



Finland's Northern Conditions

Challenges and Opportunities
for Agriculture



RURAL DEVELOPMENT
PROGRAMME FOR
MAINLAND FINLAND
2007–2013

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Challenges and Opportunities for Agriculture

Finland, the northernmost agricultural country in the world, is located between the 60th and 70th parallels of latitude, more or less on the same latitudes as Alaska, the southern tip of Greenland and Siberia. A quarter of the surface area lies to the north of the Arctic Circle. Finland shares a land border with Russia, Norway and Sweden. In the west and south Finland borders on the Baltic Sea.

The total area of Finland is 390 920 km², of which almost a quarter is water (sea and inland waters). Of the total surface area 78% is land, 86% of this covered with forest. Only 8% of the land area is farmland.

Most of the arable land is in southern and western parts of the country. Due to the climate and soil conditions characteristic to specific regions, the main production sectors are roughly divided so that cereals and special crops are mainly cultivated in the south and west while dairy husbandry is located in eastern and northern Finland.

Long daylight hours and night frost

The special characteristics of farming in Finland largely derive from the northern climate, barren soil and peripheral location. Most of the terrain is fairly flat and even, except for the round hills, or fells, in Lapland and rows of steep and rocky hills in the east. Vegetation ranges from the coastal regions dominated by deciduous trees through the boreal zone to the completely treeless fell areas in northernmost Finland.

The growing season is short. In southern Finland it lasts 160 to 190 days, with an effective temperature sum of 1 400 °C and in the north 110 to 150 days and the





temperature sum is 500 °C. The temperatures vary a great deal all through the year, and the highest and lowest temperatures range from +30 to –30 degrees centigrade.

In northern Finland there is a period of so-called nightless nights when the sun does not set at all. The plants, however, cannot take full advantage of all the warmth accumulated over the long days.

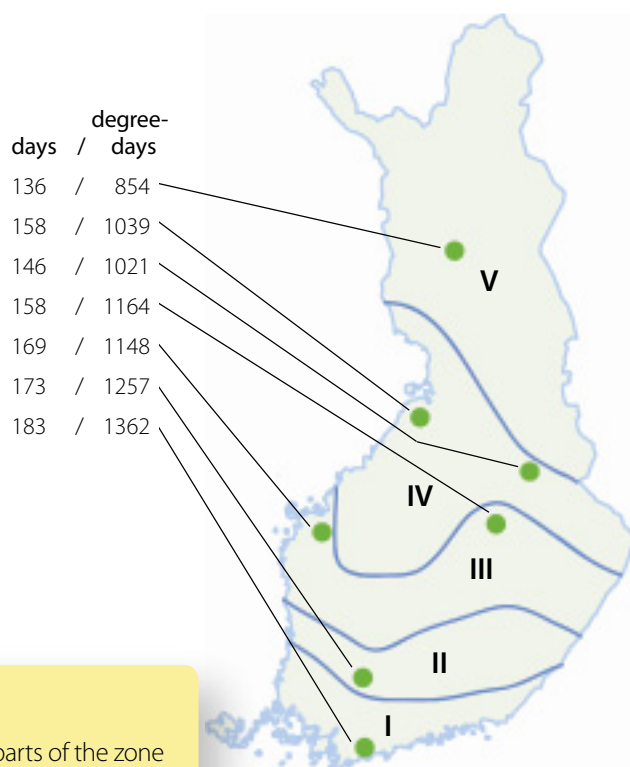
Cold temperatures and night frost in both early and late summer shorten the growing season. Preventing frost is very difficult. At its worst frost may put an end to the maturation of plants and leave the crop unripened. The risk due to frost is particularly great in North Ostrobothnia and Lapland, where the range of plant species and varieties adapted to such conditions is quite limited.

Combating the cold

Natural conditions in the north increase the costs of plant production. However, thanks to the cold winter the incidence of pests is far lower than in most other countries, which means that we can manage with smaller quantities of chemical substances to prevent pests and plant diseases.

In most parts of Finland the spring field work cannot be started before the month of May, after the snow and ground frost have melted. The work has to be done very quickly to take advantage of the spring humidity, which especially in clay soil in southern Finland evaporates very quickly. In the spring it usually rains quite little. Rainfall tends to increase towards the autumn, which means that harvesting and autumn works also need to be done

Farming zones, length of the growing season and effective temperature sum



Zones I–II: Bread cereals (wheat and rye)

Zones III–IV: Fodder cereals (oats and barley), grasses in northern parts of the zone

Zone V: Grasses, in northern parts of the zone conditions poor for grasses as well

SOURCE: Agrifood Research Finland MTT, Finnish Meteorological Institute

quite rapidly, during the few days when there is no rain.

On the European scale the average yields of arable farming are very low in the whole country. In 2008 the average yield of spring wheat was about 3 620 kg/ha, barley 3 640 kg/ha, and potato 26 120 kg/ha.

Of most cereal and oilseed crop species only the lower-yielding spring varieties can be cultivated in Finland, which causes a very hectic work period in the spring. Winter varieties are cultivated on only 3% of the cereal area. The moisture of the harvested cereal is often very high so that in practice all cereals need to be dried before storage. All this requires efficient machine capacity and increases the costs.

Adverse climate is a serious handicap for animal husbandry as well. Because of the arctic conditions with the

long, cold winter the building costs of livestock buildings, warehouses and manure storage facilities are very high indeed. Additional costs are created by the short pasture season, heat insulation of animal shelters, heating expenses, storage of feed during winter and snow ploughing.

Fragmented patches of land

Most of the Finnish soil is moraine. Apart from the productive capacity of land, the soil type determines various aspects of the production structure, such as size and shape of the arable parcels and their distance from the farm headquarters. Parcels of arable land have been cleared to areas where the soil is the best suited to farming. Often there are boulders, hills with steep slopes or water bodies between the parcels, making it difficult to create larger



uniform arable land areas. The small size and scattered location of parcels cause additional costs to farming and make it difficult to increase the farm size.

Often there are different types of soil even in the same parcel, which is why fertilisation may be difficult to plan. On parcels with various soil types the seeds germinate at different times, which means that the final crop is not of uniform quality.

Because of the short growing season, humid climate and soil type, most of the arable lands in Finland require dense drainage to maintain their productive capacity.

Small and scattered farms

Finnish agriculture is based on family farms, characterised by large number of relatively small farms. The number of farms was at its highest in the early 1960s, a total of

330 000. Since then the number of farms has fallen rapidly due to various trends in the society, including the strong migration to towns and cities.

The scattered location of arable lands due to both natural and historical factors is a major drawback for the profitability of Finnish agriculture and the possibilities to improve the structure and size of farms. In Finland there are larger uniform arable areas only in the south as well as along the rivers in Ostrobothnia.

The average size of base parcels is only 2.4 hectares. Towards the north the parcels get smaller and more and more uneven in shape. The high transportation costs due to the scattered farm structure and long distances are a serious burden to agriculture especially in eastern and northern Finland.



Tapio Helkkilä

Rural landscape is the heart of Finland

The varied landscapes and biological diversity of the countryside have been shaped over centuries by human activity. Agriculture has created cultural landscapes with arable lands, pastures, isolated farmhouses and rural villages bordering on forests and waters. The riches of the rural cultural and heritage landscapes include meadows and forest pastures, which also have a very special role in preserving biological diversity.

Disappearance of open farming areas causes the most dramatic changes in the rural landscape, where forest is already the dominating element. There is so little open land that every cultivated parcel, fallow or pasture area is a highly valuable landscape feature.

LFA support helps to meet the challenge

In a country like Finland, the EU co-financed natural handicap payment (LFA support) is vital for preserving agri-

culture. The income level of farmers in less favoured areas must be equal to that of farmers in more favourable regions. If this is not the case, the use of agricultural land and management of open rural landscape will be at risk and it will be increasingly difficult to find new generations to take over the farms. Continuous decrease in livestock farming and grazing is a serious threat to diversity both in the biological environment and in cultivation.

Farmers are able to take full advantage of the other rural development measures and to invest in environmental actions only if agriculture is profitable and rests on a sound base, and the farm has a future.

Actions to develop the countryside are highly important in the Finnish conditions. Natural handicap payments help to secure a solid foundation for agriculture and to preserve the rural landscape. A pleasant, well-managed countryside provides the setting for a diversity of other rural industries, such as tourism.

Number of farms covered by natural handicap payments, areas in Mainland Finland in 2007 and share of LFA support in agricultural income.

	Number of farms*	Arable areas receiving support (ha)*	Share in total arable area (%)*	Share of LFA support in agricultural income (%)**
Mountain area (Art 18)	36 638	1 146 991	53	46
Other less favoured area (Art 19)	13 134	464 302	21	44
Areas affected by specific handicaps (Art 20)	12 878	555 738	26	32
TOTAL	62 650	2 167 031	100	41

SOURCE: *Annual Report 2007 of the *Rural Development Programme for Mainland Finland 2007–2013* and **MTT Agrifood Research Finland. Figures include only the EU co-financed LFA support.

Further information on the LFA scheme in Finland and rural development can be found in the **Rural Development Programme for Mainland Finland 2007–2013** at www.mmm.fi -> Rural areas and building/Rural development programmes/Strategy and programme 2007–2013



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