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SMALL-SCALE COOPERATION IN AGRICULTURE

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SUMMARY

Norwegian farmers have in recent years established many different types of small-scale cooperation. The author of this paper has been working on a project called "Rural Cooperation at the Turn of the Century", which received support from the Norwegian Ministry of Agriculture. The project's goal was to increase farmers' and advisers' competence, and inspire them to increased cooperation. This presentation shortly describes the various forms of cooperation which at present are most common in Norwegian agriculture. Some advantages and disadvantages of cooperative measures will also be discussed.

Many of the disadvantages of cooperation can be reduced by thorough planning and formalization of the planned cooperation. Various organizational forms will be discussed. It is also important to develop an advisory system that can assist in the establishment of new measures, and follow up existing ones. Often, networking of similar cooperation schemes can be useful.

Because of the country's natural conditions as well as the structure of its agriculture, Norwegian farmers have always been forced to cooperate. Norway, as its name implies, lies far to the North, and the growing season only lasts for 3–4 months. In addition, the average farm size is only 13 ha. The discrepancy between available technology and farm size has been one of the major factors for rural cooperation, which often led to increased profits and improved social relations.

Through the years, many different forms of cooperation have existed. Threshing machinery pools were established in the middle of the nineteenth century and were replaced by the combine harvester about 10 years later. Cooperative irrigation was

practiced earlier, but nowadays as well. The first dairies were also small cooperatives. The years following World War II were the golden age of machinery stations, closely tied to the introduction of tractors and the increased mechanization of agriculture. In the 1960's and 70's many cooperative pastures, cooperative farms and stand-in arrangements were established for livestock farmers. With few exceptions, the last part of the 1970's and the 1980's were characterized by fewer new establishments of cooperative arrangements. This can mainly be ascribed to the relatively sound economy in Norwegian agriculture in those years. However, this changed in the early 1990's, when Norwegian agriculture came under increasing economic pressure. In order to maintain the same level of profits, farmers had to find new sources of income and at the same time reduce costs.

In 1990, the Ministry of Agriculture decided to encourage the development of cooperative measures. An "action-oriented working committee" was appointed, under the leadership of Prof. Reidar Almås from the University in Trondheim. The committee's objective was to inspire and encourage viable cooperative projects. The experiences from the activities initiated by the committee are thereafter meant to form a basis for making changes when developing future policy measures. It was also emphasized that the experiences should be transferable to other areas and user groups.

The working committee was appointed for a 5-year period, and used some time to assess the need for what kind of information material was necessary, in addition to actual advisory services. The committee cooperated closely with agricultural authorities in four counties, testing their material and the advisory programme. For example, guidelines for machinery cooperation and rural service associations were published, and a number of seminars on cooperation in various fields were arranged. At the end of the project period the committee recommended that the work should be continued as a project under the Royal Norwegian Society for Rural Development, with partial funding from the Ministry of Agriculture.

The follow-up was a 3-year project, with the aim of increasing farmers' and advisers' competence, inspiring them to increased cooperation. Motivation and information on the various measures were also important aspects. There is lots of knowledge on

these issues, which, however, is often limited to some few institutions. The dissemination of this knowledge to advisers and farmers nationwide was thus another important task. This project is now also being finalized, but we believe it should be possible to continue this work in a new 3-year project. There are constantly new groups of farmers and advisers in need of information, so that there actually should be continuous efforts in this field.

A DEFINITION OF COOPERATIVE ACTIONS

Before continuing, it is necessary to define what we mean when we use the term "co-operative actions". Almås (1980) presents the following definition:

"A cooperative undertaking (action) is ...a group of persons that on equal terms enters into a voluntary, contract regulated economic cooperation in order to achieve common objectives."

Being a "group of people" implies that cooperation has both social and economic implications. In practice, "equal terms" imply that each member has one vote. "Contract regulated" cooperation does not necessarily imply that it must be in writing. Informal cooperative actions based on oral agreements are also included in this definition.

We will take a closer look at relevant areas for such cooperative actions.

RELEVANT AREAS FOR COOPERATION

Machinery Cooperation

The most common area for cooperation is beyond doubt machinery, particularly farm machinery. However, machinery cooperation is also common in forestry. This type of cooperation can be organized in several ways. The Royal Norwegian Society for Rural Development has been dealing with this issue for a number of years, and distinguishes between the following forms of machinery cooperation:

- Machinery exchange
- Hire of machinery and operator
- Joint purchase and use

- Farm machinery pools
- Farm machinery groups.

Machinery exchange, hire of machinery and operator and joint purchase and use are simple forms of cooperation, often practiced informally, i.e., without written agreements. Usually, they involve only a small number of machines and operators, e.g., two farmers investing in a common Cambridge roller. Informal machinery cooperation is very common in Norwegian agriculture, but also has its limitations. It is also fully possible to formalize these forms of simple cooperation. A written agreement makes it easier to divide the responsibilities for maintenance and storage, and to ensure a fair distribution of machinery usage.

Farm machinery pools and groups require the establishment of separate associations or companies, with written by-laws, a board and an annual general meeting. In a farm machinery pool each member has single ownership of the machines. The machinery, sometimes including the operator, is mediated by a manager, or through an address and machinery list. In farm machinery groups members have joint ownership of the machinery. In general, tractors are excluded from the cooperation.

Cooperation on farm machinery can be extended to include a joint workshop, joint purchase of input factors and labour cooperation. A joint workshop increases the social interaction, eases the mediation of machinery and reduces the problem of poor maintenance. A number of joint workshops have been established, and their members are very satisfied with the arrangement. Often, a sofa, some chairs and a coffee machine have been installed. The social aspects are also very important!

Crop Production

Cooperation within crop production may, in addition to machinery, include product storage, drying facilities and actual crop growing, including joint farming of cropland. Three young farmers in central Norway have for example teamed up and farm their grain fields as a joint venture with limited responsibility. They operate as a joint seller of their grain yields, and distribute income and costs according to labour input and acreage. In several places, joint storage of potatoes has been established. Irrigation can provide

significant advantages, and is necessary for a number of crops. Cooperation is often the only way to ensure successful irrigation, and a lot of irrigation cooperation has been established through the years, in particular at times when such investments were subsidized.

Livestock Husbandry

There are long-standing traditions for cooperative arrangements within livestock husbandry. Joint ventures, joint pastures and stand-in arrangements were extensively established, especially in the 1970's. Nowadays it is common to establish joint dairy ventures, in most cases joining two dairy herds. These arrangements are mainly justified from a social welfare perspective – more vacation and leisure time – even though there are also financial advantages. In recent years, other types of arrangements have been established. Two dairy farmers cooperate and use their existing farm buildings as a common milking barn alternately every other year in the grazing period. This liberates a lot of working capacity on the farm not responsible for milking.

Insufficient storage capacity for farmyard manure is a problem for many livestock farmers. Several farms have solved this problem by building new joint storage facilities, often supplemented with cooperation on manure spreading and equipment.

Forestry and Range Resources

Within forestry there are several types of cooperative arrangements. A cooperative team consists of a group of forest owners, usually two to five persons, who on fairly equal terms provide mutual assistance in clearance, hauling and management in their respective forests. A majority of these arrangements are informal, i.e., based on oral agreements. The woodlots involved are mainly in the same size category, and profits are shared according to labour input or stumpage volume.

In a labour ring, forest owners cooperate to hire joint forest workers. It can be difficult to secure sufficient and regular work for the employees of such rings, in parti-

cular in snowy winters, when logging machines are usually much cheaper. The labour rings are formally organized, i.e., with written bylaws.

Forest road associations are commonplace, mainly because the government has provided financial and professional support for joint construction of forest roads. However, maintenance has often been neglected on such roads. Through maintenance associations improved road maintenance can be achieved.

A timber association is a group of forest owners who join forces in manufacturing sawnwood. Traditionally, local sawmills were stationary, but lately mobile sawmills have become increasingly common.

In many areas, range resources have gained increased economic stature, both in relative and absolute terms. This augments the need for more and better organization of range resource utilization. Range and landowner associations have existed for a long time in Norway, but it seems as if their numbers are increasing. These associations manage hunting, fishing, land use and tourist activities in their area within the limits of state laws and regulations. In several municipalities and mountain areas specific projects have been initiated with the aim of improving the management of range resources.

Other Farm-based Businesses

Cooperation can be the key for new business activities based on farm resources. One example hereof are rural service associations, groups of local farmers that join forces to market their skills, machinery and farm buildings to improve the profitability of their total resources. They provide services to municipalities, private industry and individuals in the local community or neighbouring communities. Common services include snow clearing, transportation, maintenance, cleaning and other small and medium sized tasks.

Cooperative activities may serve several purposes. For example, many joint ventures in livestock husbandry and forestry focus mainly on sharing machinery. A machinery group may undertake joint crop production on the member farms.

ADVANTAGES

We have so far given a description of different types of cooperation and some practical examples. It may be necessary to give a more thorough description of the advantages that may be achieved and disadvantages that may arise from such cooperation.

As earlier mentioned, the objectives of any cooperation may be of both economic and social nature. Furthermore, there is an interdependency between these two objectives. If only one of them is considered and the other is neglected, the cooperation may function poorly. Therefore it is common to talk about the *dual nature* of cooperation (Almås, 1980).

The social advantages of cooperation are related to increased social relations and the development of a community spirit. Statements from many cooperating farmers indicate that the social aspects are important, but only become evident after the cooperation has lasted for a while.

According to Hanf (1980), the economic advantages of machinery cooperation include reduced costs of capital, reduced need for capital, reduced labour costs, quicker adoption of new technology and reduced production risk. If one adds increased income, the list is complete. We will discuss these components in more detail.

Capital Costs

Most Norwegian farms are so small that they are not even close to utilizing the capacity of their buildings and production equipment. Cooperation can lead to a better utilization of the production capacity. Hence, the fixed costs – depreciation and interest payments – per unit of produce are reduced. As studies have shown, the costs may be further reduced through the use of larger equipment with lower average costs.

Capital Need

A reduced need for production capital per unit of produce is closely associated with cost reductions. This way less capital is tied to production. If properly invested elsewhere on the farm, this capital may result in additional financial income. The distribution of the

reduced capital need depends on the type of cooperation. In a farm machinery group, the capital reduction will be distributed nearly proportionally among its members. In a farm machinery pool or a scheme with hiring of machinery and operator, the leaser will experience a large reduction in capital needs, while the equipment owner generally will experience that more capital is tied down.

Labour Costs

Cooperation influences labour costs. Labour costs are often not properly displayed in the farm accounts, especially when it comes to the value of the farmer's own labour input. Hence the reduction of labour costs tends to be underestimated. In many cases the reduced labour costs are at least as important as the reduction in capital costs. In the first place, the overall need for labour is reduced as more labour efficient techniques are introduced, the time spent on preparations is reduced, and it becomes possible to specialize on certain tasks. Secondly, the quality of the work is improved, in particular when machinery and operator are hired, or in the case of farm machinery pools, when tasks requiring special skills are often carried out by members with such skills. With the latter arrangements, payment is made only for the actual number of hours spent on the task, often at a reasonable rates.

Technological Progress

Through cooperation it is possible to reinvest more frequently, as the equipment is used for longer periods of the year. Thus, equipment can be replaced profitably at an earlier point in time, and the machinery is less likely to be obsolete before its wear mandates replacement.

Production Risk

Another benefit of cooperation is risk reduction. This pertains both to machinery and labour. When key machinery breaks down on any single farm, this often implies an almost 100 % reduction in production capacity on that particular farm. If this break-

down occurs within a cooperative setup, only a small fraction of the production capacity is usually lost. Replacement equipment is at hand quicker and with less administrative effort while the broken down machinery is being repaired.

The same is the case for labour. If an accident should occur or a farmer becomes sick, the negative effects on the farm's productivity can be considerably reduced if one takes part in some cooperative scheme, like a stand-in arrangement or a joint venture.

Increased Income

For cooperation directed towards the establishment of new activities, increased income will naturally be an important objective, and if met, an advantage. Within agriculture, examples of such activities can be found within range resource management, tourism and rural service.

Which of the aforementioned advantages are the most important depends on the type of cooperation. In a stand-in arrangement, a joint venture or joint pasture scheme, the social welfare aspects concerning vacation, spare time and regulated working hours rank high. In a farm machinery group, reduced capital costs are important. Rural service associations are primarily established to increase income.

DISADVANTAGES – AND HOW TO LIMIT THEM

Disadvantages are unavoidable in any cooperation. If cooperation is to be justified, the advantages must of course outweigh the disadvantages. However, there are luckily a number of ways to keep the disadvantages at a minimum. Based on a scheme for machinery cooperation, Evans (1987) suggests the following measures:

think globally
farm locally

Table 1. Disadvantages of machinery cooperation, and how they can be limited

Problem	Organizational solution
Finding willing and acceptable partners	<ul style="list-style-type: none"> - Ensure that one shares the same perspectives on cooperation and farming. - Establish a database of interested farmers, with details on their equipment needs.
Lack of access to the equipment when it is needed	<ul style="list-style-type: none"> - Group discussions. - Having alternative machinery to choose between. - Ensure that the capacity of the equipment is sufficient. - Include a roll-over option in the bylaws to ensure that members in the long run get equal access to the machinery.
Poorer maintenance	<ul style="list-style-type: none"> - Establish local bylaws for the equipment's operation and maintenance. - Make one member responsible. - Have only one operator, in particular for equipment that is difficult to use. - Inspection at fixed intervals, preferably by an external specialist.
Loss of independence	<ul style="list-style-type: none"> - Accept this as an inevitable part of cooperation. - Realize that on the other hand one becomes more independent, e.g., in relation to suppliers and credit institutions.
Risk of disagreement	<ul style="list-style-type: none"> - A certain similarity of the members' temper. - Careful selection of equipment. - Good maintenance. - Fair distribution of machinery use.

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Evans' research shows that those participating in cooperative schemes often experience the disadvantages as being far less bothersome than those not cooperating tend to believe.

Studies on small-scale cooperation in Norwegian forestry by Rønningen (1987) coincide with Evans' results with regard to the disadvantages. Our own experiences from the project "Cooperation in Agriculture" point in the same direction. Frequent statements include the fear of equipment not being available when needed and of poorer maintenance.

FORMALIZED COOPERATION

Formalization, defined in the following as a written agreement pertaining to the cooperative scheme, is one of the most important ways of limiting the disadvantages of cooperation. Even though the majority of cooperative schemes exist without any written agreements, we do recommend that written agreements are worked out. The process gives ample opportunities for necessary discussions of the various aspects of cooperation in advance. This, in turn, increases the likelihood that the cooperation will live up to the prior expectations. Formalization also makes the cooperative setup more predictable and fair. The risk of disagreement is reduced, and the cooperative scheme will generally last longer. Extensive and more involved forms of cooperation like farm machinery pools or groups, and rural service associations are completely dependent on formal agreements. Above all, it is important to clarify the objectives and the type of cooperation of the scheme.

COOPERATIVE AGREEMENT OR ENTERPRISE?

A cooperative agreement may be sufficient when a small group, e.g., two to five farmers, undertakes limited cooperation. An example of this would be three farmers sharing a combine. If the size of the group or the scope of the cooperative activities increase, it is usually worthwhile to organize the cooperation in some form of enterprise based on written bylaws. Cooperation aimed at external business activities, like rural

services, requires the establishment of an enterprise registered in the Norwegian Central Register of Legal Entities. Several associations have published norms for agreements and bylaws, however, these can only be used as guidelines. Agreements and bylaws should therefore always be thoroughly discussed and adapted to the specific needs of the scheme/enterprise being established. The bylaws should account for at least:

- the type of enterprise
- objective(s)
- criteria for membership
- part ownership or stockholdership
- members' rights and duties
- member withdrawal
- debt
- accounting and payment of dividends
- control of the accounts
- the bodies of the enterprise
- exclusion
- disagreements
- change of bylaws
- dissolution of the enterprise.

The Royal Norwegian Society for Rural Development has published a notebook for keeping track of equipment usage. In it, one can record the number of hours each member has used the machinery included in the cooperative agreement. This book is then used to split costs among members.

PROFESSIONAL SUPPORT

Any cooperative scheme is of course to be established and run by the members, in this case farmers. Still, external professional support is beneficial and in many cases necessary. This is especially the case in connection with the preparation and establishment of the cooperative scheme. This has been confirmed by numerous farmers with

practical cooperation experience. The availability of professional help varies, but in Norway the Agricultural Offices in several counties have accumulated expertise on this issue. On a national level, the Royal Norwegian Society for Rural Development and the Norwegian Agricultural Economics Research Institute (NILF) offer assistance. Quite a bit of literature has been published dealing with various types of cooperation. One should furthermore not forget that farmers with previous experience from cooperative schemes often provide the best advice.

CONCLUDING REMARKS

Due to the changing economic and social conditions in agriculture, more farmers are now considering cooperation. Cooperative schemes are suitable within traditional agriculture as well as for new business activities. Cooperation regarding farm machinery is an example of the former, while rural service fits in the latter category. In order to establish cooperation, one needs at least some enthusiastic farmers, preferably with the professional support of an adviser who is aware of the benefits of cooperation.

Initially, it is especially important for the prospective members to clarify the objectives of the cooperative scheme and to decide on the type or form of enterprise to be chosen. Persons with experience from cooperative schemes can often provide valuable advice.

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