINLAND

JUDGED by area of cultivated land, most farms in Finland are small. Before the loss of territory by the Peace Treaty of 1940 there were only 740 farms with 100 hectares or more of arable land each, most of them located in the three southern provinces. About 70 per cent. of the arable land was in farms with less than <sup>25</sup>10 hectares each. Since the war, about 60,000 new agricultural holdings have been created for refugees from the ceded areas and for certain other persons, the number of large holdings has been reduced to about 120, and the cultivated area of small holdings (those under 10 hectares) has increased to nearly 40 per cent. of the total cultivated area.

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The present state of land distribution in Finland is the result of a lengthy development. The old rules and laws of the Swedish régime have influenced the conditions in the greater part of the country. The principle of inheritance, based on the equal rights of children, except that (before 1879) daughters should inherit only half as much as sons, has prevailed from the earliest times, but it has been modified by the custom of giving up the entire holding to one of the sons as compensation for being willing to support his parents in their old age, while the other heirs receive their shares only if the value of the property exceeds the costs of this support.

The various laws forbidding, or hampering, the splitting up of taxable units had their influence on development, until, from about 1750, all limitations were gradually removed. Until the beginning of the present century, new small farms sprang up in most cases on the vast surplus land that had belonged to the Crown since 1542, or as tenant holdings on private land. Those subordinated tenant holdings were turned into independent farms by legislation passed in 1918. After that the increase in the number of farms has been determined, in the absence of statutory limitations, partly by economic conditions and partly by a colonization policy, which had created some 26,000 new agricultural holdings by 1939.

The open-field system spread to the south-western parts of the country from the fourteenth century onwards and was promoted by legislation aiming at more equal taxation. According to the most

## ERRATUM

Vol. I, No 4. Page 15, first paragraph, line 5. After the words 'in farms' insert 'with less than 25 hectares of arable land and one third was in farms'

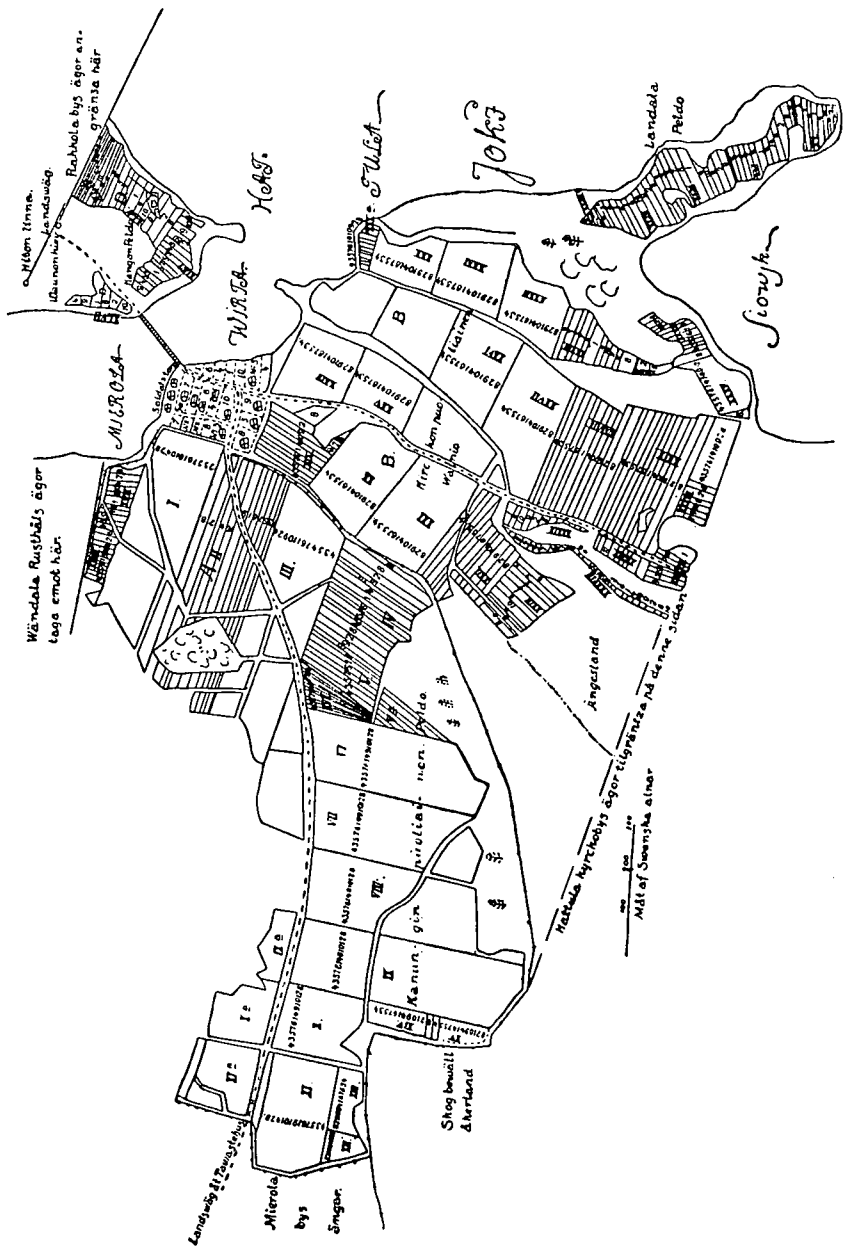


FIG. 1. Open-field system in Hattula parish about 1750 (Jutikkala)

common system, the arable land of a village was divided into two fields, and every holding received its share in the form of narrow strips (see Fig. 1). Woodland and natural meadows were held in common. This system hampered the rational cultivation of fields and contributed to the scattering of holdings in great numbers of pieces. It did not find its way to the eastern parts of the country, however, where burned-over culture was the practice, and there were some areas in the west too which evaded this system.

After the conclusion of the Great Northern War (1721) new ideas of land division, originating in the main from England, were propagated in Sweden, and gained the approval of leading men. Because Finland was badly devastated and efficient means of raising its economic life were needed, it was here that the idea of land consolidation was first realized. According to a law passed in 1757 consolidation of fields was to be put into execution if demanded by only one of the owners of village land. The same year the first act of consolidation, called the Great Partition (F. *isojako*), was undertaken in Ostrobothnia. These activities continued, though with some amendments to the laws, until by about 1920, 18.3 million hectares had been consolidated according to the Great Partition laws (see Chart 1). These figures include woodlands, which were divided between holdings, according to their cadastral unit value.

The consolidation associated with Great Partition was, however, unsatisfactory in several cases as the number of shares often remained rather high and there were difficulties in making settlements. A new statute was therefore passed in 1848, which permitted the carrying out of a re-allocation ('New Partition', F. *uusjako*). According to this all kinds of land were to be treated at the same time, the maximum number of parcels was fixed at six (instead of ten), and the moving of the farmsteads was made obligatory. This statute was rather ineffective, however, since the re-allocation was carried out only if none of the landowners opposed it. According to a new statute in 1916 re-allocation could be effected on the proposal of a single landowner, provided the surveyor responsible considered the necessary prerequisites existed.

Re-allocation has been carried out on an area of about 2 million hectares (see Chart 2), and a couple of interesting investigations have been published on its effects.

*Dr. Sarvi* (Ref. 1) studied the effects of re-allocation in two Ostrobothnian parishes (Laihia and Jurva) and ascertained that the

average number of parcels per holding had diminished from 26 to 3.7 and from 30.6 to 3.3 respectively in these parishes. The average area of a parcel had increased from 6.4 to 34.6 hectares in the former, and from 3.2 to 25.2 hectares in the latter. Typical of Ostrobothnian conditions was the grouping of parcels into home and outlying parcels; the average distance from farmstead to home parcels was reduced as a result of consolidation from 3.1 kilometres to 0.7 kilometres, while in the case of the outer parcels the decrease was from 25.2 to 18.7 kilometres.

*Dr. Wiiala* (Ref. 2) investigated re-allocation in a parish on the southern coast (Pyhtää) and discovered that the average number of parcels per farm had decreased from 8.4 to 3.3, while the average area per parcel increased from 2.1 to 5.9 hectares. The average distance from farmstead to field had been reduced from 1.45 to 0.65 kilometres (see Figs. 2 and 3).

There are still wide areas in which the parcels are very inconveniently scattered, as the Great Partition was effected there a very long time ago and no re-allocation has been carried out since.

*Dr. Wirri* (Ref. 3) gives an interesting example from a parish on the Kokemäki river. Quite small farms are to be found there fragmented to as many as twenty parcels with an average distance to the fields of about 2 kilometres, which means that the farmer has to walk 97 kilometres if he is to visit all his fields from the farmstead (see Fig. 4).

*Dr. Suomela* (Ref. 4) has studied the influence of the location of fields on economic results in farming. He gives a survey of the location of fields in 330 farms employing book-keeping, and in 1,297 'representative' farms. Table 1 shows the average number of field lots and the average distance from the farmsteads to the fields in farms of various sizes (according to the area of arable land) in different parts of Finland. Though some of the figures are based on very little material, they are generally characteristic of the varying conditions.

The figures show that fields are most favourably located in southern and central Finland, while Ostrobothnia especially has very unfavourable conditions. The average distance from homestead to fields, on the basis of this investigation, is estimated for the whole country as being from 1 to 1.1 kilometre.

*Dr. Suomela* has further grouped the farms into three classes, according to whether the location of their fields was good, fair, or poor. The basis taken was the actual distance to the fields compared with the 'normal' distance, which varied with different farm sizes.



FIG. 2. A village in Pyhtää parish before reallocation. Farmsteads are marked with circles (Wiiala)



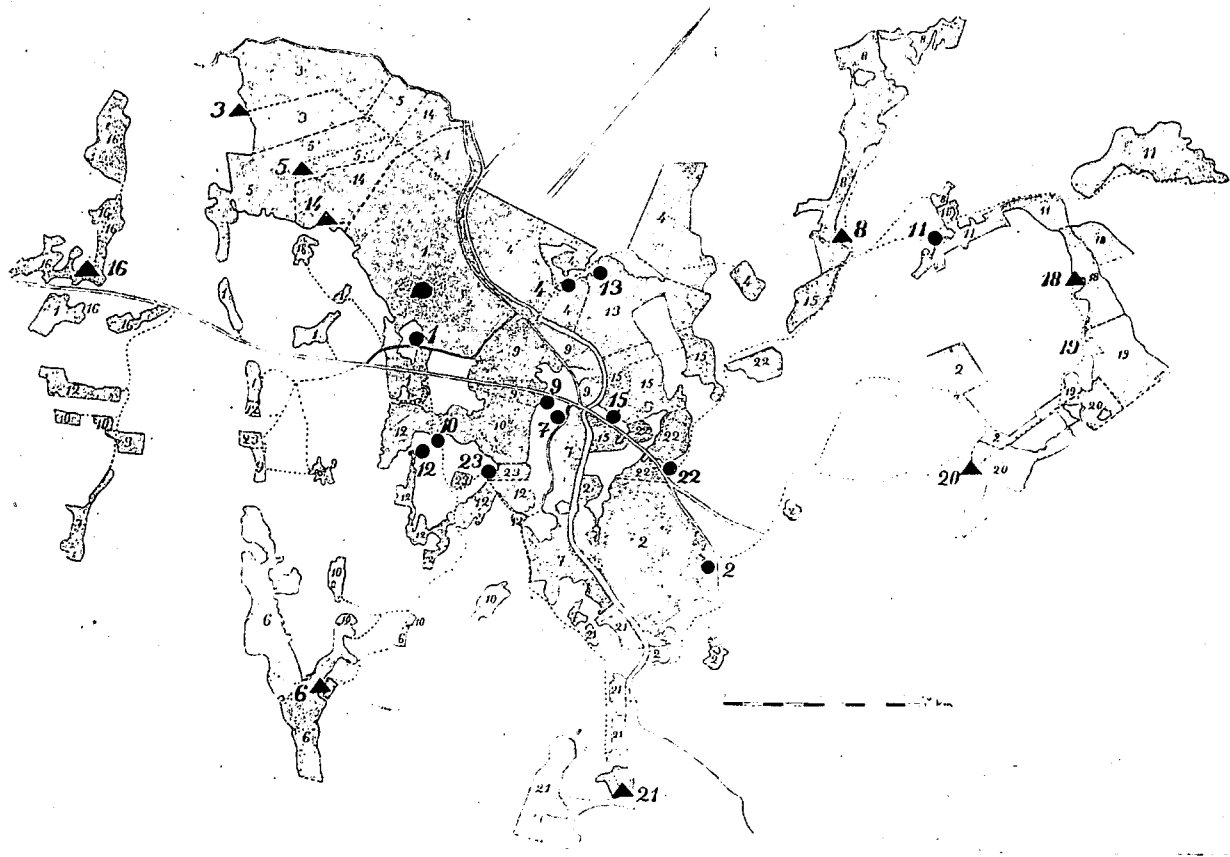


FIG. 3. The same village as in Fig. 2, after reallocation. Farmsteads which have been moved are marked with triangles (Wiiala)

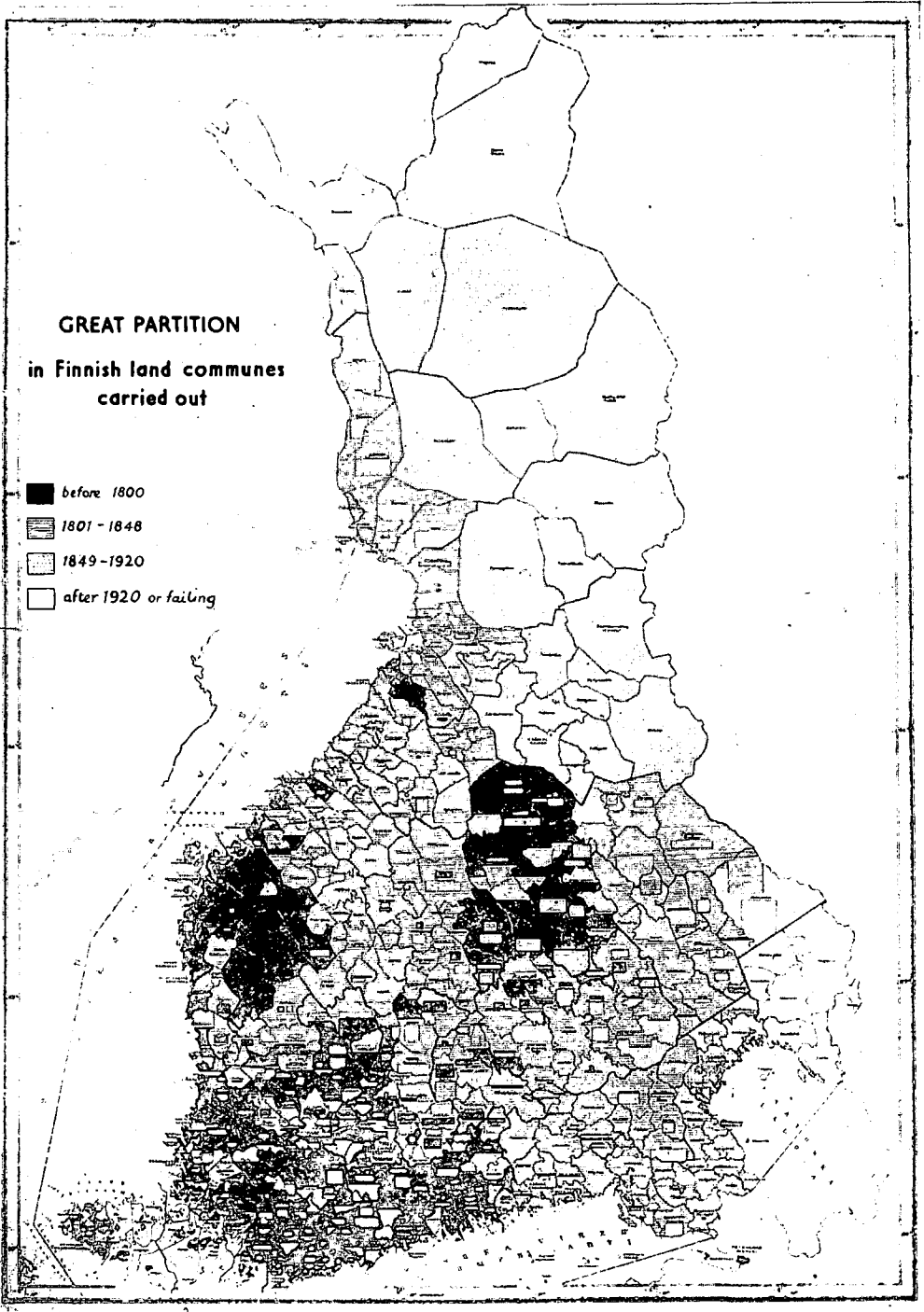


CHART I

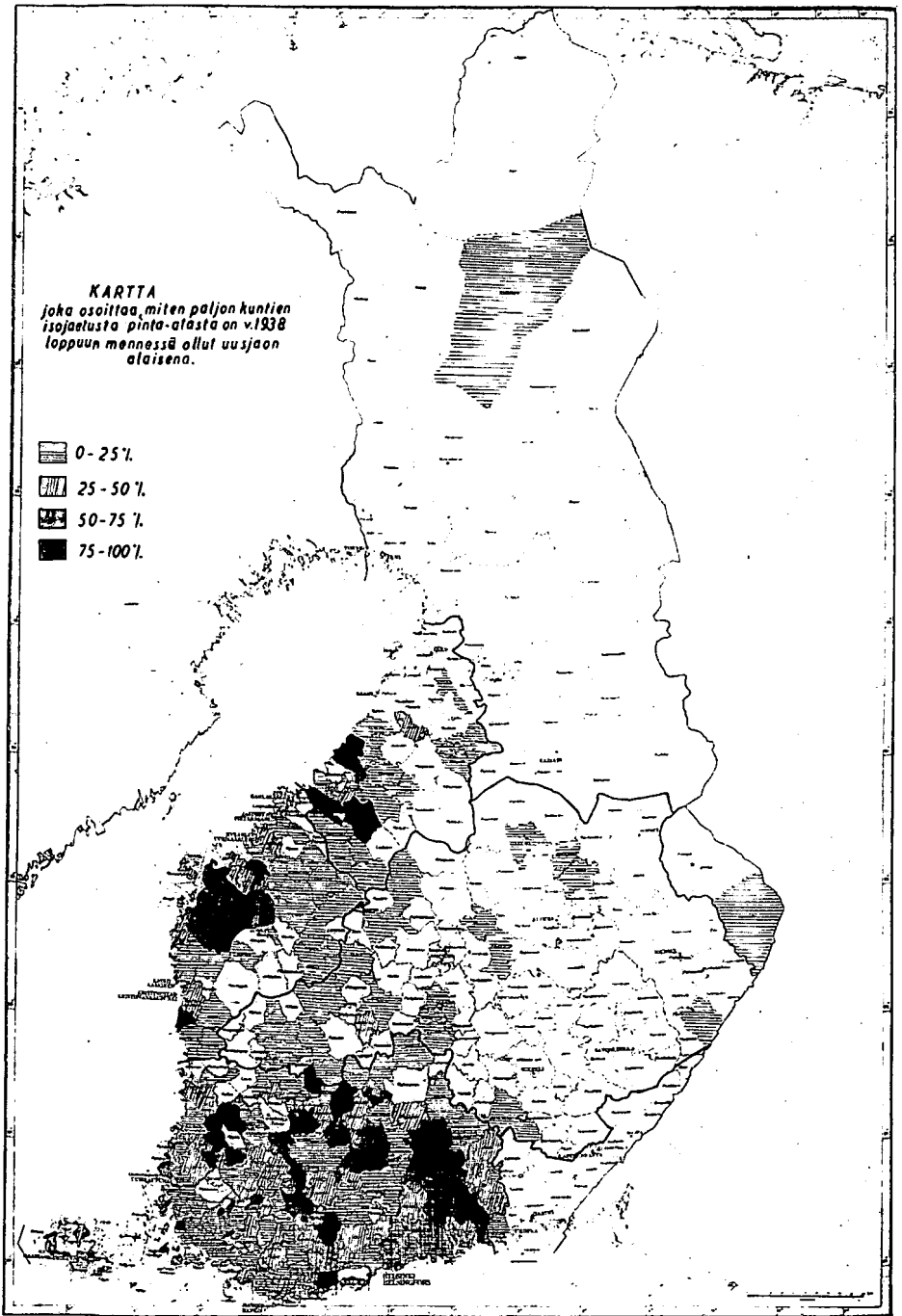


CHART 2. Reallocated areas as percentages of the whole area of parishes

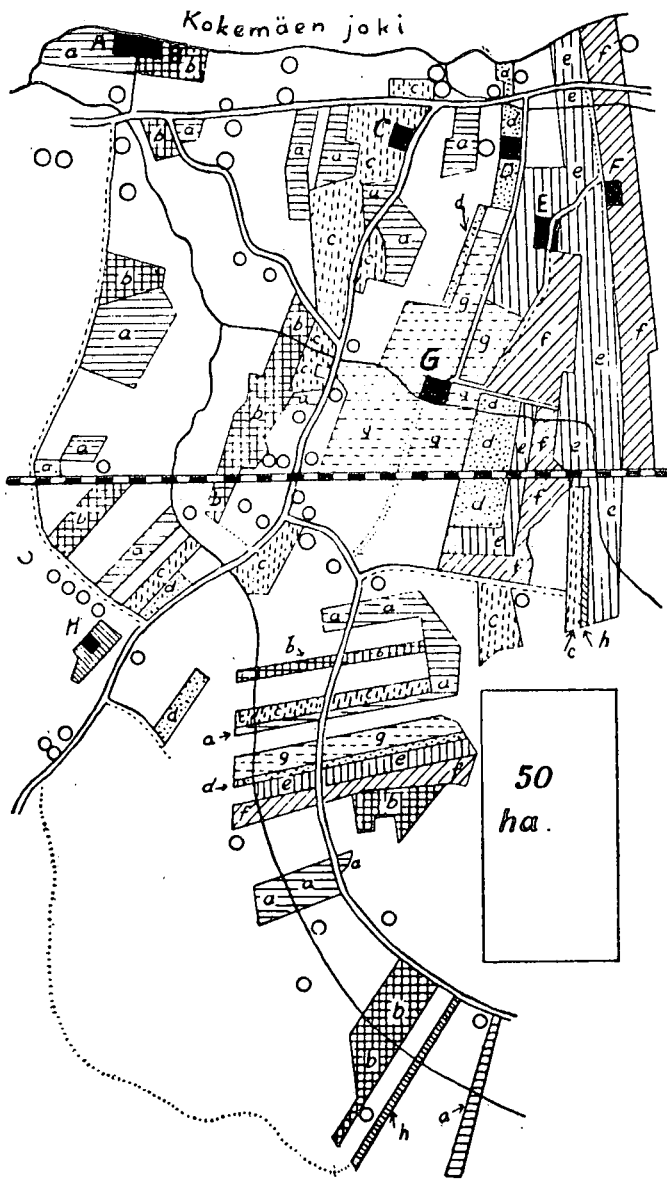


FIG. 4. Farmsteads and field lots of 8 small- and medium-sized farms in Kokemäki parish (Wirri)

TABLE I

*Number of field lots and average distances to fields, on the farms investigated, in different size classes and zones in Finland before the Land Acquisition Act\**

Zone	Average number of field lots per farm					Average distance to fields, kilometres				
	Arable area of farms, hectares									
	2-10	10-25	25-50	50-100	100-	2-10	10-25	25-50	50-100	100-
<i>Representative farms</i>										
South Finland . . .	2.4	2.7	2.8	(3.9)	(4.0)	0.6	0.8	0.9	1.0	(2.6)
South-east Finland . . .	3.0	3.7	(4.7)	..	..	0.8	1.1	1.5	..	..
Central Finland . . .	2.0	2.8	3.0	(5.0)	..	0.5	0.7	0.8	1.0	..
South Ostrobothnia . . .	2.7	3.7	4.1	..	..	1.5	1.6	1.9	..	..
North Ostrobothnia . . .	2.3	3.7	3.0	(3.0)	..	1.2	1.4	1.0	(2.5)	..
North-east Finland . . .	1.9	2.8	(4.3)	(3.0)	..	0.6	1.5	(1.2)	(0.8)	..
<i>Book-keeping farms</i>										
South Finland . . .	3.0	3.5	4.1	4.8	(4.5)	0.5	0.8	1.1	1.6	(1.9)
Central Finland . . .	3.3	3.8	4.8	..	..	0.7	0.8	1.1	..	..
South Ostrobothnia . . .	(2.0)	4.3	(5.8)	(5.3)	..	(2.7)	1.6	(1.7)	2.2	..
North Ostrobothnia . . .	(4.0)	(4.3)	(4.3)	(6.0)	..	(2.0)	(1.6)	(1.9)	2.6	..
North-east Finland . . .	(2.0)	4.4	(5.3)	..	..	(0.5)	1.4	(1.0)	..	..

\* If the number of farms was less than ten, figures are given in parentheses.

The average distance to fields, the number of field lots and their average areas are presented in Table 2.

TABLE 2

*The average distance to fields, number of field lots and average area of lots, on farms with good (g), fair (f), or poor (p) field location*

Size class (according to cultivated area)	Average distance to fields, kilometres			Number of field lots			Average area of lots, hectares		
	g	f	p	g	f	p	g	f	p
-10 ha. . . . .	0.21	0.46	1.03	1.8	3.1	5.0	3.0	2.3	1.5
10-25 ,, . . . . .	0.35	0.67	1.62	2.0	3.4	6.5	7.1	4.7	2.5
25-50 ,, . . . . .	0.50	0.77	1.96	2.2	3.5	6.2	15.0	9.5	5.9
50- ,, . . . . .	0.72	1.29	2.86	1.8	5.5	6.9	34.8	11.0	8.9

These figures show that the increasing distance to the fields is generally correlated with an increasing number of field lots and their decreasing area.

Dr. Jäntti's (Ref. 5) statistical information on the average number

of parcels per farm may also be mentioned. In connexion with his study, made on the basis of the sampling method used in connexion with pasturing conditions in Finland in 1938, he gave the following figures on the number of parcels per farm (Table 3).

TABLE 3

*Average number of parcels per farm and percentage of farms with varying numbers of parcels, in Finland, 1938*

	Average number of parcels per farm	Percentage of all farms with parcels as follows						
		1	2	3	4-5	6-10	10-20	Over 20
South-western region . . .	2.2	36	28	15	14	6	0	..
Southern region . . .	2.0	39	29	17	11	4	0	..
South-eastern region . . .	2.7	22	25	17	24	10	2	..
Central Finland . . .	1.8	41	29	15	12	3	..	..
Ostrobothnia . . .	3.8	24	14	15	20	17	6	4
Northern Finland . . .	3.4	27	14	15	24	17	3	..
Whole country . . .	2.6	33	24	15	17	9	2	0

According to that investigation, based on information from 1,930 farms, holdings with three parcels or fewer were still in the majority. The greatest average number of parcels was found in Ostrobothnia, northern and south-eastern Finland, and the average for the whole country was 2.6.

The number of field and meadow lots was slightly greater per farm (Table 4). There was a tendency towards an increasing number of field lots, when the farm area was larger.

TABLE 4

*Average of field and meadow lots, on average and in some size classes, 1938*

	Farms, with arable land				All farms
	3-5 hectares	5-10 hectares	10-15 hectares	25-30 hectares	
South-western region . . .	2.1	2.9	2.6	3.7	2.8
Southern region . . .	2.6	2.6	2.4	3.9	2.3
South-eastern region . . .	2.7	3.4	4.8	5.4	2.9
Central Finland . . .	2.5	3.1	3.5	5.2	2.4
Ostrobothnia . . .	3.2	4.5	6.9	5.4	5.2
Northern Finland . . .	4.5	4.6	6.1	..	3.1
Whole country . . .	2.3	3.4	4.4	4.5	3.1

This information refers to conditions prevailing before World War II. As a consequence of the wars some half-million people migrated from the ceded areas to present-day Finland. The necessity arose of settling the agricultural population in its own milieu, and a colonization plan on a great scale had to be introduced. The Land Acquisition Act was passed in 1945, and on its basis about 27,300 agricultural holdings each with more than 6 hectares of arable land, 34,500 part-time holdings, and 29,800 building sites have been established. In addition to this, 22,300 pieces of land were set aside for the enlargement of existing farms which were considered to be too small, while about 1,550 common pastures and 4,000 other common areas were formed. Altogether approximately 1,850,000 hectares of land, including 235,000 hectares of arable land, were detached, partly from private, partly from state, Church, or municipal possessions, and partitioned for colonization purposes. Thus the distribution of land has been changed, and the number of large farms greatly reduced. This radical change has not been without its effects on the internal conditions of holdings.

There has been a definite striving after more consolidated farms in connexion with the execution of the Land Acquisition Act. This Act includes provisions stipulating that the expropriation of land must be carried out by means that will ensure an improvement in the conditions of profitable farming. This has meant especially that the lots farthest away from the homestead have been expropriated. The new farms have generally been well centred, though exceptions do occur, depending on local difficulties or on the lack of ability of the executive officials. Suomela has estimated that as a consequence of recent measures the average distance to the fields has been reduced by from 0.1 to 0.2 kilometres, and now averages about 0.8 or 0.9 kilometres. He estimates also, that the number of field lots per farm has diminished by from 10 to 20 per cent. These changes are connected with the diminution in the average farm size.

The distance to the fields seems to have an important economic significance. Suomela's investigations proved that the intensity of farming averaged 10 per cent. less for farms with fair locations of fields than it did for farms with good locations, and from 20 to 25 per cent. less for farms with poor locations. The net return decreased with increasing distances, as follows:

Average distance to fields, km.	0.25	0.5	0.75	1	1.25	1.5	2	3
Net return (indexes)	100	91	82	75	68	62	51	35

Characteristic of Finnish conditions is the fact that compact villages have disappeared in most parts of the country. The Great Partition, and especially the Re-allocation Acts have contributed to this development. A great many holdings were obliged to move their farmsteads to new sites, against pecuniary compensation. There has been some discussion on the possible disadvantages of this development. The problem is to decide which is more important, the economic effects of the distance to the fields, or the conveniences of social life, or savings of capital in building occupation roads, electric lines, water pipes, &c.

Professor Kokkonen (Ref. 6), in a critical essay, stresses the loss of time caused by the increased distances to the fields in field work, milking of cows, hauling of manure, &c. Compact villages need better and more expensive roads to their fields, as loads must be heavier. Scattered farmsteads have the advantages of better hygienic conditions and less expensive road systems.

There are many opportunities, probably, for improving field location with continued consolidation measures. But it should be kept in mind that the natural prerequisites for creating well-centred farms are far from satisfactory in large areas of a country where small fields are scattered over wide woodland areas and where lakes, rivers, and bogs often constitute obstacles to the shortest connexions between them.

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