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FARMING AT THE EDGE

VIABLE SMALL SCALE FARMING IN NORWAY

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SUMMARY

Norway, on Europe's northern fringe, is characterised by small-scale farming. The choice of crops and their yields are limited by the Nordic climate. Farm policies promote decentralisation and a varied farm structure in order to secure rural settlement, food security, food safety, environmental quality and sustainability. Agriculture receives substantial public support, and domestic production is largely protected from foreign competition.

The author has a smallholding of 5 ha farmland and 15 ha forest. Being a retired farm economics adviser, he now wishes to farm the smallholding more or less full-time. The production of pick-your-own raspberries, cut and dried flowers, honey, bread grain and timber will presumable secure sufficient employment and income in the years ahead.

Introduction

Norway predominantly has a small-scale farm structure. For centuries, most smallholdings have survived by combining income from farming, forestry and off-farm activities. Along the coast, agriculture and fishing was a common combination. In the inland forest regions, farming was often combined with seasonal forestry work for other forest owners. In the vicinity of cities and other urban areas, income was generated by various crafts and trades, in combination with intensive crops such as vegetables, fruit, berries or livestock products, all of which were directly marketed. However, an important part of the picture was also that not much income was needed for family subsistence, since housing was usually available on the farm at little or no extra cost, and a large share of the food supply was usually provided by the farm itself. In earlier times, fibres for the production of clothing were to a large degree either homegrown or provided by the land (wool, flax, hemp and various animal hides). Such a combination of many different activities is often termed pluriactivity, and is still a relevant strategy. Smallholdings are still highly in demand, especially those located near urban areas. This can be explained by the favourable living conditions they offer. Under present social conditions, income generated by the farm itself is often less vital, whereas other aspects of rural life, such as having lots of space, a safe place for children to grow up, the possibility of keeping animals (often horses), etc. are valued much higher.

Natural conditions for Norwegian agriculture

Much of Norway consists of alpine mountain areas (above treeline) and other non-productive land. Productive forest land covers 21 % of the total land area. Only few areas are suitable for farming, and arable land thus only covers 3 % of the total land area. This is very little compared to other countries. Due to the country's topography, most of the arable land consists of small, scattered fields. In addition, these are often on slopes and quite rocky. The percentage of farmland in a number of European countries is presented in Table 1.

Table 1. Total land area and agricultural area in some European countries in 1991. 1000 hectares

	Norway	Denm.	Sweden	Finland	Germ.	Netherl.	France	Gr. Brit.
Total land area	32,390	4309	44,996	33,813	35,691	3733	55,150	24,488
Agricultural area	978	2770	3344	2647	17,331	1991	30,432	17,780
- in % of total land area	3.0	64.3	7.4	7.8	48.6	53.3	55.2	72.6

The choice of crops and their yields are highly dependent on the climatic conditions. Located so far north, Norway's farmland is marginal for several important agricultural crops. It is one of few countries where sugar crops are not grown. The main growth-limiting, climatic factors in Norway are the length of the growing season and the accumulated temperature throughout the growing season. Rainfall conditions and to a certain degree day length have a positive effect on plant growth, however, an early summer drought is rather common in major farming regions. The cool climate generally limits the occurrence of plant diseases and pests.

Most of Norway's farmland is marginal cereal-growing land, and yields per hectare are significantly lower than in many other countries. The same applies to other crops. In many parts of the country, the main alternative is thus forage cropping, mainly grass. Grassland-based livestock farming is thus the backbone of Norwegian agriculture.

The social and economic framework

As all other business sectors, Norwegian agriculture is affected by the general social and economic developments. Regarding the employment market, e.g., one would expect an increased drain of labour from agriculture in times when non-farming employment is relatively easy to find. In times of unemployment, however, one would expect an decreasing rate of reduction of the agricultural labour force. The analysis of historical data actually confirms such trends.

The Norwegian economy is solid, with a significant annual export surplus, due to the production and export of oil and gas. Inflation is low, but the exchange rate of the Norwegian Kroner is high. This can be explained by the higher interest rates in Norway than in the other European countries. However, the interest rate has started to decrease, while unemployment is rising, but compared to the rest of Europe, it is still rather low. The development of the interest rates has a substantial effect on most farm households. Norwegian farm households have debts totalling NOK 35 billion. A change of the average interest rate of one percentage point thus results in a change of the total interest charge of NOK 350 million. Interest rates also have a significant effect on farmers' investment strategies. In recent years, investments in buildings and machinery have sharply declined.

The positive cost development in Norway in the past years has also been important for agriculture. Agriculture is a major buyer of farm inputs. Nevertheless, the profitability in Norwegian farming is to a large degree politically controlled. Thus, if the costs of farm inputs are reduced, the prices the farmers can achieve on a balanced market (agreed prices), as well as allocations via the central government budget would be accordingly reduced. The economic results of individual farmers and agriculture as a whole are thus largely dependent on prevailing farm policies.

Agricultural policy framework

Norwegian agricultural policy emphasises decentralisation and a varied farm structure. This is seen as being important for both food security and food safety. Agriculture is assigned a vital role in the maintenance of viable rural communities and a scattered settlement pattern. The natural resources must be sustainably managed in order to secure the biological basis of agricultural production and the environmental qualities of the cultural landscape. An important goal is to ensure that Norway remains free to implement a national agricultural policy within the limits of the WTO and other international agreements. In the formulation of farm policies, there has been, and still is consensus regarding the importance of maintaining small farms. This approach is based on such concerns as scattered settlement, rural employment, food security and socio-cultural diversity.

Norwegian farmers face a complex agricultural policy, which has great effects on the individual farmer's adaptations. For most of the agricultural products produced in Norway, there have been import bans for parts of or even the entire year. Such an import protection enabled prices on Norwegian agricultural produce to remain higher than the corresponding

world market prices. The import regulations have now been transformed into tariff regulations, thus ensuring that Norwegian goods still remain cheaper than foreign imports. In order to achieve the agricultural policy goals, substantial public support is allocated to the agricultural sector, e.g., in the form of price subsidies, acreage support, structural income support and various welfare schemes. In recent years, such budget allocations to the agricultural sector have amounted to about NOK 12 billion annually.

The OECD has developed a method called PSE (Producer Subsidy Equivalent), which can be used to estimate the level of agricultural support in the various member countries. Support is measured in relation to a set of world market prices. According to the PSE calculations, agricultural support in Norway amounted to about NOK 20.5 billion in 1991 and NOK 19.5 billion in 2001. The development of PSE for certain OECD member countries is shown in Table 2.

Table 2. Development of PSE for some OECD countries (in %)

Country	1979-86	1986-88	1991-2000	2001
Australia	10	9	5	4
Canada	28	34	18	17
EU	37	42	36	35
Japan	64	62	60	59
New Zealand	24	11	1	1
Norway	70	66	66	67
Switzerland	68	73	70	69
USA	21	25	23	21

The agricultural sector and farmers are exposed to an administrative system in which they themselves to a certain degree also participate. One could call it an agricultural policy administrative system. This system is characterised by its structure and a pattern of participants, rights, obligations and rules. It is based on the so-called Agricultural Agreement between the two farmers unions (Norwegian Farmers' Union and the Norwegian Farmers' and Smallholders' Union) on one side and the State (Ministry of Agriculture) on the other. This agreement forms the basis for annual negotiations about market prices and subsidy schemes. It also enables the farmers unions to comment numerous issues of importance for agriculture, e.g., in connection with legislative amendments in the area.

The policy instruments necessary for the achievement of all agricultural policy goals can thus be divided into two main groups. One is the legal system with rules and regulations that are issued with authorisation in existing laws, the other are economic policy instruments. The Norwegian tariff-based import regulation for agricultural products is based on legislation and regulations. The economic policy instruments can be classified as:

- Indirect support via research, education and advisory services
- Tax policy instruments
- Direct support as price subsidies for products and/or price reductions of farm inputs, headage or acreage support, as well as investment support
- Levies on inputs (e.g., on pesticides)

Support allocated to research, education and advisory services will only indirectly benefit farmers when they make use of these services. The tax system is now increasingly being used as an agricultural policy instrument. Farming income under a certain level is now exempt from income tax, and the tax-related depreciation rates are favourable.

Farm subsidies are partially differentiated according to geographical location and/or farm size. Furthermore, some subsidies are paid directly to the farmers, whereas others are channelled via the distribution chain.

Structural changes in Norwegian agriculture

In spite of the predominantly small-scale farm structure, Norwegian agriculture is experiencing a rapid structural development. The number of farm enterprises is declining fast, whereas the total farmland acreage remains more or less the same. The development during the past 40 years is shown in Table 3.

Table 3. Farm decline in Norway 1959-1999 (Number of farm enterprises)

Farm size (ha)	1959	1969	1979	1989	1999
0.5 – 5	135,830	88,481	62,011	37,031	13,788
5 – 10	42,126	42,240	32,716	24,969	16,720
10 - 20	15,074	17,938	21,656	25,330	22,286
20 - 30	4870*	3922	5639	7928	10,367
30 - 50		1900	2579	3266	5273
> 50	415	496	701	858	1577
Total	198,315	154,977	125,302	99,382	70,011

* = In 1959, farms between 20 and 50 ha were treated as one category.

In 1959 nearly all farms still had dairy cattle, in addition to a diversity of other farm animals. Since then, the structural changes have been dramatic, and mixed farming gave way to specialisation. Nowadays, farms are either livestock or cropping enterprises, and those with livestock usually have only one animal species. Presently, there are only about

19,000 dairy farms, 21,000 farms with winter-fed sheep, 5000 pig producers and 3500 poultry farms. There are about 21,500 farms growing cereals and oilseed crops.

A Norwegian definition of 'smallholding'

There is no precise, scientific definition of 'smallholding', and each region in Norway also has its own conception of the term. For example, a small farm in eastern or southern Norway would be considered to be average-sized or even large in western Norway. In general, most people would nowadays consider a 10-15 ha farm in eastern Norway, with cereal production and where most of the income is generated off-farm, to be a smallholding. In western and northern Norway, the same would apply to a corresponding sheep farm of up to 10 ha size. On these farms, only a small part of the household income is derived from farming activities, and the total labour input in agricultural production is low. According to this definition, about 40 % of all farms in Norway can be defined as smallholdings.

Management strategies for achieving satisfactory profitability on smallholdings

It is an old wisdom that profitability in a single farm enterprise or on the entire farm not only depends on income itself, but on the difference between income and costs. The challenge is thus to find ways to generate sufficient income while at the same time keeping costs as low as possible. The limiting factor is often the amount of land available. In comparison, one often has plenty of time to invest in the operation. However, it is also important to spread the labour requirement evenly throughout the year. One possible strategy is to secure an income from non-farming employment during the winter, and to use the growing season intensively for farming or horticultural activities.

A smallholder's strategy cannot be to produce products in large quantities, but rather high-quality products that can be directly sold to the consumer. The 'Farmer's Market' concept is one solution, and seems to be gaining momentum in Norway as well. Other strategies include marketing via the internet, phone orders, direct deliveries, and pick-your-own set-ups for berries and flowers. The following products are especially suitable for direct marketing:

- Cut or dried flowers
- Herbs, fresh or dried
- Flower and herb transplants
- Fresh berries (U-pick)
- Fruit
- Vegetables and potatoes
- Organic specialty products, e.g., grain products

Regarding livestock production, it is a matter of the smallholding's available resources. In general, livestock enterprises requiring a lot of land, such as dairy or beef cattle, sheep farming, etc. are not very suitable for small farms. On the

other hand, egg, poultry and pork farming, especially in combination with intensive crops such as vegetables, are feasible solutions. However, regulations limit the amount of farmyard manure that can be applied per hectare, even though such so-called 'spreadable acres' can be rented if necessary. Fur-bearing animals such as mink and fox are commonly kept as a source of additional income on small farms, and under appropriate conditions beekeeping is another viable alternative.

Another approach is to offer various farm-based services. Many farms generate income from such services, including farm tourism and agro-pedagogical programmes for kindergarten and school groups. The "green care" concept is rapidly gaining ground in Norway. Within such programmes, children, youths or other people in need of special attention or a protected environment are offered shorter or longer periods of residence on farms. For society as a whole, this results in a less costly and better service than in traditional institutions, in addition to creating numerous jobs.

As mentioned above, net income depends on the balance between costs and income, and it is thus equally important to reduce costs as it is to secure a sufficient turnover. The costs one has most influence on are machinery costs and interest expenses.

In order to reduce machinery costs, the use of used machines and machinery pools are good strategies. Numerous studies have shown that the number of hours-in-use per machine or piece of equipment is often very small, even on large farms, and that machinery more often is replaced because of becoming outdated than because of wear and tear. Such 'outdated' machines could preferably be used on small farms, as these are less dependent on having the most efficient equipment at any time.

Interest expenses are another important factor. Most agricultural property in Norway is transferred within the family at rather low prices. Naturally, this means a lot. Furthermore, it is of course important to keep investment costs low, regarding both machinery and buildings. A good strategy to minimise the construction and maintenance costs for buildings is to use own timber and labour.

A case study: my own farm

Five years ago, my wife and I took over a small farm property from another family member. The smallholding has 5 ha arable farmland and 15 ha forest. The farm lies in the south-easternmost part of Norway, close to the Swedish border and 5 km from the town of Halden, with a population of about 30,000. In spite of its free and undisturbed location, the farm is not far from densely populated areas.

All farm buildings were old. The farm house was built in about 1750, and was renovated in 1850 and 1950. We are planning to build a new house in 2004-05, and to turn the old one into a guest house. The farm building, partially also dating back to approximately 1750, had been removed. We built a new farm building, which is adapted to our future plans for the farm, and will use it for the first time this year. There were about 1000 m^3 of mature timber in the forest. Most of it has now been cut and the profits used for necessary investments. The felling areas have been replanted, and will require some tending in the coming years, with little or no immediate returns.

We are planning the following products: 0.5 - 1 ha raspberries (U-pick), 0.2 - 0.5 ha flax (*Linum usitatissimum*) for sale as cut or dried flowers, 4 ha bread grain and 20-30 honey bee colonies. As part of the beekeeping activities we will grow some patches of phacelia (*Phacelia tanacetifolia*) as a bee forage crop. The labour requirement is in total about 0.5 man-years. The remaining time can be used for consulting assignments in agriculture, giving courses, lectures, etc. Raspberry production is meant to be the farm's cornerstone. There are not many professional raspberry growers in the area, even though the climate is favourable for this crop. Other advantages of growing berries include closeness to a large town, and having a crop that usually is marketed at the end of summer vacation. In addition, keeping bees should secure good pollination and high yields.

I plan to retire in 2004 or 2005 in order to have more time for farm work. In addition to all of the work that still needs to be done on the farm, most of the forest has to be thinned and cleaned.

How can one thus secure a decent livelihood on a small-scale farm? The answer lies in the diversity which a small farm must focus on, and in the pluriactivity which is necessary in order make ends meet. On a large farm, you can make a living from specialised monocultures, but such a strategy will seldom work on a smallholding. Diversity and the broad range of activities place considerable demands on the farmer, but this also creates a challenging and exciting life. The quality of small farm life is further highlighted when considering the favourable living conditions it enables, perhaps especially as a place for the young generation to grow up. It is also important that public support is provided in order to enable the continued operation of smallholdings. This is of vital importance for the maintenance of diverse and viable rural communities as well as the safeguarding of future food security.

About the author

Knut Heie is 64 years old. He is a farmer and is also employed at NILF as a National Farm Economics Adviser. This job includes the responsibility for the further training of farm economic advisers. As part of the job, Mr. Heie has travelled extensively throughout all of Norway.