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# The Expansion and Decline of a Transhumance System in Sweden, 1550-1920

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## 1. INTRODUCTION

This article analyses a transhumance system in Sweden called summer farms (Swedish *fäbod* or *säter*) with respect to how the agrarian economy in northern Sweden developed from the sixteenth century to the beginning of the twentieth century. The aim is to understand the development and the impact of summer farms on the agricultural economy and how the agricultural system evolved. In order to understand the summer farms in early modern Sweden, agriculture prior to the sixteenth century also must be considered.

Research since the 1970s has stressed that peasants played an active role in changing agricultural practices. Scholars of Swedish history have emphasised topics such as development, innovation, change, adaptation, and dependence in agriculture (Gadd 2000). However, the summer farms and the agricultural system they were a part of are still viewed as having been static, because they were not affected as agricultural practices changed. This article contributes to the understanding of the development and change in peasants' agriculture where animal husbandry was conducted as a transhumance system. It deals with questions of how peasants with summer farms actually did adapt, transform, and change their agricultural system in response to new conditions.

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### 1.1. Questions

The main objective is to understand what role the summer farms played in the peasants' economy during the early modern period up to the beginning of the twentieth century, and how the summer farms were connected to, and part of, the agricultural system. First, is it important to define «summer farm»? This paper covers a long period, from the late Middle Ages to the twentieth century, which makes it difficult to use and compare sources. Formulating a definition is crucial as a tool to enable reliable comparison of data from different times. Without a definition, «summer farm» may carry different meanings at different times depending on the source material. Second, knowledge about the number of animals in the transhumance system is key to understanding the development in the region. How many animals did the peasants have and how did the proportions of different species change over time? Third, the summer farms were usually located on common lands, so how did the use of common lands change during this long period? It is important to answer these three questions in order to understand the development of summer farms.

By using a limited number of source materials from defined geographical areas, a chronology has been established from the inception of summer farms in the sixteenth century to their decline in the early twentieth century, thereby creating a framework that other more disparate sources can be related to. By using this framework, it is possible to have a broader discussion of the development of the agricultural system in which summer farms were an essential part. Important aspects to examine are division of labour, market integration, collection of winter fodder, how tools and agricultural equipment changed, and settlement development.

### 1.2. Economic aspects

Summer farms were part of the household economy in its original sense of housekeeping and management. We will look at the economic aspects of summer farms with an emphasis on production and organisation.

Earlier research describes summer farms, and their role in the agricultural economy, as static (Nyman, 1963; Svensson, 1998). Alternatively, summer farms are viewed as a developmental stage within an evolutionary model, where they are an intermediate step in the process from primitive to more complex settlements (Erixon, 1918; Frödin, 1925). The research discussion has focused on their origin —how old summer farms were and their geographical distribution. The few scholars who have discussed development and

changes in the use of summer farms have not considered them as part of an agricultural system (Veirulf, 1973; Montelius, 1975). The Norwegian ethnologist Ragnar Pedersen (1974: 34) argued that the mistake many scholars made when they explored the evolution of summer farms was that they did not connect the summer farm to the household's main farm and economy.

I challenge the view that summer farms were static by using a theoretical approach to examine changes in animal husbandry and how summer farms were a key part of agricultural and household economies. A comprehensive theory that emphasises change in agricultural history is that agricultural systems consist of technical complexes, and changes from one form to another happen in great leaps rather than through gradual modifications. Agricultural systems can be divided into three phases: establishment, stabilization, and abandonment (Myrdal, 2006). The idea that agriculture systems consist of technical complexes is not unique. It is similar to looking at how large technological systems work and evolve through certain phases (Hughes, 1987).

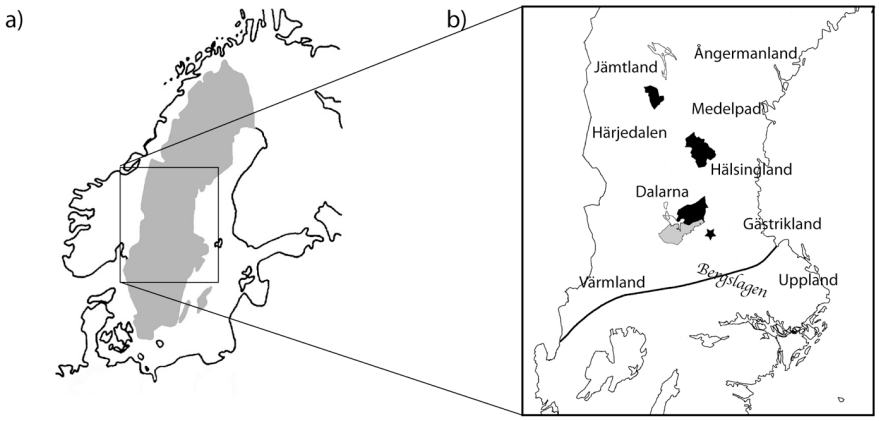
A guiding idea in the theory of agricultural systems is that the development and dynamics that characterise, for example the Agricultural Revolution (1750-1900), were established in an earlier period. In order to understand the agricultural economy in the summer farms area during their peak in the eighteenth and nineteenth centuries, one has to investigate the preceding agricultural system. The basis for a new agricultural economy could have been established in the sixteenth and seventeenth centuries, after the late medieval crisis. Furthermore, the seventeenth century was also a period of stress for the peasants' economy that could have created an incentive for change. Later, it was possible for agriculture to expand when the pressures of taxes and wars were relieved during the eighteenth century. While the summer farms could have been an efficient strategy for peasants to develop their agriculture during a certain period, they could later have become unprofitable and subsequently abandoned.

However, such an all-embracing theory of agricultural systems does not provide sufficient tools to examine tangible changes in the particular agricultural system comprised of summer farms. To understand this specific agricultural system, theories about the organisation of human collaboration, material culture, and division of labour are used. Until their incipient decline in the late nineteenth century, summer farms were located on commons, i.e. domains owned by the parish or the village or privately owned land used as commons for grazing. Elinor Ostrom's theories about management of common-pool resources (CPRs) are useful when describing how the summer farms developed and for understanding how the expansion of summer farms was possible. Ostrom argues that the users of commons shared responsibility for the management of CPRs. Her work

emphasises how humans and ecosystems interact to provide for long-term sustainable resource yields (Ostrom, 1990).

An essential part of all human activity is reflected in material culture. The material culture gives us an opportunity to understand changes through history. By studying how artifacts change over time, one gets a better understanding of mankind's history. Big and sweeping changes can be observed in the remains of artifacts and settlements (Glassie, 1975: 66). The development of the summer farms can also be studied from the perspective of division of labour, by asking who did what and when. For this, social aspects have to be added to the technical complex, including division of labour at different scales. We need to analyse how work was divided in the family, the household, the farm, and the village, between young and old, between men and women, and between family members and employees (Ogilvie, 2003:4). When looking at summer farms, women's work comes into focus, as discussed in sections 1.4, 2.2, 5.2, and 5.8.

**FIGURE 1**
**The boundary of summer farms in Sweden**




Source: own elaboration by the author. (a) Scandinavia with Sweden. (b) The summer farm area north of the line, i.e., the summer farm «border». Investigations of livestock herd size (section 3) were conducted in parishes marked in black in the map—from north to south, Klövsjö, Färila, and Rättvik. An investigation of court protocols (section 4) was conducted in the parish of Leksand, grey in the map. Regions mentioned in the article are indicated on the map. Gästrikland, Hälsingland, Medelpad, Ångermanland, Härjedalen and Jämtland constitute southern Norrland. The star indicates the location of Great Copper Mountain in Falun, Dalarna.

## 1.3. Uplands and plains

The boundary of summer farms in Figure 1 defines the southern limit of their upland distribution in the late nineteenth century (Nyman, 1952). The boundary runs from the northern part of Bohuslän, through Värmland north of Lake Vänern to southern Dalarna

and through northern Uppland. The boundary of summer farms coincides with *limes norrlandicus*, i.e. the climatic border of Norrland (Figure 1). Based on the theory of agricultural systems, I argue that summer farms, as they appeared during the late nineteenth century, were part of a technical complex that made the agricultural system in northern Sweden distinct from that of the south. In this article, the main focus is how this agricultural system evolved.

The agriculture in southern Sweden was primarily a cereal-based production economy situated on the plains. The agriculture in the north was based more on animal husbandry. Therefore, the question is whether the systems of the plains and the uplands had the same response in agriculture to changes in society. The agricultural system in the north had a special character and nature and needs to be analysed on its own terms and not through a model based on the agricultural system in the south. Even though many of the cultural and physical differences between northern and southern Sweden were known, up to now the comprehensive models for agricultural development have been the same for both regions (Gadd, 2000: 235-243, 254).

### 1.4. Historical background

The historical background of the society and agriculture where summer farms were present follows the theoretical approach to agricultural systems and focuses on changes, during the establishment and abandonment periods, and development within the system, during the statilisation period.

The late medieval crisis stopped the increase in agriculture that had taken place since the late Iron Age in Sweden[1]. Production decreased for one hundred years after the middle of the fourteenth century. Recent research has shown that Sweden was hit harder by the crisis than previously believed (Myrdal, 2003; Lagerås, 2007; Antonson, 2009). This crisis had huge consequences for agricultural practices, and a social crisis arose. Farms were abandoned, a phenomenon that was more widespread in remote, forest districts than in the plains. With a shortage of people, agriculture was transformed and became more efficient. Modern scythes and sickles with longer blades were introduced, animal husbandry acquired more importance, and arable land was transformed to pastures and meadows. From the late medieval period a gradual change from male to female shepherds began (Myrdal 1999). Abandoned farms, a stop in building new houses, and changes in vegetation indicate that the crisis had a large impact in the region (Ersgård,

1. The Iron Age in Sweden was 500-1050 A.D. The medieval period was 1050-1523 A.D.

1997: 64-65, 110; Antonson, 2009; Larsson, 2009: 38). The depth of the crisis was reached around 1450, followed by a period of stagnation before a period of expansion started around 1500.

During the sixteenth and seventeenth centuries, four major factors changed agriculture and rural society. The first was the market, as trade became more important in the peasants' economy. The forest district, particularly the Bergslagen area, was the source of a major increase in Swedish exports at the time. Selling products in a regional market provided opportunities to change agricultural production. However, the peasants were not entrepreneurs who changed their production entirely because of the market; other factors made the change possible. The second factor was how the wars, especially during the seventeenth century, affected the peasant household. Sweden was continually at war from 1560 to 1721. Out of 161 years, the country was at peace only 50 intermittent years, and since many wars were going on at the same time Sweden averaged 1.2 wars per year. Compared with other European countries, Sweden had the highest percentage of its population in the armed forces after 1617. Between 1620 and 1719, half a million men died in the wars. This number corresponded to 30 percent of all adult men in Sweden and Finland, which was part of Sweden at the time. Two aftereffects were a surplus of women and an agricultural system that was dependent on female workers. Military conscription had affected the wooded districts particularly hard, and the labour shortage made it necessary to change agricultural production (Lindegren, 2000: 130-155). Specialising in animal husbandry gave an opportunity for farming to develop.

The third factor was also connected to the wars —increased taxes. As in many other countries in Europe, big changes in taxation took place in Sweden during the sixteenth and seventeenth centuries (Odén, 1967). For example, starting around 1600, peasants in the region of Dalarna had to deliver charcoal and firewood to the big copper mine in Falun (Ersgård, 1997). The increased new kinds of taxes made the peasants more involved in economic issues outside their home districts, and they had to work harder to pay the taxes and still have enough commodities for consumption within their households. An important change in animal husbandry caused by increased taxation was the rise of reindeer pastoralism in northern Scandinavia in the first decades of the seventeenth century (Lundmark, 1982).

The fourth important factor that helped the development of summer farms was the climate —the period of global cooling called the Little Ice Age. The cooler climate affected the agricultural system in two ways. First, it was harder to grow grain at high altitudes and cultivation was replaced by pastures and meadows. Second, transportation was facilitated since snow and ice made it easier to travel in the winter. Transportation was important for trading and for bringing home fodder from remote meadows. A warm winter with-

out snow and ice caused major problems for households (Lamb, 1995: 219-220, 233-235; Ruddiman, 2005: 121; Moberg *et al.*, 2008: 16-17).

Important academic works in the 1970s and 1980s resulted in a changed view of Swedish agriculture during the eighteenth century and into the mid-nineteenth century. What had been viewed as static and unprogressive agriculture was revealed as dynamic and growing. The peasants were highlighted as innovators of agriculture. However, most of the studies concentrated on southern Sweden. Earlier research from northern Sweden had mainly emphasised the iron plow and mechanical threshing as important contributions to agricultural development (Gadd, 2000 and references therein). Until now, summer farms have been almost invisible in discussions of this period.

From the mid-nineteenth century, a swift transformation of agriculture and Swedish society took place. When the industrial revolution began in Sweden around 1870, agriculture became more mechanized and more productive, and people started to leave the countryside. A rapid increase in population after the mid-eighteenth century had led to many landless people in the countryside, and large-scale emigration to America began in the late 1860s (Morell, 2001). The use of summer farms started to decrease from the 1870s. The most common explanations for the decline of summer farms have been shortage of labour, establishment of the dairy industry, increased value of forests, and introduction of the crop rotation system with cultivated grass that made summer farms redundant. It was now possible to alternately pasture and take fodder from arable land (Larsson, 2011).

## 2. DEFINITION

The definition of summer farm is problematic due to the vagueness with which the term is frequently applied. In order to analyse settlement evolution in the region, we must have a specific definition of summer farm, which I infer in the next sections. The most important purpose of a definition must be to provide an analytical tool for understanding the development of a system, area, or region. In this particular case, the aim was to arrive at a definition of summer farm that would facilitate the analysis of the agricultural development of northern Sweden from the sixteenth century to the beginning of the twentieth century.

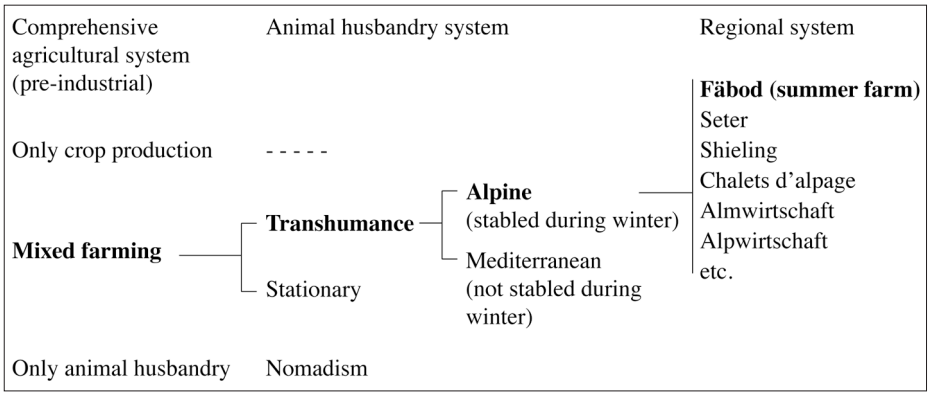
### 2.1. Transhumance

One of the first steps in arriving at a definition is to introduce a hierarchy in which the Swedish summer farm system relates to an international conceptual apparatus, thereby

providing the Swedish summer farms with a contextual content that provides tools for explaining developments in northern Sweden. The international term is *transhumance*. Transhumance was practiced within three broad belts of Northern and Central Europe: the Alps, Scandinavia, and the uplands within the British Isles (Bil, 1990: 1).

British geographer Elwyn Davies (1941: 155) divides transhumance into two distinct types: Mediterranean and Alpine, a distinction which I endorse. The principal demarcation between the two is that in Alpine transhumance, which includes the Swedish summer farms, livestock are stabled in winter (Figure 2). In addition, milk played a central role in Alpine transhumance, especially in Scandinavia, and collecting fodder for the livestock was an essential part of summer activity. However, opinions in Europe differ about how transhumance should be interpreted. For example, German scholars see the summer farm (*Almwirtschaft* in Germany and Austria, *Alpwirtschaft* in Switzerland) as different from transhumance (Jacobeit, 1961: 122).

**FIGURE 2**
**The Swedish summer farms *(fäbodar)* in the system of transhumance**




Source: Modified from Larsson (2009: 80).

Some kind of market integration seems to be a prerequisite for transhumance. The large-scale transhumance in the Mediterranean area during classical antiquity was dependent on a market (Waldherr, 2001: 357). The wool industry during the medieval and early modern periods in Europe used wool from transhumant sheep, e.g. Castilian sheep transhumance (Collantes, 2009). The Mediterranean transhumance required political stability, strong institutions, and an elite with money (Viazzo, 1989: 125-126). Even the smaller-scale transhumance was dependent on a market. The medieval summer farms in Greenland and Iceland produced hides and wool for the European market and brought grain and other items back home. In areas of the Balkan Peninsula, a textile

industry had developed around 1800, and the wool came from transhumant sheep (Brunnbauer, 2004). The demand from large Spanish cities affected livestock raising in some mountain regions around 1900. A shift to cattle specialisation took place in the Pyrenees close to Barcelona and in the Cantabrian mountains due to the expansion of the Madrid market about 350 kilometres away (Collantes, 2009). In some regions of the Alps in the early modern period, hard cheese was part of market-oriented production (Mathieu, 2009: 62). Although expanding markets required more products, production was still to a large extent for self-consumption in many systems. In transhumance systems, the shepherds followed the livestock from villages to pasture grounds and lived there.

The different types of species in the herd created different roles for the peasants. They produced different products and had different values. Thus, change in the animal species (cow, sheep, and goats dominate in the Swedish summer farms) reflects changes in a household's economy.

### 2.2. Summer farms

The term *summer farm* must be defined with reference to a particular time and context, namely the end of the nineteenth century in northern Sweden. In the early 1900s, the former Dialect Archive in Uppsala circulated an extensive questionnaire about the summer farm among users. The definition I use below was derived from the collected replies, which provided a clear picture of how the summer farms functioned at the time[2]. Work on the summer farms involved taking care of the livestock and processing milk. Butter, cheese, and soft whey cheese were produced on the summer farms. During the day, the livestock grazed in the forest surrounding the summer farms; at night they were stabled. Women performed all the work with the livestock at the summer farms, including herding the livestock in the woods, milking, working in the byre, taking care of the milk and processing it, which included washing a lot of dishes. They toiled hard, their work beginning early in the morning and ending late in the evening. They also did different types of handicrafts. Men's work at the summer farm included repairing houses and fences as well as doing the haymaking. There were buildings for humans, buildings for the livestock, a place where they worked with the milk, and a place where they stored the dairy products (Figure 3). The peasants could have one to three summer farms depending on which area they lived in. The summer farm could be located from 5 to 80

2. Extensive questionnaire on the summer farm no. 12 n.d., in the Department of Dialectology and Folklore Research (regional archive), Uppsala.

kilometres from the villages. My definition of the Swedish summer farm reads as follows:

> *A summer farm (fäbod) was a periodic summer settlement for the purpose of using common pastures for grazing and processing milk into non-perishable products. It had buildings for the accommodation of human beings and livestock and for the processing of milk. The summer farm was a specialised feminine workplace and a function within the farm and agriculture.*

The fundamental concept for the definition is that the summer farm is about stockbreeding and not grain production. This connects the Swedish summer farms to the international transhumance concept. Arable farming and collecting winter fodder were important parts of the agricultural system that included summer farms, but were not key activities in the summer farms themselves. Other definitions, which divided them into three types —ordinary summer farms, home summer farms, and half summer farms (Erixon, 1918; Nyman, 1963)— do not accurately describe them.

**FIGURE 3**
**Summer farm in Leksand parish, early 20th century**

Source: Photo taken by Hans Per Persson, Djura, Leksand, Sweden. Permission to use granted by Lars Liss Photo Archive in Gagnef, Sweden.

**TABLE 1**

**Numbers of animals in Färila parish in Sweden, 1571-1971**

| Year | Cows | Sheep | Goats |
|---|---|---|---|
| 1571 | 412 | 103 | 64 |
| 1640 | 544 | 369 | 453 |
| 1770 | 1,044 | 1,697 | 1,404 |
| 1823 | 1,496 | 2,475 | 2,136 |
| 1851 | 1,670 | 2,708 | 2,489 |
| 1917 | 1,992 | 1,772 | 306 |
| 1971 | 639 | 385 | 0 |

Note: The numbers for 1640 are averages from the years 1637 to 1640.

Sources: Älvsborgslösen 1571 and Boskaps- och utsädeslängder 1637-1640 (tax assessment records) for Färila, in the Kammararkivet archives of Riksarkivet (Swedish national archive), Stockholm; Bouppteckningar (probate inventory) 1759-1861 for Färila, in the Ljusdals tingslags häradsrättsarkiv archive of Härnösands landsarkiv (regional archive), Härnösand; Mantalslängder (taxpayer records) 1759-1861 for Färila, in the Gävleborgs läns länsstyrelse, Landskontoret archive of Härnösands landsarkiv (regional archive), Härnösand; Statistiska centralbyrån (1918, 1972).

**TABLE 2**

**Numbers of animals in Klövsjö parish in Sweden, 1633-1971**

| Year | Cows | Sheep with lamb | Goats with kids |
|---|---|---|---|
| 1633 | 124 | 78 | 87 |
| 1772 | 308 | 679 | 486 |
| 1816 | 410 | 949 | 773 |
| 1851 | 523 | 1,210 | 1,002 |
| 1915 | 654 | 713 | 435 |
| 1927 | 530 | 581 | 265 |
| 1971 | 253 | 319 | 0 |

Sources: Jordebok over Jämtland (land register) 1633 for Klövsjö, in the Kammararkivet archive of Riksarkivet (Swedish national archive), Stockholm; Bouppteckningar (probate inventory) 1760-1859 for Klövsjö, in Bergs häradsrättsarkiv archive of Östersunds landsarkiv (regional archive), Östersund; Mantalslängder (taxpayer records) 1760-1859 for Klövsjö, in Jämtlands läns länsstyrelse, Landskontoret archive of Östersunds landsarkiv (regional archive), Östersund; Statistiska centralbyrån (1916, 1928, 1972).

## 3. THE SIZE OF THE LIVESTOCK HERD

The number of livestock provides important information for analysing the summer farms in a historical perspective. The discussion about the process of agricultural change

can be deepened when information is included about the size of herds and the proportion of different animal species at different times. I therefore researched the number of livestock in three parishes —Rättvik in Dalarna, Färila in Hälsingland and Klövsjö in Jämtland (see Table 1-6)— from the sixteenth century to 1971. The source materials were tax rolls from the sixteenth century to 1640, probate inventories from the mid-eighteenth century to the mid-nineteenth century, protocols of the land consolidation reform in Rättvik from around 1830, and modern statistics from the late nineteenth century to 1971. There are no records available about the size of the livestock herds from the 1640s to the mid-eighteenth century. Although, as mentioned earlier, the source materials differ widely, there are methods to make them comparable and obtain reliable estimates of the types of livestock and sizes of the herds (Larsson, 2009: 120-163).

**TABLE 3**
**Numbers of animals in Rättvik parish in Sweden, 1571-1971**

| Year | Cows | Sheep | Goats |
|---|---|---|---|
| 1571 | 1,249 | 835 | 1,092 |
| 1830 | 4,650 | 8,475 | 6,021 |
| 1901 | 4,303 | 2,815 | 1,361 |
| 1919 | 4,152 | 1,937 | 443 |
| 1927 | 3,845 | 674 | 129 |
| 1971 | 436 | 109 | 0 |

Sources: Älvsborgslösen 1571 (tax assessment record) for Rättvik, in the Kammararkivet archives of Riksarkivet (Swedish national archive), Stockholm; Storskifteshandlingar (land consolidation reform records) 1830 for Rättvik, in the Lantmäteriarkivet archive in Falun, (regional archive), Falun; Statistiska centralbyrån (1902, 1920, 1928, 1972).

The livestock underwent considerable changes from the second half of the sixteenth century to the beginning of the twentieth century. The trends are consistent irrespective of whether one examines the number of animals in a parish, in a household, or per capita. The pattern of livestock dynamics in the three parishes has so much in common that it is possible to talk about a shared developmental process. The only differences are that the expansion period starts at different times in the three parishes. The development can be summarized in nine points.

1. There was a great expansion in the number of animals in the three parishes until the middle of the nineteenth century (Tables 1-3).

2. The most striking change from the sixteenth century to 1850 was the huge increase of sheep and goats. At the household level, a new species composition of

**TABLE 4**

**Animals per farm in Färila parish in Sweden, 1571-1917**

| Year | Cows/farm | Sheep/farm | Goats/farm |
|---|---|---|---|
| 1571 | 6.6 | 1.7 | 1.0 |
| 1640 | 5.5 | 3.8 | 4.4 |
| 1770 | 7.5 | 14.7 | 9.8 |
| 1823 | 6.5 | 13.1 | 8.7 |
| 1851 | 5.5 | 10.7 | 7.5 |
| 1917 | 3.5 | 5.6 | 0.5 |

Note: The numbers for 1640 are averages from the years 1637 to 1640.

Sources: Älvsborgslösen 1571 and Boskaps- och utsädeslängder 1637-1640 (tax assessment records) for Färila, in the Kammararkivet archives of Riksarkivet (Swedish national archive), Stockholm; Bouppteckningar (probate inventory) 1759-1861 for Färila, in the Ljusdals tingslags häradsrättsarkiv archive of Härnösands landsarkiv (regional archive), Härnösand; Mantalslängder (taxpayer records) 1759-1861 for Färila, in the Gävleborgs läns länsstyrelse, Landskontoret archive of Härnösands landsarkiv (reginal archive), Härnösand; Statistiska centralbyrån (1918).

**TABLE 5**

**Animals per farm in Klövsjö parish in Sweden, 1633-1915**

| Year | Cows/farm | Sheep/farm | Goats/farm |
|---|---|---|---|
| 1633 | 5.9 | 3.4 | 3.4 |
| 1772 | 8.7 | 18.3 | 10.7 |
| 1816 | 7.0 | 15.2 | 10.8 |
| 1851 | 6.3 | 14.4 | 10.6 |
| 1915 | 4.6 | 3.0 | 1.8 |

Sources: Jordebok over Jämtland (land register) 1633 for Klövsjö in the Kammararkivet archive of Riksarkivet (Swedish national archive), Stockholm; Bouppteckningar (probate inventory) 1760-1859 for Klövsjö, in Bergs häradsrättsarkiv archive of Östersunds landsarkiv (regional archive), Östersund; Mantalslängder (taxpayer records) 1760-1859 for Klövsjö, in Jämtlands läns länsstyrelse, Landskontoret archive of Östersunds landsarkiv (regional archive), Östersund; Statistiska centralbyrån (1916).

the herds was established. During the sixteenth century, the cow was the most common species in the herd while the second most common was the goat, followed by sheep. In the eighteenth century the sheep was by far the most common species in the herd, followed by goats and finally cows.

3. The number of animals per household increased until the end of the eighteenth century (Table 4-6).

4. From 1750 to 1860, farms in Färila and Klövsjö underwent widespread division among household members. The number of animals on each farm did not decrease as rapidly as the size of the farms, measured in taxation assessments. This means that the relative wealth held in livestock increased at the farm level.

5. In all three parishes, the number of animals per capita remained at a high level until the beginning of the nineteenth century. While a minor decrease in the number of cows per capita was observed, the numbers of sheep and goats increased.

6. The number of landless households in both Färila and Klövsjö increased rapidly after 1750. Crofters and soldiers acquired more animals per household, and the proportion of animals owned by landless people increased dramatically. The landless households owned 25 to 35 percent of all animals in Färila around 1850.

7. The number of goats and sheep decreased rapidly after 1850. The decrease of goats was especially dramatic.

8. The number of cows in each parish increased slowly or stagnated after 1850. After about 1930, the number of cows decreased rapidly.

9. During the nineteenth century, the numbers of animals per household and per capita decreased intensely.

**TABLE 6**

**Animals per farm in Rättvik parish in Sweden 1571, 1830 and 1901**

| Year | Cows/farm | Sheep/farm | Goats/farm |
|---|---|---|---|
| 1571 | 4.3 | 2.9 | 3.7 |
| 1830 | 4.2 | 7.6 | 5.4 |
| 1901 | 2.3 | 1.5 | 0.7 |

Sources: Älvsborgslösen 1571 (tax assessment record) for Rättvik, in the Kammararkivet archives of Riksarkivet (Swedish national archive), Stockholm; Storskifteshandlingar (land consolidation reform) for Rättvik 1830 in the Lantmäteriarkivet archive in Falun, (regional archive), Falun; Statistiska centralbyrån (1902).

In conclusion, such great changes in the number of animals and in the species composition of the herds could not have taken place without having an effect on the organisation of stockbreeding as well as the agricultural system as a whole. Summer farms made the expansion possible. Only in a few cases were new permanent settlements established on

former commons. Thus, the great increase of the livestock indicates a powerful development of the summer farms. The similarities between the three parishes also indicate that there was a common agricultural system in the region. One of the main features of this system is that stockbreeding was an essential part of the organisation of the agricultural system. Two significant differences made the agricultural system in northern Sweden distinct from that in the south. First, stockbreeding expanded in the north from the eighteenth century to 1850 while it stagnated in southern Sweden during this period (Gadd, 1983; Dahlström, 2006). This had huge consequences for the rest of the agricultural system. Second, after 1850, a crop rotation system with cultivated grasses was introduced in Sweden. This created a preference for the agricultural system on the plains, which resulted in a rapid increase in the number of cows in southern Sweden but not in the summer farm region (Morell, 2001: 249; Larsson, 2009: 198).

## 4. MANAGEMENT OF COMMON-POOL RESOURCES

The summer farms in the parish of Leksand in Dalarna were examined in greater detail to look more closely at resource management (Larsson, 2009: 199-303)[3]. The source material for this study was court records, which recorded disputes and the way the court tried to resolve them. Court records are the only sources that enabled me to follow the management of summer farms in one region from the sixteenth century to the late nineteenth century. I used Elinor Ostrom's theories about the management of CPRs as a guide. An important question is how changes in the management of commons reflect changes in the summer farms as well as changes in the agricultural economy. From the seventeenth century to the nineteenth century there was a distinct development in the management of the summer farms in Leksand. There is a good correlation between this development and the eight principles formulated by Elinor Ostrom as prerequisites for a stable CPR arrangement (Ostrom, 1990: 90)[4].

3. I used court records from Leksand and Gagnef, two adjacent parishes. I had access to unique excerpts from Leksand court records made by Dr. Sigvard Montelius in the late 1960s. His excerpts embrace the time from 1660 to 1870 (Sigvard Montelius, unpublished archives, private collection, Falun, Sweden). Dr. Montelius wrote the excerpts while researching for his book *Leksands fäbodar* (Montelius, 1975). I also used Gagnef court records from 1544 to the 1730s (Andersson 1984) to begin the investigation as early as the mid-sixteenth century. I verified that the developments were comparable in the two parishes (Larsson, 2009: 229). Because 90 per cent of the court records are from Leksand, I refer to the whole material as court records from Leksand.

4. Garrido (2011) has revised some statements made by Ostrom on the basis of the Mediterranean irrigation systems.

During the period of intense summer farm practice in Leksand, clear definitions were established for the boundaries of each summer farm and for which summer farm was used by which household. The summer farm community became organised in the mid-seventeenth century. Each community organised its own activities and made rules for the congruence between appropriation and provision. In order to use the pastures more efficiently while making a sustainable withdrawal of resources from them, rules were formulated for the number of livestock and the duration of pasture utilisation. During the eighteenth century, the temporal and spatial use of commons increased as peasants started to move between different summer farms. The development of summer farm communities is an example of how the members of the organisation were part of the decision-making process and thereby assumed greater responsibility for the management of the summer farm. Large summer farm communities were divided into groups, with each group making decisions that did not affect the whole summer farm community. The communities also had effective monitoring and sanctions for appropriators who did not respect community rules. The court acted to resolve conflicts within and between communities and between communities and villages. The primary role of the court was not to punish violators but to maintain the agricultural system (Larsson, 2009: 289-294). Based on the investigation of the court records, I developed a chronology for the summer farms in the parish of Leksand.

The first phase, establishment, lasted from the beginning of the sixteenth century to the second half of the seventeenth century (1500-1680) and was characterised by the establishment of new summer farms. Summer farm communities were also established during the end of this period, and rules concerning the movement of livestock from the villages to the summer farms were formulated.

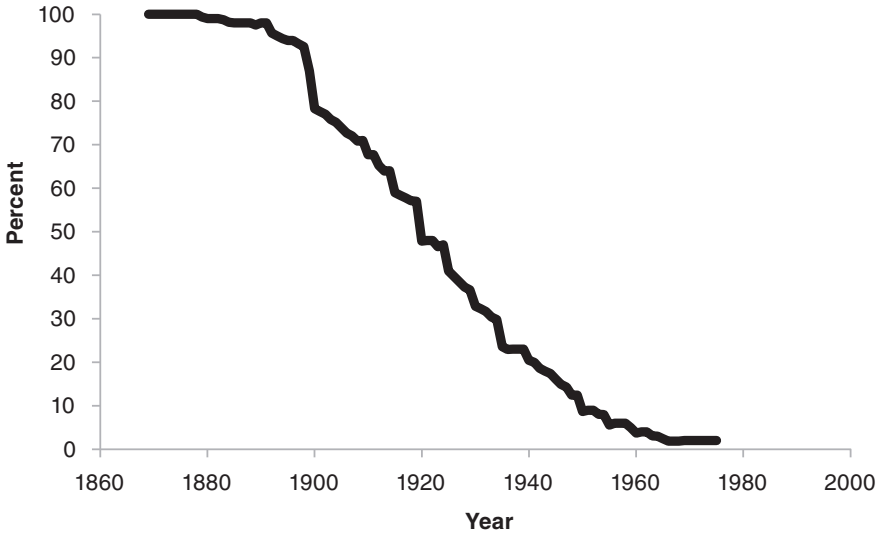
The second phase, stabilisation, is divided into three stages: organisation, consolidation, and stagnation. The first of these stages, organisation, lasted from the second half of the seventeenth century to 1730 (1680-1730). From this time onward, all peasants were obliged to have a summer farm. Nobody was allowed to remain in the village with their animals when the other peasants moved to the summer farms. During this time there was a sharp increase in the utilisation of the summer farms. The rules about moving at the same time to the summer farms were reinforced. The power of the summer farm communities was strengthened and their cases constituted a significant part of the district court sessions. The pasture grounds associated with each summer farm were regulated in detail, and the borders of the summer farms were clarified. New summer farms, far from the villages, were established. The number of goats and sheep increased, and the households thereby increased the total number of animals.

The second stage, consolidation, lasted from 1730 to 1800. During this period new summer farms were still being established on the outskirts of the parish. However, they were all established before 1750. During the eighteenth century a two-summer-farm system was set up in the parish. This allowed for an intensified use of the pastures when geographical expansion was no longer possible. Clearance and burn-beating were practiced to get better pastures, and pastures were enclosed from the common pasture grounds. The summer farm communities formulated more detailed rules. There were many disputes among summer farm communities and between summer farm communities and villages regarding the pastures. The summer farm communities tried to protect land they considered as theirs. To protect the pastures, fencing the boundaries between common pastures belonging to villages and pastures belonging to summer farms became a widespread practice towards the end of the eighteenth century. Sometimes fences were also erected between summer farm pastures. However, a cheaper and more common way to protect an area was to make the boundaries more visible by clearing trees and vegetation to create a wide path around the area and to impose fines when people outside the summer farm community were trespassing with animals. Written agreements for the summer farm communities became more common at the end of this stage. The written agreements were confirmed by the local court and are comparable to village by-laws. The number of goats and sheep per household had increased since the first stage while the number of cows remained almost the same. From the eighteenth century onwards, sheep were the most common animals in the herds. During the second half of the eighteenth century, some peasants started to find summer accommodation for their cows outside the parish, especially in the Forest Finn colonisation area in western Dalarna.

The third stage, stagnation, lasted from 1800 to 1870. After the pastures were enclosed in Leksand (1819-1830), many new summer farms were established, and during this period more summer farms were in use than ever before or after. Views of the summer farms during the nineteenth century differ, as some researchers date the climax of the summer farms in the second half of the nineteenth century (Montelius, 1975: 116-118; Söderberg, 1999: 141). Nevertheless, I argue in favour of the view that the nineteenth century in Leksand was a period of stagnation because there was no further development of the summer farms. The summer farm communities tried to avoid overgrazing by detailed regulation and more monitoring. With the enclosures, ownership and use of the pastures had been separated, and the pastures were no longer commons. The use of the pastures was still a collective activity, but a way out of the system had been opened. The peasants in Leksand made changes in their organization to maintain a sustainable summer farm system. Nevertheless, livestock per household decreased during the nineteenth century and the summer farm system became too expensive to maintain. When a chance to leave the system came, the abandonment started.

The third phase, discontinuation, started around 1870 when peasants in Leksand began to leave the summer farm system. In the first two decades, the decline was rather slow but from the 1890s it was rapid. More than 50 per cent of all summer farms were abandoned by 1920 (see Figure 4).

**FIGURE 4**
**The abandonment of summer farms in the parish of Leksand, 1869**[5]




Source: Diagram created from Montelius (1975), Table 23.

## 5. DISCUSSION

By examining the summer farms as part of an agricultural system it is possible to explain how they developed. To understand the development of the summer farms one has to focus on the crisis of the previous agricultural system. The development of summer farms in early modern Sweden was a result of changes in society and the agricultural system after the late medieval crisis. Stockbreeding thus became more important. As a result of the crisis, the peasants used livestock more extensively to graze abandoned land, thereby protecting their right to possess the land.

5. The abandonment of summer farms in the parish of Leksand visualized as the percent of all summer farms in 1869. They are considered abandoned when all users have left. Summer farms often contained many units *(fäbodgård)*, each with its own buildings, and large ones could have as many as 60 units.

The crisis turned into development because of the expanding regional market for agricultural commodities, including hides and wool, when the region became connected to a global market. Bergslagen was the first region in Sweden to become an important area for the production of copper and iron, and the production of provisions, clothes, hides, and tallow was necessary. A regional market developed in northern Sweden.

The expansion of the summer farms during the sixteenth century was not only a result of greater demand for animal products. It was also a result of the general expansion of agriculture in the whole of Sweden. Key features in this expansion were new settlements, dynamics of marginal lands, the growth of secondary occupations, and improvements in transportation. The expansion of summer farms was part of a greater use of marginal land (Söderberg and Myrdal, 2002: 224). The oldest records of summer farms in Dalarna are from the 1540s, in Hälsingland from the 1580s, and in Jämtland from about 1600. The seventeenth century saw a major boom in mining and ironworks over large areas, resulting in an even greater use of marginal land. Also, an increase in summer farms on commons in Norway during the seventeenth century was connected to more mining and lumber mills (Reinton, 1961: 147, 151). These changes affected the utilisation of the vast forests in Sweden and can be examined in a number of ways discussed below.

### 5.1. A new institution

The transformation of summer farms from pre-1650 individual enterprises to established communities occurred in the second half of the seventeenth century in many parishes in Dalarna, and is an example of an important change in their organisation. A new institution for governing summer farms was established. Coincidentally, the first summer farm communities in Norway also appeared during this time, with the first records from the beginning of the eighteenth century (Reinton, 1955: 45-46). A new governing rule came into effect at the same time: all peasants had to move to the summer farms on a certain day. During the second half of the seventeenth century, all peasants were forced to have a summer farm and it was forbidden that their livestock stayed in the village.

### 5.2. Female workforce

An important change that took place during the seventeenth century was when the summer farm communities started to hire women to manage the animals at the summer farms. By doing so the peasants acquired skilled labor and the members of the household could

work on other tasks. Also, the war economy in Sweden during the seventeenth century affected the peasants with heavy losses of men and high taxes. At the same time, climate change made it harder to grow grain in marginal areas and paved the way for an increase in stockbreeding. The shortage of men in the seventeenth century and the great knowledge of stockbreeding among women led to an expansion of the summer farms. The transformation of herding from a male task to an occupation for women had started after the medieval crisis and culminated in the seventeenth century.

When women had to perform more of the work, it was necessary to find an organisation that was efficient. The solution was a specialised female workforce that spent the whole summer taking care of the animals and processing milk into non-perishable products. Peasants worked together in the summer farm communities and the workforce in stockbreeding was thereby optimised, enabling a geographical expansion. The more efficient use of female work on the summer farms allowed for more efficient work in other parts of agriculture and for secondary occupations. The summer farms and the agricultural development in northern Sweden were therefore part of a general Western European trend whereby households in the early modern period made decisions that increased the supply of market commodities and labour and work became more specialized (de Vries, 1994). The increase in work was connected to an increase in trade, and the Swedish peasants were involved in this trade. The peasants from northern Sweden were especially well known for their trading journeys during winters (Nilsson, 1978).

### 5.3. Land use

The specialisation in stockbreeding was also a specialisation in land use. In the central parts of the parishes, there was a marked increase in the number of households in the villages during the nineteenth century. At the same time, the number of households in the more wooded parts of the parishes decreased or became stagnant, and a lot of summer farms were established in those parts of the parishes. Thus, the expansion of summer farms partially displaced woodland villages. Grazing pastures and meadows were located on the outskirts of the parishes while villages and fields were in the central parts. The reason for this was not only due to natural conditions. It was a strategic choice made by the peasants to use the landscape resources in an efficient and sustainable way.

In practice, all land was utilised for agricultural purposes during the eighteenth and nineteenth centuries. The peasants found everything they needed for successful stockbreeding in the vast forests in Dalarna and southern Norrland: good pastures, water, and firewood for making butter, cheese, and soft whey cheese. Clean water was a crucial re-

source for a summer farm. Water was needed to cool milk and to wash the vessels. Firewood was also crucial for boiling water and making soft whey cheese. The combination of cows, goats, and sheep was a way to get the most out of the pastures, and by tending the livestock they used the pastures very efficiently. An agricultural system was established that lasted until the beginning of the Industrial Revolution in Sweden after 1870.

### 5.4. Soft whey cheese

The change to an increasing number of summer farms distant from the villages caused a change in the products that were made. Soft whey cheese was a new product in Sweden and Norway during the seventeenth century (Espelund 2000). It was made of the whey that was left after making butter and regular cheese. The boiling of whey took many hours and consumed a lot of firewood, which was plentiful in the forests. The cheese was also durable and easy to transport long distances, and it enabled the use of all the milk at the summer farm. Soft whey cheese is probably the most distinctive product from the summer farms in Sweden and Norway.

### 5.5. Animals and market integration

The huge increase in sheep and goats was a result of the growing market integration. Goats and sheep were important sources of hides and wool, and by selling products from these animals the peasants acquired earnings. Goats were especially valuable because their hides were used in miners' clothes and goat milk and cheese were an important part of miners' foodstuff (Szabó, 1970: 62). During the sixteenth century, goats were therefore common in the district of Bergslagen, where there were a lot of smelting houses, blast furnaces, and mines. It is therefore not a coincidence that the first records of summer farms in Sweden appeared in this area. It is difficult to keep large numbers of goats close to fields, due to their propensity to go through or over fences and eat crops, and the forests in the mining areas provided good conditions for the summer farms. Charcoal burning and collecting large amounts of firewood opened up the forests for grazing.

Collecting firewood and making charcoal improved the pastures, and as the forest was utilized more it became more open and thus a more secure place for people and animals to spend the summer in. In spite of the great increase in sheep and goats, cows were still the most important animals for the household economy both in value and in production of milk, meat, etc.

Secondary occupations were also connected to the summer farms and the expansion of stockbreeding. Making wool and hides were important secondary occupations, and the increase of animals and subsidiary pasture rotated with crops influenced the production of flax and linen in Hälsingland and Ångermanland. There were also connections between many other secondary occupations and the increasing number of animals. Two examples are the production of scythes (to cut hay) in Lima and the production of grindstones (to sharpen the scythes) in Orsa, both parishes in Dalarna. The increase of summer farms created an innovative agricultural system that in many respects was ahead of the agricultural system in southern Sweden.

### 5.6. Winter fodder

The bottleneck in stock breeding in northern Sweden was the winter fodder. The animals were stabled for most of the year; in the mountain region, the livestock were often stabled eight out of twelve months. The collection of fodder was therefore an important job, and in all agricultural systems involving alpine transhumance, the handling of fodder made up a great part of the work that had to be done during the short summer. The production of winter fodder had to keep up with the increase of animals, so action was taken to improve fodder production and a lot of different kinds of fodder were used, e.g. hay, leaf, lichen. One of the central changes was the management of pastures, which were often rotated with crops. Pasture rotation *(lindbruk)* was widespread in the summer farm region, and the period of great expansion throughout southern Norrland and Dalarna apparently happened in the eighteenth century. Around 1750, *lindbruk* was practiced in most parts of Dalarna, Gästrikland, Hälsingland, Medelpad, and Ångermanland, as well as in much of Jämtland and eastern parts of Härjedalen. In many places it was more widespread than traditional arable and ley farming. The important thing was for the pasture to be rotated on a regular basis, the aim being to boost the yield of ley farming while at the same time facilitating the cultivation of other important crops, e.g. barely, flax, peas, rye. The crops included and the length of rotation periods show regional variations. However, different types of *lindbruk* were so similar that all the studied cases can be inferred to represent the same type of farming practice (Larsson, 2005).

### 5.7. Tools and equipment

During the eighteenth century, peasants in northern Sweden also made great improvements to their tools and equipment. Important improvements were mechanical threshing and water-powered flax-processing plants. Both were labour-saving innovations. The iron

plow was an innovation by farmers that was first introduced in Dalarna in the eighteenth century. The iron plow facilitated the adoption of *lindbruk* and quickly spread to southern Norrland. The harrow was also developed with more and improved parts of iron (Jirlow, 1955; Wiking-Faria, 1982; Gadd, 2000: 246; Fiebranz, 2002).

The differences between southern and northern Sweden can be explained by the large demand for agricultural products in the north combined with competition for labour in the forests and linen production. A great increase in population and a substantial non-agrarian sector made it profitable to increase agricultural production, even though conditions were not the best. For a long time, the region experienced a shortage of labour, and this drove technical developments.

### 5.8. Division of farms

The division of farms among household members was another factor that differed between agriculture in the north and that in the south. In the north, farm division went further than in the south and continued during the nineteenth century, when an amalgamation of many farms started in the south (Herlitz, 1974: 182; Peterson, 1989: 23, 178; Rosén, 1994: 120; Fiebranz, 2002: 182, 189; Ulväng, 2004: 81; Lindström, 2008: 49; Larsson, 2009: 178-179). The reasons for the differences between northern and southern Sweden are connected to how the economy of the peasants was constructed. Despite far-reaching division of farms, agriculture in the north was in many respects ahead of agriculture in the south during the eighteenth century and up to 1850, and the question is how this was possible. Three fundamental and interconnected reasons can explain how land fragmentation was driven so far. The first was the great importance of forests for the household economy, the second was the organisation of stockbreeding, and the third was a division of labour whereby women's work was necessary for the development of the economy. It was thus possible to use the landscape in an efficient way, which led to the development of complementary businesses within a household that produced commodities for a market. Because the forests were huge and stockbreeding was the foundation of the household economy, it was possible to divide the farms without significantly decreasing the number of animals. The economic power of the farm could be also maintained even when it was divided. All households, whether peasants or landless, had the right to use the outfields for grazing. However, the number of animals each household had could not exceed the amount of winter fodder they could collect. The use of the outfields also needed to correspond with the share each farm had in the village. With summer farms it was possible to use the vast, distant forests for grazing and therefore breed more animals than if the animals had grazed in the forests around the villages and on the infields

after the harvest. Because of the outfields, the division of farms did not negatively affect the household economy.

A prerequisite for the division of homesteads was the establishment of summer farms, which were the foundation of a rapid expansion of settlements. The summer farms, especially those far from the villages, specialised in stockbreeding with a skilled and trained labor force of women managing the livestock. The leap in agricultural development in northern Sweden would not have been possible without the female workforce on the summer farms.

### 5.9. Decline

In the nineteenth century, the agricultural system in northern Sweden was facing many problems. The number of animals at the homesteads was decreasing. The summer farms' characteristic mix of animals ceased and cows became the most abundant animal in the herds, driving the summer farm system closer to a crisis. This crisis was not a societal crisis that affected all production in society. The reason the crisis affected the summer farms region so hard was because the major resource for agriculture in the north, the vast forests, lost its importance from the point of view of agricultural use. The forests and mountains had been the reason for the increase in animals and improvements in the other branches of agriculture and secondary occupations. When livestock began to graze on arable land and fodder was also collected from fields, the advantage of the agriculture in northern Sweden ceased to exist. The whole agricultural system from the sixteenth and seventeenth centuries disappeared and was replaced by a new system.

Earlier research has focused on changes in society after 1870, such as industrialisation, to explain why summer farms were abandoned. It has been stressed that the main reasons for the decline were shortage of labour, development of the dairy industry, urbanisation, crop rotation, and the increasing non-agrarian value of the forests (Frödin, 1925: 188-199; Montelius, 1975: 202; Morell, 2001: 230-231; Kardell, 2008: 22-24). This picture can be supplemented. The number of sheep and goats decreased after 1850, not because of the high value of the forests but rather because the demand for products from goats and sheep decreased rapidly. This was mainly caused by changes in the textile industry and in the distribution of products after 1850. Since the increase in goats and sheep was a reason to establish summer farms in the first place, the decrease of these animals was a reason for their abandonment. The way summer farms were organised was another reason for their rapid decline. Two factors were important. Firstly, collaboration was necessary for the management of summer farms. When summer farms became less profitable

and peasants started to abandon them, the remaining peasants could not reduce their costs. Instead, they had to increase their contributions and costs for maintenance, transportation, and labour. In the second place, the number of strict rules concerning summer farms increased. Peasants started to leave the summer farms rapidly when the cost of complying with the rules was higher than the advantage of keeping a summer farm. The transaction costs for the summer farms became too high.

## 6. CONCLUSION

The expansion of summer farms in Sweden started in the sixteenth century and was part of a greater use of marginal land. The late medieval crisis hit the old agriculture system hard, but the crisis was turned into development because of an expanding regional market, a cooler climate, higher taxes, and from the seventeenth century, the war economy. During the seventeenth century, the number of summer farms increased rapidly, and it became compulsory for peasants to have summer farms starting in the second half of the century. A special female workforce at the summer farms made their geographical expansion possible, and the vast forests could be fully used as pastures. With more of the household economy coming from the outfields and a more intense use of them, it was possible to divide the farms among household members while still maintaining economic power. An increasing number of farms, animals, and summer farms put pressure on other parts of agriculture. During the eighteenth century, a rapid development of agriculture took place, and despite harder natural conditions, the agriculture in northern Sweden was in many respects ahead of that in southern Sweden, e.g. fodder production and tools. In the second half of the nineteenth century, however, the number of summer farms started to decline. Factors behind the decline were the introduction of crop rotation, the development of the dairy industry, and the increasingly non-agrarian value of the forests. Also, sheep and goats lost their value as important species of the herds after 1850, and the transactions costs for summer farms became too high. The crisis hit the summer farm region hard because the major resource for agriculture in the north, the vast forests, lost their role as important land for agricultural use.

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