

The road to modern forestry: dealing with deforestation in nineteenth-century southern Sweden*

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Abstract

Previous research has connected progressive deforestation in the seventeenth and eighteenth centuries with an increase in the demand for timber for building and wood for fuel and a failure to replant. This paper investigates a southern Swedish region during the nineteenth century, where a tendency to deforestation and a low standard of forestry had prevailed for a long time despite restrictions on felling and attempts to promote replanting. We show that a new type of agricultural organization – the *Hushållningssällskapet* – encouraged the replanting of woodland and the improvement of forestry practice. It supported the enforcement of State policy, but also protected the interests of farmers, not all of whom were persuaded that replanting woodland was a good use of their land. The paper provides new evidence for the state of forestry and the active role of agricultural organizations during a crucial period of agricultural transformation.

In Sweden, as elsewhere, the increased demand for timber for building and wood for fuel in the seventeenth and eighteenth centuries caused deforestation and provoked a struggle between competing interests – including the State – to control the resources of the forest.¹ This paper investigates Malmöhus county in southern Sweden during the period between 1800 and 1870 (see Figure 1), an area in which deforestation and a generally poor standard of forestry had prevailed for a long time despite restraints on felling and attempts to encourage

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¹ See e.g. Paul Warde, *Ecology, economy and state formation in early modern Germany* (2006); P. Eliasson, *Forests, power and people. An environmental history of the Swedish forest 1800–1875* (2002); J. Radkau, 'Wood and forestry in German history. In quest of an environmental approach', *Environment and History* 1 (1996), pp. 63–76; D. Worster, 'Transformation of the earth. Towards an agroecological perspective in history', *J. American Hist.* 76 (1990), pp. 1087–1106. Paul Warde, 'Fear of wood shortage and the reality of woodland in Europe, c.1450–1850', *Hist. Workshop J.* 62 (2006), pp. 28–57 was drawn to my attention too late to be taken into account on this occasion, but it provides an informative and relevant discussion of many of the questions addressed here.

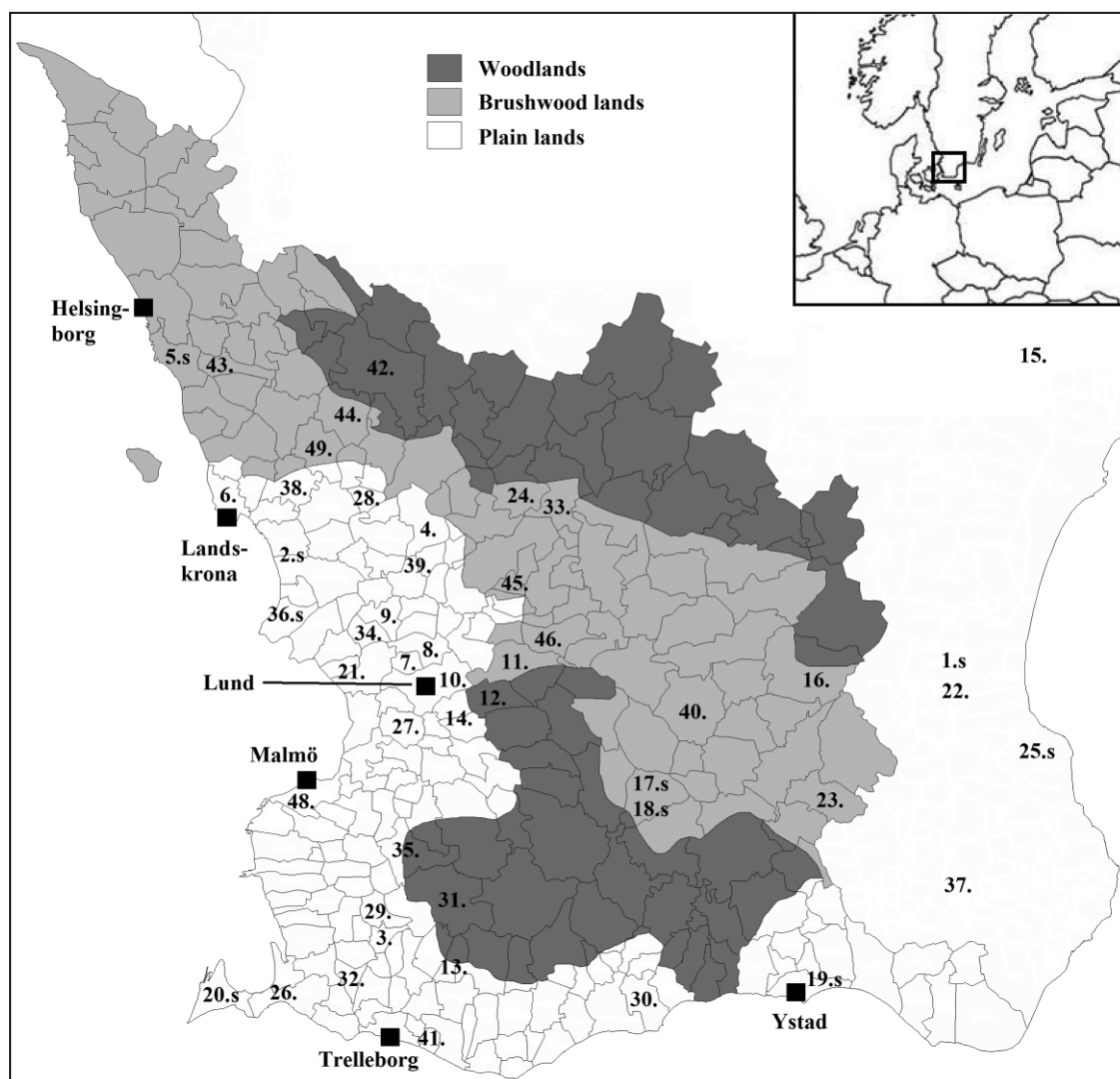


FIGURE 1: The area of investigation and location of tree plantations, c.1814–60

Note: location of tree plantations indicated according to numbering in Table 1. The map shows major towns, parish borders and ethnographic regions according to Campbell. An added 's' after the number indicates a plantation specifically aimed at counteracting shifting sand.

Source: Campbell, *Skånska bygder*.

the replanting of woodland. The total area of woodland finally started to increase from the 1860s, as the planting of conifers took hold in some parts of the county and the traditional multipurpose use of (mainly) deciduous woodland disappeared.

A new type of agricultural organization emerged in Sweden from the late eighteenth century. These were the regional agricultural societies called *Hushållningssällskap* (hereinafter HHS). Similar societies were founded all over Europe and even internationally, and they shared the

paramount purpose of improving agriculture.² Previous research has investigated aspects of these societies, but our knowledge of their impact on agricultural development remains limited.³ This justifies our paper, which is split in two. First, it investigates how the HHS discussed deforestation and poor forestry practices and the measures it recommended. Second, it assesses the success of these measures.

The primary source is the archives of the regional agricultural society, *Malmöhus läns hushållningssällskap*, whose documents on forestry from the founding of the society in 1814 and to the 1860s have been examined for this paper.⁴ The archive consists of a mixed body of documents such as petitions, instructions and protocols (minutes), largely unsorted and sometimes fragmentary. This sometimes makes it difficult to follow a certain case or argument from beginning to end. Because of the organizational structure of HHS (discussed further in a subsequent section), many differing opinions on the state of forestry are represented in the archive. This allows us insights into contemporary opinion of a sort which it is impossible to find elsewhere.

The remainder of the paper has the following structure. Section I explains the background and presents previous research on forestry with a focus on the region and period under investigation. Section II outlines the emergence, purpose and organization of HHS. Section III describes its discussions of forestry and the practical steps that the HSS took to encourage it. Our conclusions follow in section IV.

I

The farmers' entitlement to forest resources was strictly regulated in Sweden as elsewhere. The privileges of the Crown and the nobility placed restrictions on tenants and freeholders alike, and the property structure of the open field system meant that the individual farmer was subject to the order of the village community (*byordningen*).⁵ Forestry policy in Sweden was determined by the requirements of the navy and the mining industry, both of which enjoyed privileges due to their importance respectively for warfare and the export economy. The forest ordinance of 1734 (*1734 års skogsordning*) has been described as the culmination of a restrictive policy.⁶ It confirmed the existing prohibition on farmers felling oak and beech

² See e.g. J. Mokyr, 'The intellectual origins of modern economic growth', *JECH* 65 (2005), pp. 285–351; O. Kährström (ed.), *Regionala främjare av de areella näringarna under 200 år* (2002); K. Hudson, *Patriotism with profit. British agricultural societies in the eighteenth and nineteenth centuries* (1972).

³ F. Eriksson and P. Eriksson (eds), *Perspektiv på lantbrukets organisering – historiografi, begreppshistoria och källor* (2016); G. Fertig (ed.), *Social networks, political institutions, and rural societies* (2015); L. Miskell, 'Putting on a show: the Royal Agricultural Society of England and the Victorian town, c.1840–1876', *AgHR* 60 (2012), pp. 37–59; J. Marjanen, *Den ekonomiska patriotismens uppgång och fall. Finska hushållningssällskapet i europeisk, svensk och finsk kontext 1720–1840* (2013);

J. Stattin, *Hushållningssällskapen och agrarsamhällets förändring – utveckling och verksamhet under 1800-talets första hälft* (1980).

⁴ The complete archival reference is Regional Archives Lund (LLA), Hushållningssällskapet i Malmöhus län, huvudarkivet (HHS), volym A1 (protokoll). Henceforth, the archival reference is HHS, A1:X.

⁵ Woodland was usually used by the village as common, but the more valuable types of trees were sometimes cultivated on the arable land and meadows of the infields.

⁶ P. Eliasson and G. Hamilton, "Blifwer ondt att förena sigh" – några linjer i den svenska skogslagstiftningen om utmark och skog', in *Skogshistorisk forskning i Europa och Nordamerika* (1999), p. 64.

trees without a licence granted after an inspection by an officer appointed by the crown, and extended the ban to include maple, lime, elm and ash. The ordinance stated that freeholders were allowed to use wood growing on their land for household use provided they did not exhaust it, but that farmers were obliged to use blown-down trees, dry branches, stubs and the like for firewood before felling healthy trees. The ordinance also ordered that two trees of the currently most valuable type should be planted in place of a felled tree of the same species. The ordinance of 1734 ordered dwellers on homesteads lacking wood to plant at least 12 willow, elm, lime or maple trees for each *matlag*.⁷ However, an amendment of 1739 enabled farmers to avoid the obligation if their land was not suitable for planting trees. The restrictions, sometimes vague and sometimes very specific,⁸ were difficult to enforce in practice.

The eighteenth century brought intensified demand pressure on forest resources. Timber exports tripled between 1685 and the late 1730s and continued to run at a high level. The Swedish population (and so the demand for fuel) doubled between 1720 and 1830. Meanwhile, the political influence of farmers increased and over time they secured the alleviation of some of the restrictions. Previous historians have described how farmers sought an increased freedom to utilize both land and commons as they wished.⁹ The increased exploitation of forest resources prompted a debate on how forestry might be improved. It focused on not merely replacing felled timber but reforestation through replanting. The State issued ordinances for several Swedish counties in the eighteenth century, including one for our area of investigation in 1779.¹⁰

Farmers' right of disposition to land was strengthened during the nineteenth century, as existing restrictions on its use were progressively lifted. One example was that freeholders gained the freedom to dispose of beech trees and oak trees growing on their land as they wished in 1793 and 1830 respectively. Rapid population growth and intensified demand for new land to cultivate – in combination with the removal of the restraints on farmers – all contributed to accelerated deforestation. A radical enclosure reform, which spread rapidly following the introduction of the *laga skifte* ordinance in 1827, meant that landowners could divide and privatize village commons. Often, but not invariably, it accelerated the clearance of forests.¹¹ Contemporary observers and previous researchers have described the intensified deforestation of the time in terms of an impending crisis, but there is no consensus concerning the extent

⁷ The Swedish term *matlag* roughly means a group of people fed within the same household.

⁸ There was, for instance, a ban on using birch branches for decoration.

⁹ S. Granér, *Samhävnd och rågång. Om egendomsrelationer, ägoskiften och marknadsintegration i en värmäländsk skogsbygd, 1630–1750* (2002); Eliasson and Hamilton, “*Blifwer ondt*”.

¹⁰ M. Bohman, *Peasants, production patterns and paths of development during the agricultural transformation in Southern Sweden (Scania), ca 1700–1870* (2010), p. 133; Eriksson and Hamilton, “*Blifwer ondt*”, p. 67.

¹¹ One aim of the enclosure reforms was to improve forestry, but previous research has claimed that short-term effects were the opposite: see e.g. R. Pettersson, ‘Äganderätten, laga skiftet och skogarnas avtagande’, in M. Widgren (ed.), *Äganderätten i lantbrukets historia* (1995), p. 130ff. Other research has also argued that the standard depiction of how collective rights, exemplified by a well-established common-property regime of forestland, were transformed into individual rights has been oversimplified: see J. Larsson, ‘Boundaries and property rights: The transformation of a common-pool resource’, *AgHR* 62 (2014), pp. 40–60.

or even existence of such a crisis.¹² Meanwhile, a tug of war continued as the farmers' struggle for liberal rights of disposition came into conflict with the State's attempts to regulate felling and replanting. A break occurred in mid-century – following new and more scientifically based insights into, for instance, the ecological consequences of deforestation – when a new form of forestry policy took shape, which emphasized the role of the State as the active owner of forests, setting a standard in forest management for others to follow. With the establishment of a new executive forest agency in 1859 (*Kungliga Skogsstyrelsen*), the State took the responsibility for the development of a natural resource over the long term from individuals whose concern was arguably focused on the short term. It was however a somewhat peculiar development, since the period in question was generally characterized by economic liberalization.¹³ The State's policy therefore shifted from strict regulation in the eighteenth century (which failed to counteract increasing deforestation) to a more supportive and educational role. Meanwhile, other factors played a role. A separation occurred between silviculture and agriculture, as the traditional multipurpose woodlands gave way to denser woodlands whose sole purpose was to produce timber. Furthermore, changes in the international trade in timber from the 1870s ended the boom in sawmill exports that had caused the sometimes ruthless exploitation of forests, especially in the northern parts of Sweden.¹⁴ The total area of wooded land in Scania did not start to increase until the 1860s, when plantations of fir and pine trees – mainly in the northern parts of Scania – replaced the original oak and beech tree forests.

The state of forestry in our area of investigation shares many similarities with this general account, but also some important differences. Deforestation in Malmöhus county, as in neighbouring coastal regions, was mainly a consequence of the expansion of the agricultural area and not timber exports or the demands of the iron industry. The share of arable land was already very high and increased further during our period of investigation. Its expansion was encouraged by the implementation of an early enclosure reform (*enskifte*) in the first decades of the nineteenth century. Furthermore, the proportion of the land owned by the nobility was among the highest in Sweden.¹⁵ Previous research has shown that the forests of Scania were already severely depleted by the beginning of the eighteenth century.¹⁶ Although there were local differences, in general the exploitation of forests exceeded their regrowth. Previous research has argued that protectionist policies made matters worse, and an export ban on firewood introduced in 1658 arguably pushed woodland farmers into the alternative of potash-production and thus increased the exploitation of beech trees. Deforestation intensified in

¹² Some have argued that deforestation was part of a more general ecological crisis in Europe: see: T. Kjær-gaard, *The Danish revolution 1500–1800. An ecohistorical interpretation* (1994), others that the crisis was more of a local phenomenon: M. Bohman, 'Conditional crisis? Ecological challenges and conditions of growth during the agricultural revolution in southern Sweden, c.1700–1900', *EcHR* 70 (2016), pp. 171–86.

¹³ Eliasson and Hamilton, "Blifwer ondt", pp. 72–7.

¹⁴ E.g. L. Schön, *Sweden's road to modernity: an economic history* (2010).

¹⁵ See e.g. C.-J. Gadd, *Den agrara revolutionen*

1700–1870 (2000), p. 439. Manorial forestry was often highlighted as an exemplar for farmers to follow, but is mainly excluded from our investigations since it functioned under different conditions. Forests were reportedly part of 'the ideal picture of a manor's delights', and they were used perhaps as much for hunting and recreation as for strictly economic purposes: see M. Olsson, *Manorial economy and corvée labour in early modern Scania* (2002), p. 15.

¹⁶ G. Nordholm, 'Några drag ur den sydsånska bok-skogens historia', *Svensk Geografisk Årsbok* 18 (1942), pp. 542–60.

the early nineteenth century, and the total area of wooded land in Scania reached its lowest point around 1860. As elsewhere in Europe, previous research on this region has described deforestation in the early nineteenth century as an impending crisis.¹⁷ A variety of measures were undertaken to counteract the increasing shortage of wood in Scania including the planting of trees alongside roads.¹⁸ The 'Scanian Planting Office' (*Det Skånska Planteringsverket*), established in 1756, encouraged farmers to plant trees by providing them with saplings and seeds.¹⁹ Some farms had established so-called *plantehagar* – plantations of beech and oak trees – whose creation had been a condition for allowing the felling of beech and oak trees in the outfields.²⁰

Finally, we turn our focus to the emergence of the new agricultural organizations, the *Hushållningssällskapen*. They have been the subject of previous research, but we still know little about their impact on agricultural development. The first agricultural society for a Swedish county emerged in the late eighteenth century, but most of them were established following the publication of a common plan for the societies in 1813. The society in Malmöhus county was founded the following year. Each society was led by an executive committee (*förvaltningsutskott*, hereafter EC), which was chaired by the county governor and consisted of a secretary, a treasurer and six commissioners. Two commissioners were appointed annually, one by the county governor and the other elected by the members of the society. The society needed local contacts in order to achieve its purpose. Local commissions (*beredningsgrupper*, hereafter LCs), led by the clergy and consisting mainly of farmers, were established. There was two-way communication between the EC and the LCs, since the latter monitored local conditions and reported on them to the EC, which in turn sent advice and instructions. Previous research has described the founding of HHS as an emergence of a 'third sector', since it created a link between the State ('first sector') and the farmers of the 'second' sector.²¹

To summarize: the period up until the 1860s was characterized by continuous deforestation in our area of investigation. The increased pressure on forest resources during the eighteenth century took place in the context of traditional multipurpose use of wooded land, increasingly strict regulations and the property structure of the open field system. Demand intensified in the early nineteenth century, but it happened in a context of diminished restrictions, strengthened private property rights, and a shift of policy from limiting felling to promoting replanting. The regional agricultural societies emerged during this transformative period. During the second

¹⁷ M. Bohman, 'Deal with it! The emergence and reversal of an agro-ecological crisis: Southern Sweden in the eighteenth and nineteenth centuries', *Scandinavian Economic Hist. Rev.* 65 (2017), pp. 206–20; F. af Petersens, *Skogshushållning* (1933).

¹⁸ The establishment of tree-lined roads (in Swedish *alléer*), in the province of Scania is thoroughly analyzed by P. Olsson, *Both sides of the Road: Avenues and the landscape in Scania, 1700–1900* (2012).

¹⁹ The Scanian Planting office was dissolved in 1784. It had probably generated poor returns during its time of operation: see L.-E. Holmberg, *Skogshistoria år från år 1777–2005* (2005).

²⁰ See Eliasson, *Forests*, p. 11. The renowned Swedish botanist Carl Linnaeus, also known after his ennoblement as Carl von Linné, noted and discussed *plantehagar* during his travels in Scania in 1749: see C. Linnaeus, *Carl Linnaeus skånska resa år 1749* (1977), p. 123; Bohman, 'Deal with it', p. 21.

²¹ There was a connection between HHS and the Royal Academy of Agriculture (*Kungl. Svenska Lantbruksakademien*), which was a semi-State authority founded in 1811: see U. Lange, *Experimentalfältet. The royal Swedish academy of agriculture's experimental station in Stockholm, 1816–1907* (2000).

half of the nineteenth century, a new order emerged, characterized by a more modern type of forestry, the State as an active owner of forests, and new market conditions. The total area of wooded land started to increase from the 1860s, due mainly to successful replanting in the areas where forestry had traditionally been an important source of income.

II

On its foundation in 1814, the regional agricultural society of Malmöhus county immediately engaged with the issue of forestry. Several documents reflect a perception of an increasing shortage of forest resources, exemplified, for instance, by notes on the widespread use of peat burning for heating houses.²² Opinions differed as to the causes of deforestation, but population growth, the expansion of arable land, and 'irresponsible exploitation' are repeatedly mentioned. An example of the latter was the claim that increased consumption of spirits had caused excessive consumption of firewood in distilling.²³ More fundamentally, differing opinions were expressed about regulation. In a protocol of 1833, the EC expressed its support for the prevailing firewood export ban, using the argument that 'the benefits of the individual landowner must bend to that of the general public at a time when the needs of the plains and towns of Scania are bigger than ever before'.²⁴ The EC acknowledged the need to transport firewood from other parts of the county, but concluded that steps must be undertaken both locally and nationally to increase the supply of fuel through improved forestry, replanting, the planting of willow²⁵ and the more sustainable use of peat bogs.²⁶ A more spectacular suggestion, which was never realized, was to construct a canal from the wooded areas around Lake Ringsjön to the coastal town of Malmö to convey wood to the bigger towns of the western coast. HHS continuously acknowledged the need for improved transportation, whether roads or railways, to enable the easier transportation of wood.²⁷ On several occasions the HHS praised the coalmine in Höganäs, since it offered an alternative source of fuel for domestic heating.²⁸

The archive reveals that the causes of and solutions to wood shortage were vigorously debated without any consensus being achieved, despite the EC's official statements. One example is a petition written by a member of the EC in 1835, which criticized the mandatory planting obligation. The petitioner presented a detailed calculation and argued that the losses

²² HHS, A1:1, 'Förvaltningsutskottets memorial 1818'.

²³ HHS, A1:3, 'Hörby och Lyby pastorats hushållsberedningsberättelse för år 1837'.

²⁴ HHS, A1:3, 'Protokoll, 1 Nov. 1833'.

²⁵ The paper applies the general term 'willow' to denote different species of the genus *Salix*.

²⁶ Previous research has shown that there was a nature-based specialization in the province of Scania between three main types of agricultural regions: the plains, the woodland regions and the brushwood region. See A. Campbell, *Skånska bygder under förra hälften av 1700-talet. Etnografisk studie över den skånska allmogens äldre odlingar, hägnader och byggnader* (1928); Bohman, 'Conditional crisis'. Campbell's ethnographic

division (see Figure 1) concerns the earlier half of the eighteenth century.

²⁷ For instance HHS A1:5, 'Inkommande brev till förvaltningsutskottet, avsändare Carl G. Breyer, Malmö den 19 februari 1846'.

²⁸ Coal deposits are scarce in Sweden, and one of few is at Höganäs in north-western Scania. The EC reported that 38,376 barrels of coal were sold within Scania and 37,160 barrels were sold to the rest of Sweden and abroad in the year 1817. The coal mining company received 6 riksdaler banco for each sold barrel, which was financed by a toll on imported English coal. HHS, A1:1, 'Förvaltningsutskottets memorial 1818'.

from using fertile arable land to produce firewood far exceeded the costs of importing firewood from the nearby forest-rich county of Kronoberg.²⁹ There are other examples of arguments being made against both the export ban and forced planting of trees. Another petitioner – Sergeant Sandberg of Lyngby parish – argued that a major problem was the town-dwellers' unwillingness to pay a realistic price for firewood. To prove his point that there was no acute shortage, Sandberg offered to donate trees from his land to any resident of Malmö or Lund who was willing to collect them, 'from root to top', and leave the land 'free and clean' so more lucrative forms of production could take place.³⁰ The documents also contain claims that manors were unwilling to sell peat and firewood due to low prices and the high cost of transportation, and that consequently they produced mainly for local use.³¹ A later EC report from 1843 concluded that the supply of wood products, including firewood, was abundant due to the inflow from other parts of the country, which had caused prices to fall and had halted the felling of local forests.³²

Reports from the local committees (LCs) survive in greater numbers from the 1830s, and they provide insights into how perceptions of deforestation had changed since the earliest years of HHS. We can draw on about 50 reports that tend to be less pessimistic about wood shortage, although with some important differences. Some, particularly from plain land areas, praised farmers who had turned previously wooded land into arable or expressed regret that they had not yet done so.³³ The LC of Rönneberga hundred (*härad*) reported that its complete lack of forest was not a problem, since nearby areas provided an ample supply of firewood at a good price.³⁴ The LC of Asmundtorp and Tofta parishes reported in neutral terms about their lack of woodland but reported that well-kept plantations of willow provided firewood and an income from its sale.³⁵ The LC of Bara complained about the wood shortage and generally poor forestry, and expressed a need for solutions such as planting willow hedges. The most negative reports usually came from areas of the county where forestry had traditionally been an important source of income, particularly the areas specified as 'woodlands' in Figure 1. A report from Onsjö hundred described the local disinterest in woodland. It called for improved forestry and the conversion of land that was useless for grazing and crop production into woodland.³⁶

The documents also reveal contemporary opinions about the effects of the enclosure reforms. HHS generally supported and encouraged enclosure, and argued in favour of the beneficial effects of strengthened private property rights on land management, including forestry. However, some LC reports were negative, and claimed that enclosure threatened the few remaining forests.³⁷ Enclosure promoted the expansion of arable land at the expense of forests,

²⁹ HHS, A1:3, 'Inlaga 29/4 1835'.

³⁰ HHS, A1:3, 'Lyngby pastorats hushållningsberednings berättelse till Bara kontrakts hushållscommitté för år 1837'. Sandberg was a *fanjunkare*, a form of non-commissioned officer.

³¹ HHS, A1:3, 'Lyngby pastorats hushållsberedningsberättelse för år 1837'.

³² HHS, A1:4, 'Förvaltningsutskottets protokoll, 28 February 1843'.

³³ HHS, A1:3, 'Lyngby pastorats hushållsberedningsberättelse för år 1837', and 'Sammandrag av

pastoratsberedningarnas berättelser av Vemmenhög kontrakt i maj år 1837'.

³⁴ HHS, A1:4, 'Kjells Nöbbeöfs pastorats hushållningsberednings berättelse till Rönnebergs härads hushållscommitté, 6 February 1844'.

³⁵ HHS, A1:3, 'Asmundtorp och Tofta pastorats hushållsberedningsberättelse för år 1837'.

³⁶ HHS, A1:3, 'Sammanställning av Onsjö kontrakts hushållningsberedningsberättelser för år 1837'.

³⁷ HHS, A1:3, 'Vanstad och Tolånga pastorats hushållsberedningsberättelse för år 1837'.

at least initially, but opinions varied between whether it was for the better or the worse. From Brundby parish it was reported that the forests 'had suffered' and that remaining woodlands were 'threatened by accelerating devastation'.³⁸ A report from Frosta hundred complained that the forests had, since the implementation of the reform, been felled with 'an incredible speed' and that the farmers 'were too much in need of income today in order to invest work and costs in forestry, which only generated profit for future generations'.³⁹ On the other hand, a report from Lyngby parish reported that the reform had resulted in the complete clearance of 'useless brushwood' from what had previously been outlands.⁴⁰

Apart from just discussing the issues, the documents also reveal that the HHS actively undertook measures to counteract deforestation and improve forestry. A royal ordinance from 1813 concerning mandatory planting ordered each HHS to establish local planting committees (PCs), in order to ensure that farmers complied with the obligations placed on them. The PCs were to be elected but should contain at least one person of rank. Their task was to choose suitable places for plantations and then report to the EC how far the planting obligation had been fulfilled. The PCs would also provide trees and seeds. Substituting the planting of trees for willow hedges on boundary banks (*pilevallar*) was optional – the ordinance considered 300 fathoms (534 meters) of bank planted with three rows of willow to equal a tree plantation of one sixth of an acre.⁴¹ If a farmer did not fulfil the obligation placed on him, and if legitimate reasons for his failure were not reported to the county governor within fourteen days of a report being made, a fine of between 1 *riksdaler* 32 *skillingar banco* and 6 *riksdaler* 32 *skillingar banco* would be imposed.

How well did the HHS fulfil its duty to enforce the planting obligation? The archives include descriptions of many completed planting projects (see Figure 1 and Appendix), although probably not all of them, due to gaps in the records. The documents reveal that many parishes established PCs, but that their level of activity varied and was most generally intense during the first two decades after the planting ordinance was issued. The EC produced a summary in 1818, based on all the reports it had received from the local PCs. It knew of 52.5 acres (106 *tunnland* and 12 *kappland*) of 'completed enclosures for tree seeds': about 31 km of willows planted on earth walls; 45,512 saplings had been planted and 4,252,714 trees of various types.⁴² Are these figures reasonable? Subsequently we will present examples drawn from the reports of the local PCs that show extensive planting projects.

The records show examples of farmers who joined forces to comply with the planting obligation. In 1813–14, the towns of Landskrona and Helsingborg and the villages of Raus and Pahlstorp employed 'gardeners' to establish and care for their plantations. This shows how the

³⁸ HHS, A1:3, 'Brundby pastorats hushållsberedningsberättelse för år 1837'.

³⁹ HHS, A1:3, 'Sammanställning av Frosta contracts hushållsberedningsberättelser för år 1837'.

⁴⁰ HHS, A1:3, 'Lyngby pastorats hushållsberedningsberättelse för år 1837'.

⁴¹ HHS, A1:1, 'Instruktion för Malmöhus läns hushållsberedningar, § 6'. There is a possible connection between the formation of PCs and the contemporary implementation of the early radical enclosure reform

(*enskifte*), since redistribution of land required plantation of willow hedges on earthworks as means to mark out new boundaries.

⁴² HHS, A1:1, 'Förvaltningsutskottets memorial 1819'. The EC praised the increased planting of willow in the surrounding areas to the town of Malmö, and wrote that it should serve as an example. It had generated firewood but also a new export commodity, which according to the custom office's notes amounted to 17000 willow barrel hoops.

plantations were a long-term commitment that justified the employment of men to maintain fences and protect the wood against animals and intruders. The merchant Lorentz Kockum from the town of Malmö included the planting obligation of a neighbour within a plantation of 164 acres on his own land. The neighbour was to pay 30 *kappor* (about 138 litres) of barley annually for 25 years, after which Kockum's plantation was expected to generate a profit. The EC approved of the agreement, both for its economies of scale and because Kockum's land was less well suited for grain production.

Some planting projects struggled. For instance, shifting sand devastated a plantation of 114 acres established by the town of Ystad on its outfields. The EC wrote a report on the issue, and hoped that fences and grass mounds would solve the problem. Shifting sand also caused problems for tree plantations at the village of Hemmestorp and the town of Skanör, and it appears repeatedly as a problem in the documents. Attempts to stop the sand drift in Hemmestorp failed, but a mandatory obligation to contribute to fences and support from HHS in the form of seeds and saplings had reportedly produced enduring results.⁴³

Enforcing the planting obligation necessitated monitoring and follow-up inspections, of which the archive contains several examples (see Appendix, pp. 213–14). Our research reveals once more that results varied between planting committees (PCs). An illustrative example is from Nosaby parish, where the farmers in 1816 had committed to planting 18 trees each, annually and over the course of four years.⁴⁴ The local PC conducted an inspection in 1819 and presented a detailed report with a table, which showed the actual number of planted trees, including the surplus or deficit over the expected number. In all, the 42 farms in Nosaby parish had committed to planting 3024 trees. The number planted was 3484, a surplus of 460 trees. There were however big differences between the farms: the biggest individual surplus and over the expected quota of 72 trees per farm amounted to 286 and the biggest deficit 55 trees. The PC stressed individual responsibility, despite the total surplus for the parish as a whole, and ordered that farmers must achieve the expected individual quotas before the next inspection. However, the PC argued that there were valid reasons for the shortfall and concluded that no fine should be imposed. The reasons were a recent enclosure in the neighbouring village of Åraslöv, which had caused uncertainties about land ownership, difficulties in obtaining planting materials, and damage caused by hares. Another example is from Fränninge parish, where the PC reported on no fewer than 12 individual planting projects. The village had established a tree plantation on its western field, but some landowners had reportedly felled trees without permission. The PC came to an agreement with the village community that no further felling could occur without the village's consent, and that any violation would be punished by a fine of 10 *rikdsdaler banco*.⁴⁵ However, it is noteworthy that neither here, nor anywhere else, do we find a single instance of a farmer being fined for not fulfilling his planting obligation.

The investigation reveals several examples of the supportive role of HHS. One is that the EC funded the printing and distribution of a dissertation on the topic of planting wild trees,

⁴³ For a more detailed account, see: Bohman, 'Deal with it'; id., *Peasants, production patterns and paths of development*, pp. 206–20.

⁴⁴ HHA, A1:1, 'Rapport från Nosaby sockens

planteringskommitté, 30/6 1819'.

⁴⁵ HHS, A1:1, 'Rapport från Fränninge socken planteringskommitté, 26/4 1819'.

written by a Professor Retzius in 1811, as an aid to the LCs and PCs. There are also examples of members who donated trees, one of them as many as 200,000 willow saplings. Another member provided funding of 50 *riksdaler banco* annually for three years for the employment of a planter (*planterare*) in Torna hundred.⁴⁶ The documents provide several examples of men being employed to tend the trees, an illustration of the emerging professionalization of forestry. In 1831 the HHS received two separate applications from former foresters (*jägmästare/skogsombudsmän*) in Älvsborg county, who offered their services in Malmöhus county. Another way in which the HHS promoted the professionalization of forestry was to pay for educational trips abroad, as in the example of 'Master' (*magister*) Hammar who in 1852 received a scholarship to travel to northern Germany with the aim of studying forestry in general and plantations on sand fields in particular.⁴⁷ The increased planting activities also provided new opportunities for income and specialization, exemplified by Mattias Nilsson in the village of Råby who established a tree nursery. The garden reportedly sold more than 6000 saplings during the period 1830–33.⁴⁸

From 1824 the HHS encouraged forestry by offering prizes to well-executed plantations. These originally took the form of six annual grants of 10 *riksdaler banco* each, and were made possible by a donation from the Royal Swedish Academy of Agriculture (*Kungliga lantbruksakademien*).⁴⁹ The number of applicants for the rewards increased from the 1830s, when knowledge of the competition spread due to advertisements placed in local papers. Some candidates simply nominated themselves, but it was more common that LCs nominated candidates to the EC. The rewards were made after discussion. Some members of HHS opposed rewarding tree plantations, and argued that farmers should use fertile land for crop production instead. Others called for prizes that were more utilitarian – such as breeding stock – rather than silver cups, which were liable to be stolen.⁵⁰ A later proposal made to the HHS suggested that it should transform the rewards into grants, for which the farmers could apply in preparation for planting projects. The petitioner suggested that the HHS should then provide planting materials and expertise, in return for the farmers committing to maintain the plantation under the supervision of the local PC.⁵¹

An example of a more indirect way in which the HHS addressed the issue of deforestation was by the promotion of alternative sources of fuel. On a number of occasions it referred approvingly to the coal mine at Höganäs. Peat could also be used for fuel. Initially the HHS had disapproved of the exploitation of peat bogs but it came to recommend peat for fuel provided the worked out bogs were either planted with trees or even turned into arable. Whether these suggestions were implemented is difficult to assess due to the lack of information, but it is certain that here the HHS saw its role as collecting and disseminating information about best practice.

⁴⁶ The county governor appointed a man named Mattias Girdström to the position. His instructions were to assist the farmers, 'with his own hands and through education', and to establish a nursery garden. HHS, A1:3, 'förvaltningsutskottets protokoll, 1/11 1833'.

⁴⁷ HHS, A1:6, 'Förslag till instruktion för resestipendiat, 16/11 1852'.

⁴⁸ HHS, A1:3, 'Brev till förvaltningsutskottet under-tecknat Mattias Nilsson i Stora Råby, 16/4 1835'.

⁴⁹ HHS, A1:2, 'Cirkulär, KSLA, 3/8 1827'.

⁵⁰ For instance, HHS, A1:3, 'Brev till förvaltningsutskottet undertecknat av J. Kjellman i Lilla Harrie juli 1835'.

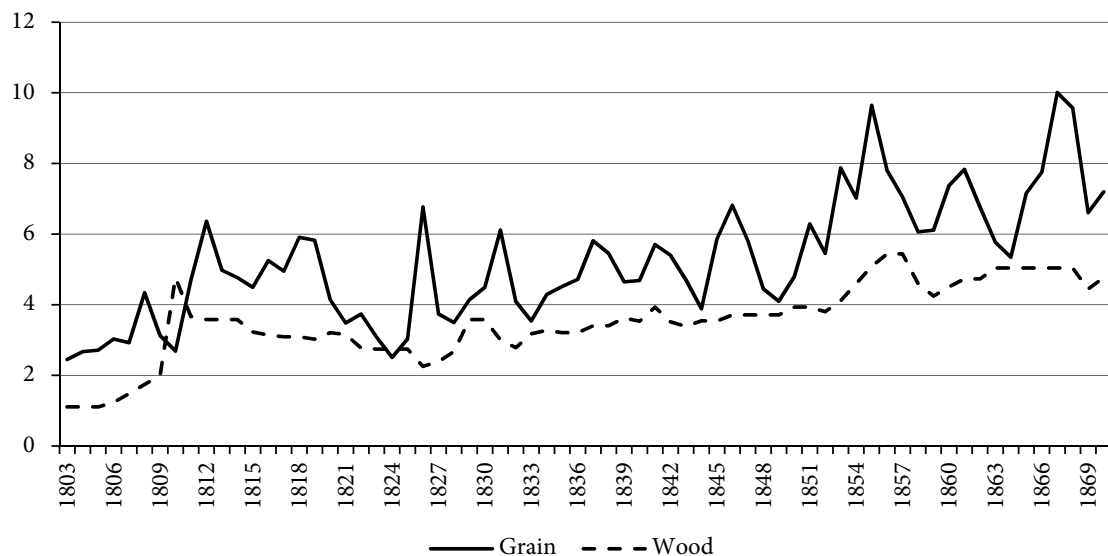


FIGURE 2: Nominal prices for wood and grain

Note: Calculations based on average prices. For grain: rye+barley+oats in *kronor*/hl. For wood: birch+pine+beech wood in *kronor*/m³.

Source: L. Jörberg, *A history of prices in Sweden, 1732–1914* (2 vols, 1972), I, pp. 141, 144, 157, 160, 173, 176, 494, 497, 505, 508, 514–15.

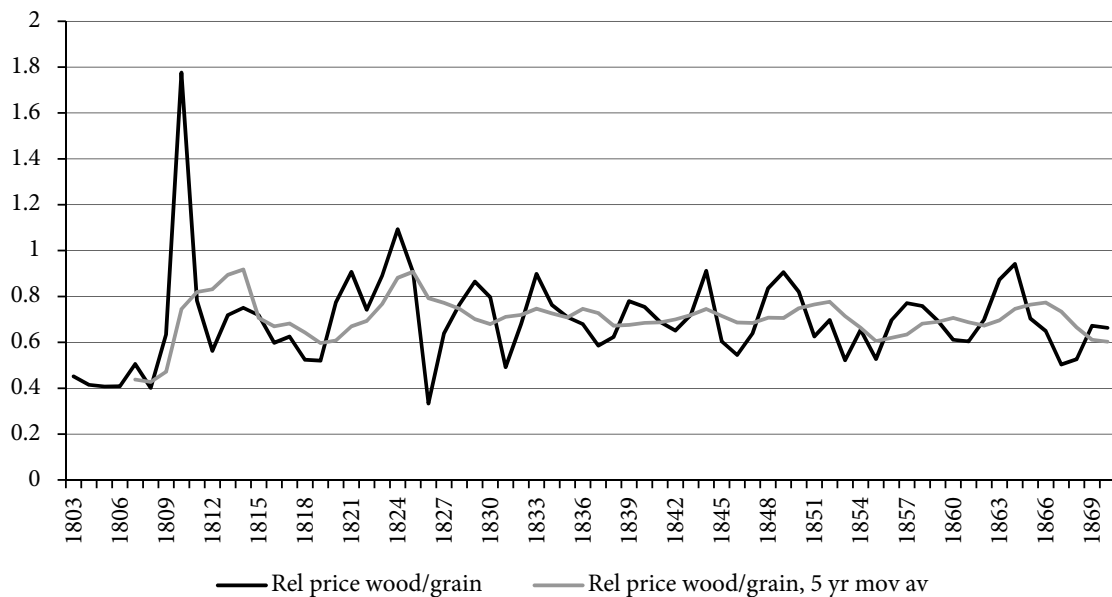


FIGURE 3: Relative price wood/grain

Note: calculations based on average prices. For grain: rye+barley+oats in *kronor*/hl. For wood: birch+pine+beech wood in *kronor*/m³.

Source: Jörberg, *History of Prices in Sweden*, I, pp. 141, 144, 157, 160, 173, 176, 494, 497, 505, 508, 514–15.

A different source that can be drawn on suggests that the Society's campaign to encourage tree planting for fuel was not without success. Figures 2 and 3 illustrate the long-term development of prices during the period 1803–70, the former nominal prices for grain and wood, and the latter the relative price between wood and grain. In a broad sense, we are able to identify two main periods. From around 1803 to the late 1820s, wood prices tended to increase faster than grain prices. From about 1830 to 1870, the prices of wood and grain increased at a similar rate. The development up until 1830 thus fits with the picture of accelerating deforestation and shortage of wood, whereas the development from the 1830s fits with the observation that at least some farmers no longer perceived wood growing as negatively as before.

III

A number of conclusions arise out of this research. First, we have found that from its foundation, the regional agricultural society (HHS) was actively engaged in questions of deforestation. It was aware of the tendency towards deforestation, but there was no consensus within the society about either its causes or a solution to the problem. Attitudes among the farmers may have changed around 1830. Farmers on the fertile plains became more accepting of deforestation, whereas others showed a greater willingness to see advantage in planting trees. Price data suggest that market development had mitigated local shortages of wood from the 1830s, but the HHS was still concerned to improve local supply in accordance by enforcing the planting obligation ordered by the State. The explanation for the changing attitudes is probably the strengthened rights of farmers to employ their land how they wanted – through the lifting of restrictions on land use and enclosures combined with new market opportunities – which enabled farmers on the fertile plains to use wooded land for what they believed was a better purpose, the specialized production of grain. This view fits with the thesis of a long-term tug of war between the State and farmers over the farmer's right to use the land how he wished, which shifted significantly in favour of the farmer during our period of investigation.⁵² Price trends and strengthened property rights also help explain why the total area of woodland for the province as a whole finally started to increase from the 1860s. In areas where forestry had traditionally been an important source of income – and where the land was less suited for grain production – farmers had started to see advantage in replanting. The emerging professionalization and separation of silviculture from other agricultural activities was thus a further development of the traditional patterns of specialization between the plains and the forested regions of Scania.⁵³

The second aim of this paper was to assess the effects of the measures undertaken by the HHS. Our results confirm that it not only discussed the issues of deforestation and poor forestry, but also had an impact on practice. We have shown how the HHS helped to enforce

⁵¹ HHS, A1:7, 'Brev till Malmöhus läns hushållningssällskap, Jöns Olsson, Nordanå, 3 December 1863'.

⁵² Compare with S. Granér, *Samhävd och rågång*; E. Ostrom, *Governing the commons – the evolution of institutions for collective action* (1990).

⁵³ Compare to Bohman, *Peasants, production*

patterns and paths of development; id., 'A matter of geography? Agricultural specialization in Southern Sweden (Scania), 1732–1864', in A. Antoine (ed.), *Agricultural specialization and rural patterns of development* (2016), pp. 99–118.

the planting obligation, and quantitative as well as qualitative evidence shows that the results were significant – although with varying success at the local level. The explanation for its relative success compared to previous attempts at agricultural education is probably its organizational character and structure, which was a novelty at the time.⁵⁴ Previous attempts had generally wielded the stick rather than the carrot. They failed because they tended to provoke those affected by the policy into disobedience, since there was no other way for them to affect or at least question the legitimacy of the policy.⁵⁵ HHS on the other hand provided a new forum for a dialogue between the State and farmers. Our results confirm a claim made in earlier research, that the State made each HHS its tool within its regional agricultural administration.⁵⁶ Previous research considered the latter half of the nineteenth century, but our results show it happening much earlier. The HHS managed to balance its dual role, since it supported the interests of farmers even while enforcing State policy.⁵⁷

However, the direct impact of the mandatory planting obligation is questionable. Planting trees on fertile arable land was counterproductive and worked against the economic incentives at hand, as some members of HHS vividly argued. Furthermore, our result show that the activities of HHS connected to the planting obligation gradually subsided after an intense start. The indirect and long-term effects were however probably important, since from its very beginning the HHS engaged itself in local agricultural matters and developed its advisory and educational role. It mattered that such a supportive structure was already in place when a new type of specialized and professionalized forestry started to emerge during the latter half of the nineteenth century.

In summary, this paper has provided new empirical evidence for the active role and impact of agricultural organizations during a crucial period of agricultural transformation. The results show that the organizations provided a new institutional infrastructure more firmly anchored among the farmers, which proved more successful than previous attempts to implement State policies, but more importantly for the long-term improvement of forestry.

⁵⁴ The decision in 1813 to appoint local parish committees to supervise the implementation of the planting obligation was an innovation: see R. Nellbeck, *Några drag ur svensk skogsvårdshistoria. En historisk exposé med särskild hänsyn tagen till utvecklingen i sydligaste Sverige och Bergslagen under 1700-talet och tidigt 1800-tal* (1953).

⁵⁵ E. Reuterswärd, *Ett massmedium för folket. Studier*

i de allmänna kungörelsernas funktion i 1700-talets samhälle (2001), pp. 279–85.

⁵⁶ R. Pettersson, 'Forskning om hushållningssällskapens historia', in Kåhrström (ed.), *Regionala främjare*; Gadd, *Den agrara revolutionen*; Kempe, *Studier angående de svenska hushållningssällskapen*.

⁵⁷ Compare to Stattin, *Hushållningssällskapen*.

Appendix.

List of tree plantations established, c.1814–60, and their inspections,
sorted chronologically according to year of establishment

<i>Location</i>	<i>Year of establishment</i>	<i>Inspections</i>	<i>Comments</i>
1. Brösarp v*	c.1774	1819	Shifting sand
2. V Karaby and Saxtorp p	c.1811	1818, 1831, 1834, 1837, 1845	Pine trees, shifting sand
3. Östra Grevie p	c.1811	1819	
4. Åkarp v (Reslöv p)	c.1811	1821	
5. Raus p	1813	1816, 1818, 1831, 1840, 1841, 1842, 1844, 1845, 1847, 1848	Shifting sand
6. Landskrona t	1814	1816	
7. N Nöbbelöv p	c.1814	1832	
8. Vallkärra p	c.1814	1832	
9. Lackalänga p	c.1814	1832, 1837	
10. Lund t	c.1814	1832	
11. S Sandby p	c.1814	1832, 1837	
12. Hardeberga p	1815	1818, 1832, 1837	
13. V Alstad v	1815	1820	
14. Stora Råby and Bjällerup p	1815	1819, 1833, 1834, 1835, 1837, 1845	
15. Nosaby p*	1816–18	1818	
16. Fränninge p	1817–18	1818, 1819, 1850	
17. Everlöv p	1818	1835, 1849	Shifting sand
18. Hemmestorp v	1818	1847, 1848	Shifting sand
19. Ystad t	1818		Shifting sand
20. Skanör p	1818	1837, 1838, 1847, 1848, 1849	Shifting sand
21. Fjellie and Flädie p	1819	1832, 1837	
22. Eljaröd p*	1819		
23. Vanstad p	1819	1819	
24. Bosarp v	1819		
25. Mellby p*	1819		Pine trees, shifting sand
26. Stora Hammar and Räng p	1819		
27. Uppåkra p	1830	1832, 1835	
28. Källs-Nöbbelöv p	1830	1835, 1845	
29. V Ingelstad p	1830	1835	
30. Skivarp p	1830	1835	
31. Fårabeck v (S. Sallerup/Svedala p)	1830	1835	
32. V Värlinge v (Bodarp p)	1832	1835	

<i>Location</i>	<i>Year of establishment</i>	<i>Inspections</i>	<i>Comments</i>
33. Stehag p (Rönneholm castle)	1848		Manorial land
34. Stävie p	?	1844	
35. Skabersjö p	?	1837, 1843	Manorial land
36. Barsebäck p	?		Pine trees, shifting sand
37. Ö Ingelstad p*	?	1835	
38. Asmundtorp p	?	1825, 1826, 1836, 1837	
39. St Harrie and Virke p	?	1837	
40. Sövdeborg and Öved p	?	1837	Annual sowing of pine seeds on manorial land
41. Dalköpinge p	?	1837	General planting of fruit trees and <i>salix</i>
42. Kågeröd p	?	1837	30,000 larch trees imported from England
43. Bårslöv p	?	1837	
44. Halmstad p	?	1837	
45. Borlunda p	?	1837	General planting of <i>salix</i> .
46. Holmby p	?	1837	Pine trees
47. Torna h	?	1818	General planting of <i>salix</i>
48. Malmö t	?	1818	General planting of <i>salix</i>
49. Sireköpinge p	?	1835	

Notes: h=hundred, p=parish, t=town, v=village/hamlet. Names of hamlets are specified as far as possible, but in some cases several unspecified plantations have been grouped within the same parish or hundred.

*=located in the neighboring Kristianstad county.

Source: Regional Archives Lund (LLA), Hushållningssällskapet i Malmöhus län, huvudarkivet, volym A1.