MTT REPORT 70

Evaluation of the impacts of national aids in southern Finland

Application and impacts of measures under Commission Decision C(2008)696 in Finland

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Contents

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Summary and conclusions

1. Background for the evaluation and support scheme

The purpose of this evaluation is to examine the implementation and effectiveness of the aid under the scheme approved in 2007 on the grounds of Article 141 of the Accession Treaty of Finland (Commission Decision C(2008)696) as regards the integration of agriculture in southern Finland to the common agricultural policy. In this evaluation the full integration of farmers in southern Finland to the common agricultural policy means that the economic conditions for operation and possibilities for structural development and, through this, higher productivity in support area AB in southern Finland are preserved on the common EU market. This has been evaluated by examining the role of payments under Commission Decision C(2008)696 in the formation of the economic result of agriculture on farms in support area AB and by analysing the structural development of agriculture in the area and comparing this with the other EU countries. Productivity development of agriculture, higher production efficiency and changes in the production practices of agriculture have also been taken into account. The socioeconomic significance of agriculture in southern Finland has been described, for example, by looking at the share of the agriculture and food sector in the economy of area AB and the impact of possible reductions in agriculture on the total revenue and employment of the area.

The main focus in the evaluation is on the income and profitability development created by means of the income and investment aids and changes in structural development and, through this, in the progress made in the adaptation to the common agricultural policy of the EU. In order to preserve the economic conditions for operation and possibilities for structural development and, through this, higher production efficiency in agriculture in area AB, the reduction or abolition of payments under Commission Decision C(2008)696 should not endanger the conditions for profitable production on the farms in the area. In addition, the investment utilisation rate of agriculture should stay high and profitability of the production must be ensured so that animal husbandry continues to be practised in the area. If these conditions are met, we can start to make conclusions about the full integration of farmers in southern Finland to the common agricultural policy and the possibilities to reduce or eventually abolish this national aid.

1.1. Agricultural support scheme applicable in area AB

The agricultural support schemes applied in support area AB in southern Finland are founded on payments under the common agricultural policy of the European Union (EU), which comprise the direct payments funded in full by the EU and the EU co-funded natural handicap payments (LFA) and agri-environmental support. Finland has aimed to take full advantage of the types of aid under the common agricultural policy in area AB. In 2011 the support under the common agricultural policy paid in area AB totalled 625 million euros. This was comprised of the so-called CAP income support (274.3 million euros), natural handicap payments to less-favoured areas (189.6 million euros) and agri-environmental support (161.1 million euros). In addition, a national top-up to the natural handicap payment has been paid in area AB as from 2005. In 2011 this totalled 43.5 million euros.

As part of the direcst payments scheme of the EU, certain coupled payments were also applied in area AB under Article 68. Dairy cow premium, which is payable only in area AB, can be paid up to 9.5 million euros a year and the bovine premiums, which is applicable in the whole country (for bulls, steers, suckler cows and suckler cow heifers), totalled about 11.7 million euros in area AB.

Of the national aids payable in area AB the most significant one is the aid under Article 141 of the Accession Treaty of Finland, which has supplemented the various forms of EU support. Finland has applied the opportunity set out in Article 141 as the basis for national aids in southern Finland since 1997. The European Commission has, however, defined quite strict conditions for the application of national aids: in order to take full advantage of the forms of support under the common agricultural policy Finland has been obligated to also take full advantage of the opportunities offered through structural support in area AB.

2. Agricultural production and structural development in area AB

2.1. Structural change in agriculture in support area AB

In 2011 there were 26 562 farms in area AB, which is 43 per cent of all Finnish farms. The number of farms has fallen by 11 per cent since 2006 and by almost 22 per cent since 2000. However, there has been no significant reduction in the utilised agricultural area, but the average arable land area of farms has been growing. In 2011 the average agricultural area of farms in area AB was 40.4 hectares, while in the whole country this was 37.4 hectares. About 47 per cent of the total agricultural area in Finland is in support area AB.

Area AB is the main production area in Finland for the plant production sector, accounting for 85 per cent of wheat production and 55 per cent of feed grain production in Finland. The area has a major role in Finnish horticulture as well, with 75 per cent of the whole outdoor vegetable area, 40 per cent of the fruit, berry and nursery production area and 44 per cent of the greenhouse production area located there. The share of the area AB in pig and poultry production in Finland is about 55 per cent, while a little over 20 per cent of the milk and beef produced in Finland comes from this area. A significant share of the Finnish food industry and the largest population centres are in area AB.

As regards the types of production in area AB, the number of livestock farms, especially that of pig, milk and poultry farms, has decreased the most (by -39 per cent, -37 per cent and -21 per cent, respectively). As the number of farms has been falling, the economic size of the remaining farms has continued to grow because of the structural change.

In the quota period 2011/2012 there were a total of 2 200 dairy farms in area AB, which is 21.2 per cent of all Finnish dairy farms. From the quota period 2007/2008 the number of dairy farms in area AB has fallen by about 774 (26 per cent), which is slightly more than in the whole country on average. The average size of dairy farms grew steadily in 2006–2011. In 2006 average number of dairy cows per farm was 21, while by 2011 this had risen to almost 27 cows.

In 2011 a total of 1 015 farms in area AB engaged in other types of cattle husbandry. This is 27 per cent of all such farms in Finland. In area AB the number of farms practising other types of cattle husbandry has fallen by 180 farms, 15 per cent, since 2006.

In 2011 there were 969 pig farms in area AB Finland, which is about half of all Finnish pig farms. The number of pig farms in area AB the number of pig farms fell by more than 560 farms from 2006 to 2011, i.e. by almost 37 per cent.

The number of poultry farms in area AB fell from 2006 to 2011 by a total of 132 farms, i.e. by about a fifth. In 20011 there were 436 poultry farms in support area AB, which is 62.8 per cent of all Finnish poultry farms.

2.2. Structural development of agriculture in area AB compared to other EU countries

In 1995–2007 more than a third of the farms in area AB quit production. This trend has been much quicker than in the EU-15, where the average of 23 per cent of farms quit production during the same period.

The decrease in the number of farms in Finland in 1995–2007 does not differ very much from the trends in Denmark and Germany, where the rate of quitting agricultural production has been slightly quicker than in area AB in Finland. In Sweden, which joined the EU at the same time as Finland, only about 18 per cent of the farms quit production in 1995–2007. In Austria the number of farms has decreased by a little under a fifth since the accession to the EU in 1995, at the same time as Finland and Sweden.

About 62 per cent of dairy farms in area AB quit production in 1995–2007. The trend has been similar in the other countries: in Denmark about two-thirds and in Sweden about 60 per cent of dairy farms quit production during the same period. In Austria about 45 per cent of the dairy farms quit production in 1995–2007, while the EU average was 39 per cent.

Since 1995 the number of other cattle farms has fallen more rapidly in area AB in Finland than in Denmark and Sweden. In area AB about half of the farms gave up production in 1995–2007, while only about 28 per cent of the other cattle farms in Denmark and 30 per cent in Sweden quit production during the same period.

The number of pig farms fell to a half in area AB in 1995–2007. The 50.6 per cent decrease in the number of pig farms was, however, slightly smaller than what took place in Sweden, Denmark and Austria, but it was close to the average decrease in the EU-15, which was 47.5 per cent in 1995–2007.

The decrease in the number of greenhouse vegetable farms was about the same in Finland and Sweden, about 40 per cent. In the Netherlands the fall has been more rapid than in Finland. The number of farms producing vegetables in the open has decreased a little less than in the Netherlands but more than in Sweden. The number of outdoor vegetable farms fell by 62 per cent in Finland, more than 70 per cent in the Netherlands and a little under 37 per cent in Sweden.

Despite the quite rapid structural development of agriculture in support area AB, the average farm size in the area is still small compared to many other EU countries. For example, the average dairy herd size is much smaller in area AB in Finland than in Denmark, Sweden and Germany: in 2007 the average number of dairy cows in area AB was 23, while in Denmark the average dairy herd size was already more than 100 cows. In Sweden, too, the average herd size of dairy farms exceeded 50 cows in 2007.

2.3. Future prospects of structural development in area AB

Measured by the number of farms, the structural development which has taken place so far in area AB has been rapid, but quite steady. The number of livestock farms has fallen at a rate of about 7 per cent a year, which means that their number would be halved in a decade. At times the number of farms has fallen more rapidly; for example, in 2008 the number of pig farms fell by as much as 15 per cent due to the difficult market situation and changes in the national aids, where the national aids for pig and poultry husbandry were decoupled from production as from the beginning of 2009. The number of plant production farms has stayed about the same. While a certain number of plant farms has quit production during this period, part of the farms that have ceased livestock production have taken up plant production.

The strong concentration of the agriculture sector continues, driven by the trends on the markets and aim for economies of scale. The number of farms continues to fall and a growing share of the production takes place on fewer and larger farms, which calls for an increase in the economic size of the production units on farms that continue in production. Structural development may continue in area AB at quite a steady and controlled pace if income and investment aid continues to be granted in about the same way as before. The need for structural development would seem to be the greatest in dairy husbandry, where the production is close to the domestic consumption and it has now been observed, as something new, that some farms with over 30 dairy cows also give up production. In dairy and cattle husbandry the production fell considerably in area AB also in 2008–2011 in spite of the coupled income payments and investment aids. In the future most of the investments will be made on farms which aim to increase their herd size to

over 50 cows. Investment aids are highly significant as regards the profitability of investments, not only in dairy and cattle husbandry but also pig and poultry husbandry, where most of the support payments have been decoupled from the production. In the future the market prices will determine, more than before, whether the contribution margin in pig and poultry husbandry is sufficient relative to the investment expenditure of the producer, which can be reduced by means of investment aid.

In the years to come the rapid structural development of agriculture continues in both area AB and the whole of Finland as the unit size grows and the number of farms decreases. Besides the economies of scale, this is driven by policy decisions. The European Commission has set as a condition for the national aid for livestock production in southern Finland that the investment aid must be utilised in full. Developing the competitiveness of agriculture and the whole food sector and higher productivity requires the kind of quite rapid structural development and growth in the farm size that has been taking place in recent years. The development of new technologies alone means that the farm size will be growing. This should lead to a growth in the total productivity in order for the unit costs to fall and achieve better competitiveness, or at least stay the same relative to our closest neighbours, where the farms are larger than in area AB. Positive productivity development is an important goal for an individual enterprise, as well as a condition for the survival and growth of the sector as a whole.

Research results indicate, however, that the benefits gained from structural development seem to remain smaller in the Finnish conditions than in more favourable production regions, because in Finland the capital and capacity utilisation rate is lower than elsewhere due to the short growing season and short peaks in farming and cultivation work. A significant share of the economies of scale are lost due to the costs arising from the fragmented structure of arable lands and short growing and pasture season, such as the higher use of labour per hectare. These costs are exceptionally high in Finland. The costs of manure spreading and arable farming get higher and more time is needed for the work as the distance from the main farm buildings to the arable parcels grows. Besides this, the short growing season and organisation of indoor feeding means higher costs and use of labour when increasing the herd size. This weakens the economies of scale in organising the work and use of machinery.

All this means that there are limits to improving productivity in the Finnish conditions and it may be difficult to reach the competitiveness objectives by higher cost-efficiency or more efficient use of capital. Substituting labour in agriculture by capital inputs may also increase the costs to the society. Costs may get higher if, for example, structural development is speeded up simply by building more new production capacity, while old production capacity cannot be removed quickly enough. Even more rapid structural development compared to the present, already quite good pace would be difficult to justify from the economic and especially the social perspectives.

3. Price, income and profitability development of agriculture

3.1. Development of producer and input prices

By looking at how the prices in the other EU Member States are reflected on the Finnish markets we can have some indications of how well the Finnish market has integrated to the internal market of the EU in the trade of agricultural products. Because of the small size Finland has in practice been forced to adapt to price changes on the EU markets, while the actions and production volumes of Finland have hardly any impact on the internal market of the EU. As a rule the development of the producer price index of agriculture in Finland has followed the trend in the other EU countries. The development of the price index of the production inputs in Finland does not differ much from the trend in the other EU countries.

However, there are certain special characteristics in the prices and their development in Finland. The market prices of, for example, pigmeat and milk vary less in Finland than in many other EU countries. There used to be oversupply in eggs in Finland, which is why their producer price was low compared to the other part of the EU. Instead, the price paid to the Finnish milk producers is slightly higher than elsewhere in the EU on average due to the higher degree of processing (value added) of dairy products, and the seasonal differentiation of the price of milk is also greater in Finland than in the other EU countries. In recent years the producer prices paid for meat in Finland have been close to the EU average.

Studies have shown that price changes observed on the European market are reflected on the Finnish meat market quite slowly, but the transmission of the prices on the pigmeat market can still be shown by statistical indicators. Instead, on the beef market even considerable changes in the prices on the Central European market are not transmitted to Finland to the extent that the changes could be verified by statistical methods.

The special characteristics of the Finnish agricultural product markets include high transportation costs due to the long distances and relatively small but concentrated markets because of the population figures. The numbers of dairy production and slaughtering plants has been reduced in Finland to improve the competitiveness of the Finnish food industry and concentrate the production. In the agricultural input industry, too, the concentration of the production plants and growing distances are causing additional costs.

3.2. Development of the economic results of agriculture and role of national aid

The profitability of agriculture and horticulture in support area AB fell in all main production sectors after Finland joined the EU in 1995. The entrepreneurial income decreased by 20 per cent and the profitability coefficient fell from 0.82 to 0.68. The profitability coefficient is calculated by dividing the entrepreneurial income by the sum of the wage and interest claim. The profitability coefficient 0.68 means that the entrepreneurial income covered 68 per cent of the costs of farmers' own labour and capital. After this, the decreasing trend in the result and profitability has continued in area AB. In 2010 the profitability coefficient in area AB was 0.47, which indicates that the farmers received 47 per cent of the hourly wages of agricultural workers as compensation for their own labour and 47 per cent of the interest of 6.3 per cent on own capital set as the target.

The rise in raw material prices which started in autumn 2007 also pushed upwards the producer prices of agriculture, especially those of cereals and milk. The economic recession in turn led to a fall in the producer prices in 2009. Combined with the rapid rise in the prices of energy, fertilisers and feedingstuffs the profitability of agriculture declined considerably already in 2008 and especially in 2009 despite the recovery of the producer prices and record yields of the decade. From the farmers' perspective the trend in the relationship between the producer and input prices has been unfavourable. The input prices have risen much more rapidly than producer prices, especially on livestock farms.

In this evaluation report the significance of aid under Article 141 for farms in area AB has been examined on the basis of the bookkeeping data of the Agrifood Research Finland MTT. In 2010 there were 405 bookkeeping farms in area AB on which the economic size based on the standard output exceeded the minimum limit for economic size used in the FADN. These results have been weighted by the types of production and economic size classes based on the standard output to obtain the average results which indicate the results of the 18 570 corresponding farms in the area. In order to have a clear picture of the role of aid under Article 14, the focus has been on the production sectors where the aid paid in southern Finland in under Article 141 has a significant role.

The study showed that during 2000–2010 the productivity of pig and milk farms in area AB increased at an average annual rate of 2.7 per cent and 4.5 per cent. This has been due to the strong structural development and efforts of farmers to compensate for the weakening relations between the output and input prices. According to the weighted results of the bookkeeping data, in the past decade the arable area of livestock farms has grown by 40 per cent and the number of livestock units by 75 per cent in area AB. When all economic size classes are taken into account, 45 per cent of livestock and horticulture farms in area AB quit production between 2000 and 2011.

Even this quite significant productivity and structural development has not been enough to keep the economic situation of farms at the earlier level. The entrepreneurial income of livestock and horticulture farms, i.e. the compensation left for own labour and capital, has not risen even in nominal terms. At the same time the amount of own capital tied to the business activities, often from outside the sector, has almost doubled during the 2000s, which means that the compensation for own capital investment has weakened. The debts of farms have tripled and the related interest expenses obviously push down the entrepreneurial income. The annual entrepreneur's profit, which takes account of all production costs, including the costs arising from farmers' own labour and capital, has stayed negative, about -40 000 euros per farm.

About 65–70 per cent of the entrepreneurial income is comprised of the national income aid under Article 141 and the closely related national top-up to the natural handicap payment. In 2010 the share of aid under Article 141 alone was 45 per cent of the entrepreneurial income, which means that almost half of the entrepreneurial income of farmers would be cut if the income aid under Article 141 were abolished. Any reductions in the aid would thus seriously weaken the results and profitability of farms in the area.

Of the individual production sectors, the gross return of dairy farms as well as their entrepreneurial income has risen over the years, thanks to the rapid structural development. Relative to the gross return, however, the entrepreneurial income has decreased. National income aid under Article 141 and the national top-up to the natural handicap payment has represented about 30 per cent of the entrepreneurial income and the share of aid under Article 141 alone has been about 20 per cent. When we also take account of the costs due to own labour and capital, the annual entrepreneur's profit has been negative during the whole period, about -35 000 euros. About 60 per cent of the dairy farms in area AB quit production during the 2000s, but structural development and growth in the farms size has not been sufficient to turn the profitability trend into a rise and the profitability coefficient has stayed at the level of about 0.5–0.6 all through the 2000s.

In the group of other cattle farms the gross return and entrepreneurial income have risen quite rapidly as a result of the rapid structural development. In 2008 and 2009 the entrepreneurial income was comprised solely of the income aid under Article 141 and national top-up to the natural handicap payment. During the whole period the share of aid under Article 141 alone has varied between 40 and 70 per cent. When we also take account of the costs of own capital and labour, the annual entrepreneurial profit has been negative, about -40 000 euro. The gross return has not been high enough to cover the production costs. In recent years the profitability coefficient has varied at around 0.3–0.4.

The gross return of pig farms has also grown as a result of the strong structural development. The share of income aid under Article 141 and national top-ups to the natural handicap payment fell from about 12 per cent in 2007 to about 9 per cent in 2011. The entrepreneurial income of pig farms has fallen during the whole period and it is forecast that in 2011 it may be as low as about 5 000 euros, which means that the entrepreneurial income would be comprised of the support payments only. When we also take account of the costs of own labour and capital, the entrepreneur's profit would fall to about -70 000 euros, which means that the losses created by the production activity would be considerable. Based on the forecast, in 2011 the profitability coefficient would be 0.6. In 2013 the decoupled payments to pig and poultry production as a whole decrease by about 37 per cent. This means that both the entrepreneurial income and the profitability coefficient indicating relative profitability will turn negative. In 2000–2011 67 per cent of the pig farms in area AB quit production.

On poultry farms the gross return has increased over the years. The results vary a great deal, partly because of the small number of enterprises. In 2008 the entrepreneurial income turned negative, while in 2010 it was as high as 40 000 euros. Even then, however, 87 per cent of the entrepreneurial income was comprised of the income aid under Article 141 and national top-up to the natural handicap payment. Income aid under Article 141 alone accounted for 75 per cent of the entrepreneurial income. When the costs of own labour and capital are also taken into account, in 2012 the entrepreneur's profit would be as low as -30 000 euros. The cuts in the decoupled payments for pig and poultry husbandry in 2013 will further reduce the average entrepreneurial income of farms by 30 per cent from the level in 2011–2012. The profitability coefficient would fall to 0.35 from the level of 0.5 forecast for the previous years.

In greenhouse enterprises the entrepreneurial income has been fully comprised of the income aid under Article 141. According to forecasts, in 2011 and 2012 there is no entrepreneurial income left, which means that the farmers receive no compensation for their own labour and capital. The interest cost and part of the depreciations will also not be covered. The entrepreneur's profit would fall to about -80 000 euros and the profitability coefficient would also be negative, -0.4.

Studies have shown that the investment aids have improved the solvency and liquidity of farms. Without investment aid the amount of debt in the production sectors concerned here would be about 10 per cent higher. The additional interest expenses due to the higher amount of debt would have reduced the financial result left for repaying the debt, which would have extended the repayment period by about five years from the present. This means that investment aids have been significant in maintaining the possibilities of farms in area AB to develop their structure and, through this, improve their profitability and productivity.

4. Significance of aid under Article 141 in agricultural production and regional economy of support area AB

4.1. Role of income aid under Article 141 in maintaining the agricultural production volumes

Based on model analyses made at the Agrifood Research Finland MTT, by 2020 milk production in area AB would fall to 220 million litres, which is less than half of the volume in 2010 (472 million litres) if no income aid under Article 141 had been paid in 2008–2011 and no payments were made in 2012–2020. This would also affect the milk production volume in the whole country because the fall in the production in area AB would not be compensated for by increasing the production in area C because of the restrictions for support payments in area C. Based on the results the abolition of aid under Article 141 would not completely stop suckler cow production in area AB, but by 2020 the number of suckler cows would fall by a quarter from 2007 level. As a consequence, milk production would decrease by about 45 per cent and beef production by 40 per cent by 2020. The results concerning the significance of income aid under Article 141 for the total production volumes of agriculture by production sectors are based on the regional sector model DREMFIA designed at the Agrifood Research Finland MTT.

The results highlight the significance of coupled aid for milk and beef production. On milk and other cattle farms the coupled payments and investment aids are mutually complementary and even dependent on each other due to the high variable costs. The results show that, for example, the abolition of coupled payments would lead to weaker contribution margins and profitability of investments. Even quite high investment aid will not maintain the production and develop the production structure and productivity if an animal place does not yield a sufficient margin to the capital invested. As an example, investments in large production units with more than 50 cows would decrease without the coupled aid for milk under Article 141, which would slow down structural development and reduce the production. Instead, in pig and poultry husbandry almost all national aids in both area AB and C have been decoupled from the production, even if the conditions for receiving the aid include that the farm must continue to engage in animal husbandry. The results show that in pig and poultry husbandry the abolition of the income aid under 141 would lead to a reduction in the production in area AB by more than 10 per cent.

The decrease in milk and beef production if income aid under 141 were abolished would also considerably reduce the demand for feed grains in 2008-2020. According to the model analyses, this would lead to a reduction of as much as 170–180 000 hectares in the cereal area and 50 000 hectares in the grass area in southern Finland. Most of this over 200 000 ha would be left fallow and appr. 100 000 ha of arable lands with the weakest productivity would be left uncultivated.

Income aid under Article 141 is highly significant for the production and entrepreneurial income in area AB. The decrease in the production if the income aid under Article 141 were abolished would cause the entrepreneurial income to fall in 2008–2020 by an even higher amount than what would have been paid as aid under Article 141. The results show that compared to the baseline the entrepreneurial income in area AB would fall by about 95 million euros on a permanent basis, i.e. by about 36 per cent.

4.2. Coupled vs. decoupled aid

As a result of the aid scheme agreed on in 2007 (Commission Decision C(2008)696) the structure of the income aid under Article 141 has changed in the pig and poultry sectors. In these sectors the income aid under Article 141 has since 2009 been paid as decoupled, farm-specific aid, as a rule based on the production volumes of 2007. Instead, the income aid for ruminants under Article 141 has continued to be paid as coupled aid during the whole period. The results of this study show the coupled payments are highly significant for the milk and beef production sectors. In spite of the aid payments the production volumes in these sectors have been decreasing, while in pig and poultry sectors there has at times been some increase in the production volumes.

Decoupling the aid reduces the incentive to produce and leaves the production volumes to be steered by the markets and strategic decisions by the parties to the market more than before. In theory decoupling the aid should lead to production volumes that are better in line with the demand on the competitive markets and more efficient utilisation of the production resources. Decoupling the aid from production gives the opportunity to cease production with lower relative profitability without losing the aid. This raises the domestic market prices, to the extent that this is possible on the common EU-wide market (where the prices do differ to some extent), and improves agricultural income, provided that the amount paid as decoupled aid does not fall. In theory, without production-related aid the use of inputs would also be more flexible and capable of responding better to the changes in the relative prices of products, which would improve the economic efficiency of the production. This means that if the price obtained on the market covers the variable costs of the production and a sufficient share of the fixed production costs, it is in the interest of farmers that the aid is decoupled from the production.

If, for example, the market situation of milk products and beef stays strong, i.e. the demand is strong relative to the supply, decoupling the national aid from production is less significant than if the market situation and producer prices were to weaken. In a weak market situation national aid that is coupled to the production has a great impact on the contribution margins per animal and profitability of investments and the production as a whole. According to an estimate made at the Agrifood Research Finland MTT, decoupling of the national aid from production would lead to a reduction in livestock production in southern Finland, with the greatest decrease in milk and beef production. Coupled national aid for cattle husbandry in southern Finland has significantly contributed to the profitability of investments in large livestock production units.

Payments based on the arable area, which are made almost completely independent of livestock production, do not offer an incentive to engage in livestock production, but they may even encourage farmers to give up animal husbandry if the profitability of livestock production weakens while the cereal prices are rising. Only the top-ups to the natural handicap payment (LFA and environmental support) are paid to livestock farms for keeping a sufficient number of livestock units (0.4 LU/ha), but even these cannot be paid to cover the animal places in expansion investments, which are highly important for the continuation and scale of the production. As regards their impact, income aid paid for the arable area, which influence the incomes of farmers in all production sectors, should not be considered similar to the coupled income aid paid to livestock farms, which influence the contribution margin of an individual animal place and the return on the investment in it. The results show that without the coupled aid for milk under Article 141 investments in large production units with over 50 cows would decrease, which would slow down the structural development and reduce the production.

In area AB the income aid per livestock unit paid for pigs and poultry were decoupled from the production in 2009. Combined with the weakening price relations between meat and cereals this has reduced pigmeat production, which thus far had been growing. From the record level in 2008 pigmeat production fell by 15 per cent until 2011. The trend is in line with the estimate made at the Agrifood Research Finland MTT in 2008, according to which the decoupling of the national aid together with the higher cereal prices would gradually lead to a reduction in the production by 20 percent, i.e. at most the production volumes would be such that they meet the domestic demand (Lehtonen & Niemi 2008). Based on the results of the present study, in recent years the economy of pig farms has weakened to the extent that Finland would become a net importer of pigmeat if the income aid under Article 141 were abolished. The production would fall to the level of 155 million kg, which would be 28 per cent less than in 2007 and 18 per cent lower than the domestic consumption in 2011. However, the trend in the production without the income aid under Article 141 also depends on the development of the markets. The result indicating a significant reduction in pigmeat production also in the basic scenario and in case the aid under Article 141 is abolished is partly based on the weakening price relation between meat and cereals, which would attract pig farms to shift to cereal production. Similarly, stronger pigmeat prices relative to the feed grain prices would reduce the significance of support payments.

Even if the national income aid under Article 141 for pig and poultry husbandry has decreased and most of this has been decoupled from the production, the aid is still important for the economy and investments of the farms, although less than before. In any case, it seems that in Finland there are no such cost advantages in pig husbandry that pigmeat production at a level that is higher than the consumption could continue for very long. This means that the production is going to fall independent of what is decided on the income aid under Article 141, and the fall in the production will become more rapid as the income aid under Article 141 is being reduced.

Because in pigmeat production the aid has been decoupled from the production, the trends in the market prices and investment aids have a greater role when investment decisions are made. Possible cuts in the investment aid would not immediately lead to a more rapid fall in pigmeat production than what is already taking place as a great deal of investment has been made in building more animal places and these will stay in production for quite some time. However, in the medium term, by the year 2020, maintaining the production volumes is conditional to the payment of investment aid as additional places will have to be built to substitute for the units that give up production.

The decoupling of the aid and, in part, high cereals prices have also affected the incentive to produce poultry meat. Based on the model simulations the profitability of the production weakens to the extent that the growth in poultry meat consumption may in the first place lead to growing imports instead of higher production volumes in Finland. Some decrease in the production may also take place if the price relationship between meat and feed stays weak. So far the producer prices of poultry meat in Finland have been quite high and stable compared to the other EU countries and the domestic production has kept up with the domestic demand very well. This is going to be more challenging in the future. As a whole the situation in the poultry sector is stronger than in pigmeat production because the growth in the domestic demand is expected to continue and meat is produced to meet the demand in relatively large units on less than 150 farms.

Etelä-Suomen kansallisen tuen vaikutusten arviointi
Komission päätöksen K(2008)696 mukaisten toimenpiteiden soveltaminen ja vaikutukset Suomessa

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Yhteenveto ja johtopäätökset

1. Arvioinnin lähtökohdat ja tukijärjestelmä

Arvioinnin tavoitteena oli selvittää Suomen liittymissopimuksen artiklan 141 pohjalta vuonna 2007 sovittuun tukijärjestelmään (Komission päätös K(2008)696) kuuluvien tukitoimenpiteiden toteuttamista ja vaikutuksia Etelä-Suomen maatalouden yhdentymiseen yhteiseen maatalouspolitiikkaan. Etelä-Suomen viljelijöiden täysimääräisellä yhdentymisellä yhteiseen maatalouspolitiikkaan tarkoitetaan tässä arvioinnissa sitä, että Etelä-Suomen AB-tukialueen maatalouden taloudelliset toimintaedellytykset ja mahdollisuudet rakenteen kehittämiseen ja sitä kautta tuottavuuden parantamiseen säilyvät EU:n yhteisillä markkinoilla. Tätä on arvioitu tarkastelemalla komission päätökseen K(2008)696 perustuvien tukien merkitystä AB-tukialueen tilojen maatalouden taloudellisten tulosten muodostumisessa sekä analysoimalla AB-tukialueen maatalouden rakennekehitystä ja vertaamalla sitä muihin EU-maihin. Maatalouden tuottavuuskehitykseen, tuotannon tehostumiseen ja maatalouden tuotantotapojen muutokseen on myös kiinnitetty huomiota. Etelä-Suomen maatalouden sosioekonomista merkitystä on kuvattu mm. tarkastelemalla maa- ja elintarviketalouden osuutta AB-alueen taloudesta sekä maataloustuotannon mahdollisesta supistumisesta seuraavia vaikutuksia alueen kokonaistuloihin ja työllisyyteen.

Pääpaino arvioinnissa on ollut tulo- ja investointitukien myötä aikaansaadun tulo- ja kannattavuuskehityksen sekä rakennekehityksen muutoksen tarkastelussa ja tätä kautta EU:n yhteiseen maatalouspolitiikkaan tapahtuvan sopeutumiskehityksen edistymisen tarkastelussa. Jotta AB-alueen maatalouden taloudelliset toimintaedellytykset ja mahdollisuudet rakenteen kehittämiseen ja sitä kautta tuottavuuden parantamiseen säilyvät EU:n yhteisillä markkinoilla, komission päätökseen K(2008)696 perustuvien tukien vähentäminen tai poistaminen ei saisi vaarantaa kannattavan tuotannon edellytyksiä alueen tiloilla. Lisäksi maataloudessa tehtyjen investointien käyttöasteen tulee säilyä korkeana ja kotieläintuotannon jatkumisen edellyttämä tuotannon kannattavuus alueella tulee olla turvattu. Näiden edellytysten toteuduttua voidaan tehdä päätelmiä Etelä-Suomen viljelijöiden täysimääräisestä yhdentymisestä yhteiseen maatalouspolitiikkaan ja mahdollisuuksista kansallisen tuen vähentämiselle tai poistamiselle.

1.1. AB-alueelle sovellettava maatalouden tukijärjestelmä

Etelä-Suomen AB-alueella maatalouden tukijärjestelmän perustan muodostavat Euroopan unionin (EU) yhteisen maatalouspolitiikan tukimuodot, joita ovat EU:n kokonaan rahoittamat suorat tuet sekä EU:n osarahoittamat luonnonhaittakorvaus ja maatalouden ympäristötuki. Suomi on pyrkinyt hyödyntämään EU:n yhteisen maatalouspolitiikan tukimuodot AB-alueella täysimääräisesti. Vuonna 2011 AB-alueen maataloudelle kohdistui yhteisen maatalouspolitiikan mukaista tukea yhteensä 625 milj. euroa. Tuki koostui ns. CAP-tulotuesta (274,3 milj. euroa), epäsuotuisten maatalousalueiden luonnonhaittakorvauksesta (189,6 milj. euroa) ja ympäristötuesta (161,1 milj. euroa). Lisäksi AB-tukialueella on maksettu luonnonhaittakorvauksen kansallista lisäosaa vuodesta 2005 alkaen. Vuonna 2011 sitä maksettiin AB-alueelle yhteensä 43,5milj. euroa.

Osana EU:n suorien tukien järjestelmää AB-tukialueella maksetaan artiklaan 68 perustuen myös tuotantosidonnaista tukea. Pelkästään AB-alueella käytössä olevaa lypsylehmäpalkkiota voidaan maksaa vuodessa enintään 9,5 miljoonaa euroa ja koko maassa maksettavaa nautapalkkiota (sonnista, härästä, emolehmästä ja emolehmähiehosta) maksetaan AB-alueelle noin 11,7 milj. euroa.

AB-tukialueella maksettavista kansallisista tukimuodoista tärkein on liittymissopimuksen 141 artiklan perusteella maksettava tuki, jolla on täydennetty EU:n yhteisiä tukimuotoja. Suomi on käyttänyt artiklassa 141 todettua mahdollisuutta vuodesta 1997 alkaen Etelä-Suomen kansallisen tuen perustana. EU:n komissio on kuitenkin asettanut tiukat ehdot kansallisen tuen ehdoksi: yhteisen maatalouspolitiikan tukimuotojen täysimääräisen hyödyntämisen lisäksi Suomi on ollut velvollinen hyödyntämään AB-alueella täysimääräisesti myös rakennetuen mahdollisuudet.

2. AB-tukialueen maataloustuotanto ja rakennekehitys

2.1. Maatalouden rakennemuutos AB-tukialueella

Vuonna 2011 AB-alueella oli 26 562 maatilaa eli noin 43 % kaikista Suomen maatiloista. Tilamäärä on vähentynyt noin 11 %:lla vuodesta 2006 ja lähes 22 %:lla vuodesta 2000. Käytössä olevan maatalousmaan määrä ei ole kuitenkaan merkittävästi vähentynyt vaan maatilojen keskimääräinen peltoala on jatkanut kasvua. Vuonna 2011 AB-alueen maatiloilla oli maatalousmaata viljelyksessä keskimäärin 40,4 hehtaaria, kun koko maassa vastaava luku oli 37,4 hehtaaria. AB-tukialueella on noin 47 % koko maan maatalousmaasta.

AB-alue on kasvituotannon osalta koko maan merkittävin tuotantoalue. Se vastaa 85 prosentista vehnän tuotannosta ja 55 prosentista rehuviljantuotannosta. Myös puutarhatuotannossa AB-alueen merkitys on suuri, sillä alueella sijaitsee koko maan avomaan vihannesalasta 75 %, hedelmä-, marja- ja taimitarhatuotannon alasta 40 % ja kasvihuonealasta 44 %. Sian- ja siipikarjanlihan tuotannosta alueen osuus on noin 55 % ja maidon ja naudanlihantuotannosta alueella on runsaat 20 %. AB-alueella on merkittävä osa maan elintarviketeollisuudesta ja maan suurimmat väestökeskukset.

Tuotantosuunnittain tarkasteltuna eniten on AB-tukialueella alentunut kotieläintilojen määrä, erityisesti sika-, maito- ja siipikarjatilojen määrät (alentumisprosentit -39, -37, -21). Tilamäärä on laskenut, mutta samalla jäljelle jääneiden taloudellinen tilakoko on noussut jatkuvan rakennekehityksen vuoksi.

Lypsykarjatiloja oli AB-alueella kiintiökaudella 2011/2012 yhteensä 2 200, joka on 21,2 % kaikista Suomen lypsykarjatiloista. Lypsykarjatilojen lukumäärä on vähentynyt AB-tukialueella kiintiövuodesta 2007/2008 noin 774 tilalla eli 26 %:lla, mikä on hieman nopeampi vähenemisvauhti kuin koko maassa keskimäärin. Lypsykarjatilojen keskimääräinen koko on kasvanut tasaisesti koko tarkastelujakson 2006–2011 ajan. Vuonna 2006 AB-alueen lypsykarjatiloilla oli keskimäärin noin 21 lypsylehmää, kun vuonna 2011 määrä oli jo lähes 27 lypsylehmää.

Muuta nautakarjataloutta harjoitti AB-alueella vuonna 2011 yhteensä 1 015 maatilaa, joka on 27 % koko maan muista nautakarjatiloista. Muuta nautakarjataloutta harjoittavien tilojen määrä on laskenut AB-alueella 180 tilalla eli 15 %:lla vuodesta 2006.

Vuonna 2011 AB-tukialueella oli 969 sikatilaa, joka on noin puolet kaikista Suomen sikatiloista. Sikatilojen määrä on vähentynyt vuodesta 2006 vuoteen 2011 AB-alueella yli 560 tilalla eli lähes 37 %:lla.

Siipikarjatilojen määrä on vähentynyt AB-alueella vuodesta 2006 vuoteen 2011 mennessä yhteensä 132 tilalla eli noin viidenneksellä. Siipikarjatiloja oli AB-tukialueella vuonna 2011 yhteensä 436 kappaletta. Tämä on 62,8 % kaikista Suomen siipikarjatiloista.

2.2. Maatalouden rakennekehitys AB-tukialueella verrattuna muihin EU-maihin

Vuosina 1995–2007 yli kolmannes kaikista AB-alueen maatiloista lopetti tuotannon. Kehitys on ollut selvästi nopeampaa kuin EU-15-alueella keskimäärin. EU-15-alueen maatiloista keskimäärin 23 % lopetti maataloustuotannon vuosien 1995–2007 aikana.

Tilamäärän väheneminen vuosien 1995–2007 aikana Suomen AB-tukialueella ei huomattavasti eroa kehityksestä Tanskassa ja Saksassa, joissa maatilojen lopettamisvauhti on ollut hieman AB-aluetta nopeam-

paa. Suomen kanssa samaan aikaan jäseneksi liittyneessä Ruotsissa sitä vastoin vain noin 18 % tiloista lopetti tuotannon vuosien 1995–2007 välillä. Myös Itävallassa tilamäärä on laskenut vajaalla viidenneksellä EU:hun liittymisen jälkeen.

Noin 62 % AB-alueen lypsykarjatiloista lopetti tuotannon vuosien 1995–2007 aikana. Kehitys on ollut vertailumaissa samansuuntaista. Tanskassa tiloista kaksi kolmasosaa, ja Ruotsissakin noin 60 % lopetti tuotannon vuosien 1995–2007 aikana. Itävallassa tuotannosta luopui samalla ajanjaksolla noin 45 % tiloista. EU-15 keskiarvo oli 39 %.

Muiden nautakarjatilojen lukumäärä on puolestaan laskenut Suomen AB-alueella vuodesta 1995 enemmän kuin Tanskassa ja Ruotsissa. Kun A- ja B-alueella noin puolet tiloista luopui tuotannosta vuosien 1995–2007 aikana, vastaavalla ajanjaksona Tanskassa noin 28 % ja Ruotsissa 30 % muista nautakarjatiloista lopetti tuotannon.

Sikatilojen määrä puolittui AB-alueella vuosien 1995–2007 aikana. AB-alueen sikatilojen vähentyminen (50,6 %) on kuitenkin ollut jonkin verran hitaampaa kuin vertailumaissa Ruotsissa, Tanskassa ja Itävallassa, mutta lähellä EU-15 tilamäärän pienenemisen keskiarvoa, joka on 47,5 % vuosina 1995–2007.

Kasvihuonevihannestilojen lukumäärä on vähentynyt Suomessa lähes yhtä paljon kuin Ruotsissa, eli noin 40 %. Hollannissa tilamäärä on tosin alentunut Suomea enemmän. Myös avomaan vihannestilojen lukumäärän aleneminen on ollut Suomessa Hollantia maltillisempaa, mutta Ruotsia nopeampaa. Suomessa avomaavihannestilojen lukumäärä on alentunut 62 %, Hollannissa yli 70 % ja Ruotsissa vajaat 37 %.

Vaikka AB-tukialueen maatalouden rakennekehitys on edennyt vauhdikkaasti, keskitilakoko on AB-alueella edelleen pieni verrattuna moneen muuhun EU-maahan. Esimerkiksi maitotilojen keskimääräinen eläinmäärä on Suomen AB-alueella Tanskaa, Ruotsia ja Saksaa huomattavasti pienempi. Vuonna 2007 lypsylehmiä oli A- ja B-alueen tiloilla keskimäärin 23 kappaletta. Samaan aikaan Tanskassa keskimääräinen karjakoko oli jo yli 100 lehmää tilaa kohden. Ruotsissakin maitotilojen keskikoko nousi yli 50 lypsylehmään vuonna 2007.

2.3. Rakennekehityksen tulevaisuuden näkymät AB-alueella

Toteutunut rakennekehitys maatilojen lukumäärällä mitattuna on ollut AB-alueella nopeaa, mutta samalla suhteellisen tasaista. Kotieläintilojen lukumäärä on vähentynyt vuosittain keskimäärin 7 %:n vuosivauhtia, mikä tarkoittaa niiden lukumäärän puolittumista vuosikymmenessä. Ajoittain tilojen lukumäärä on vähentynyt tätä nopeammin, esim. sikatilojen lukumäärä väheni 2008 peräti 15 % vuodessa vaikean markkinatilanteen ja kansallisten tukien muutosten takia. Sika- ja siipikarjatalouden kansalliset tuet irrotettiin tuotannosta vuoden 2009 alussa. Kasvitilojen lukumäärä on pysynyt varsin vakaana, koska samalla kun osa on lopettanut tuotannon, kotieläintuotannosta luopuneita tiloja on siirtynyt kasvitilojen ryhmään.

Mittakaavaetujen ja markkinakehityksen myötä toimiala keskittyy edelleenkin voimakkaasti. Maatilojen määrä vähenee ja tuotanto jakautuu entistä enemmän suurille maatiloille, mikä edellyttää tuotantoa jatkavilta yrityksiltä tuotantoyksiköiden kasvattamista. Rakennekehitys voi säilyä AB-alueella suhteellisen vakaata, jos tulo- ja investointitukia myönnetään entiseen tapaan. Suurin tarve rakennekehitykselle näyttäisi olevan lypsykarjataloudessa, jossa tuotanto vastaa kotimaan kulutusta ja jossa ns. uutena ilmiönä ollut havaittavissa yli 30 lehmän tilojen luopuminen tuotannosta. Lypsy- ja nautakarjataloudessa tuotanto on selvästi vähentynyt AB-alueella myös 2008–2011 aikana huolimatta tuotantosidonnaisista tulotuista ja investointituista. Jatkossa investoinnit keskittyvät tiloille, jotka tähtäävät yli 50 lehmän tilakokoon. Investointituilla on suuri merkitys investointien kannattavuudelle paitsi lypsy- ja nautakarjataloudessa, myös sika- ja siipikarjataloudessa, koska sika- ja siipikarjatalouden tuet on suurelta osin irrotettu tuotannosta. Sika- ja siipikarjataloudessa markkinahinnat määräävätkin jatkossa aiempaa enemmän sen, onko tuotannosta saatava kate riittävä suhteessa tuottajan investointimenoon, jota investointituki pienentää.

Maatalouden rakennekehitys jatkuukin AB-alueella ja koko Suomessa tulevina vuosina nopeana yksikkökokojen kasvaessa ja tilalukumäärän pienentyessä. Siihen ohjaavat paitsi mittakaavaedut, myös maatalouspoliittiset linjaukset. EU:n komissio on asettanut Etelä-Suomen kansallisen kotieläintuen ehdoksi investointituen täysimääräisen hyödyntämisen. Maatalouden ja elintarvikesektorin kilpailukyvyn kehittäminen ja tuottavuuden parantaminen edellyttävätkin nykyisen kaltaista, varsin rivakkaa rakennekehitystä ja yrityskoon kasvua. Jo yksin teknologinen kehitys johtaa siihen, että maatilojen koko kasvaa. Tämän tulee

johtaa kokonaistuottavuuden kasvuun, jotta yksikkökustannukset laskisivat ja kilpailukyky voisi parantua tai säilyä edes ennallaan suhteessa läheisiin naapurimaihin, joissa maatilat ovat suurempia kuin AB-alueella. Myönteinen tuottavuuskehitys on tärkeä tavoite yksittäiselle yritykselle ja se on samalla koko alan säilymisen ja kasvun edellytys.

Tutkimustulokset antavat kuitenkin viitteitä siitä, että rakennekehityksestä saatavat hyödyt näyttäisivät jäävän Suomen oloissa alhaisemmiksi kuin edullisemmilla tuotantoalueilla, koska Suomen oloissa pääoman ja kapasiteetin käyttöaste jää lyhyen kasvukauden ja lyhyiden työhuippujen vuoksi alhaisemmaksi kuin edullisemmilla tuotantoalueilla. Merkittävä osa mittakaavahyödyistä menetetään hajanaisesta peltolohkorakenteesta ja lyhyestä kasvu- ja laidunkaudesta aiheutuviin kustannuksiin, kuten kasvavaan työnmenekkiin hehtaaria kohti. Nämä viimeksi mainitut kustannukset ovat Suomessa poikkeuksellisen korkeat. Samalla kun etäisyys tilakeskuksesta peltolohkoille kasvaa, kasvavat myös lannanlevityksen ja peltoviljelyn kustannukset ja siihen käytetty aika. Tämän lisäksi lyhyt kasvukausi ja sisäruokinnan järjestäminen lisäävät karjakoon kasvattamisen kustannuksia ja työnmenekkiä. Tämä heikentää saavutettuja mittakaavaetuja töiden järjestämisessä ja koneistuksessa.

Tuottavuuden parantamisella on Suomen olosuhteissa siten omat rajansa ja maatalouden kilpailukykytavoitteiden saavuttaminen on vaikeaa pelkästään kustannustehokkuutta lisäämällä tai pääoman käyttöä tehostamalla. Maatalouden työpaikkojen korvaaminen pääomapanoksilla saattaa lisätä myös yhteiskunnallisia kustannuksia. Kustannukset nousevat muun muassa sen vuoksi, että vanhaa tuotantokapasiteettia ei ehditä poistaa riittävästi jos kiirehditään rakennekehitystä rakentamalla enemmän uutta tuotantokapasiteettia. Maatalouden rakennekehityksen nopeuttamista nykyisestä, muihin maihin verrattuna varsin nopeasta vauhdista, onkin vaikea perustella taloudellisilla saati sosiaalisilla näkökulmilla.

3. Maatalouden hintakehitys sekä tulo- ja kannattavuuskehitys

3.1. Tuottaja- ja panoshintakehitys

Tarkastelemalla hintojen välittymistä EU:n muista jäsenmaista Suomen markkinoille saadaan viitteitä siitä, kuinka hyvin suomalaiset markkinat ovat integroituneet EU:n sisämarkkinoihin maataloustuotteiden kaupassa. Käytännössä Suomen on pienen kokonsa takia sopeuduttava hintamuutoksiin EU:n markkinoilla eli Suomen toimilla ja tuotantomäärillä ei ole vaikutusta markkinahintoihin EU:n sisämarkkinoilla. Maatalouden tuottajahintaindeksin kehitys onkin pääosin noudattanut Suomessa muiden EU-maiden kehitystä. Tuotantopanosten hintaindeksin kehitys ei myöskään merkittävästi eroa Suomessa muiden EU-maiden kehityksestä.

Suomen hinnoissa on kuitenkin erityispiirteitä. Esimerkiksi sianlihan ja maidon markkinahinnat vaihtelevat vähemmän Suomessa kuin monissa muissa EU-maissa. Kananmunista on ollut Suomessa aiemmin ylitarjontaa ja niiden tuottajahinta on ollut matala muuhun EU:hun verrattuna. Suomalaisille maidontuottajille puolestaan maksetaan maidon korkean jalostusasteen vuoksi hieman korkeampaa hintaa kuin EU:n tuottajille keskimäärin ja maidon hinnan kausiporrastus on Suomessa monia muita maita voimakkaampi. Lihan tuottajahinnat ovat olleet Suomessa viime vuosina lähellä EU:n keskimääräistä tasoa.

Tutkimukset viittaavat kuitenkin siihen, että Euroopan markkinoilla havaitut hintamuutokset siirtyvät varsin hitaasti Suomen lihamarkkinoille. Sianlihamarkkinoilla hintatietojen välittyminen on hitaudesta huolimatta tilastollisin mittarein todettavissa. Sen sijaan naudanlihamarkkinoilla edes huomattavan suuret hintamuutokset Keski-Euroopan markkinoilla eivät välity Suomen markkinoille siinä määrin, että muutokset olisivat tilastollisin menetelmin todettavissa.

Suomen maatalousalan markkinoille on tyypillistä pitkistä välimatkoista johtuvat kuljetuskustannukset ja väestömäärästä johtuen suhteellisen pienet mutta keskittyneet markkinat. Meijereiden ja teurastamoiden määrää Suomessa on vähennetty elintarviketeollisuuden kilpailukyvyn parantamisen ja tuotannon keskittymisen takia. Myös maatalouden panosteollisuudessa tuotantolaitosten keskittyminen ja kasvavat välimatkat aiheuttavat lisäkustannuksia.

3.2. Maatalouden taloudellisten tulosten kehitys ja kansallisen tuen merkitys

Maa- ja puutarhatalouden kannattavuus putosi AB-alueella kaikissa päätuotantosuunnissa Suomen liityttyä Euroopan unioniin vuonna 1995. Yrittäjätulo putosi 20 prosenttia ja kannattavuuskerroin aleni 0,82:sta 0,68:een. Kannattavuuskerroin lasketaan jakamalla yrittäjätulo palkkavaatimuksen ja korkovaatimuksen summalla. Kannattavuuskerroin 0,68 osoittaa, että yrittäjätulo kattoi 68 prosenttia maatalousyrittäjän oman työn ja oman pääoman kustannuksista. Vuoden 1995 jälkeenkin tulos- ja kannattavuuskehitys on ollut AB-alueella laskeva. Vuonna 2010 koko AB-alueen kannattavuuskerroin oli 0,47, mikä osoittaa, että yrittäjä sai omalle työtunnilleen 47 prosenttia maataloustyöntekijän saamasta 14 euron tuntikorvauksesta sekä 47 prosenttia omalle pääomalle asetetusta 6,3 prosentin korkotavoitteesta.

Vuoden 2007 syksyllä alkanut raaka-ainehintojen nousu veti maatalouden tuottajahinnat, varsinkin viljan ja maidon hinnat nousuun. Talouslaman seurauksena tuottajahinnat putosivat vuonna 2009. Kun näihin vuosiin liittyi vielä energian, lannoitteiden ja rehujen voimakas hinnannousu, heikkeni kannattavuus voimakkaasti jo vuonna 2008 ja erityisesti vuonna 2009, huolimatta tuottajahintojen palautumisesta ja vuosikymmenen ennätyssadosta. Maatalouden tuottaja- ja panoshintasuhteet ovat kehittyneet maatalousyrittäjien näkökulmasta epäsuotuisasti. Panoshinnat ovat nousseet selvästi tuotehintoja nopeammin, erityisesti kotieläintiloilla.

Tässä evaluaatioraportissa 141-tukien merkitystä AB-alueen maatalousyrityksille on tarkasteltu MTT:n kannattavuuskirjanpitoaineiston perusteella. Vuonna 2010 AB-alueella oli kaikkiaan 405 kannattavuuskirjanpitotilaa, joilla standardituotokseen perustuva taloudellinen tilakoko ylitti FADN-seurannan 8 000 euron tilakokoalarajan. Näiden tuloksista on painotettu tuotantosuunnittain ja SO-tilakokoluokittain keskiarvotulokset kuvaamaan alueen vastaavien 18 570 tilan tuloksia. Jotta saadaan selkeä kuva kansallisen 141-tuen merkityksestä, tarkastelussa on keskitytty niihin tuotantosuuntiin, joille Etelä-Suomen 141-tuella on merkitystä.

Tuottavuustarkastelun mukaan AB-tukialueella sika- ja maitotilojen tuottavuus on noussut aikavälillä 2000–2010 keskimäärin 2,7 ja 4,5 prosenttia vuosittain. Tällä ja tilakokoa kasvattamalla maatalousyrittäjät ovat yrittäneet kompensoida tuotos- ja panoshintojen heikkenevää hintasuhdetta. Kannattavuuskirjanpitoaineiston painotettujen tulosten mukaan viimeisen kymmenen vuoden aikana AB -alueen kotieläinyritysten peltoala on kasvanut 40 prosenttia ja eläinyksikkömäärä 75 prosenttia. Kaikki tilakokoluokat huomioon ottaen 45 prosenttia AB-alueen kotieläin- ja puutarhayrityksistä on lopettanut tuotannon vuodesta 2000 vuoteen 2011 ulottuvalla jaksolla.

Näinkään merkittävä tuottavuus- ja rakennekehitys ei ole riittänyt pitämään yritysten taloustilannetta ennallaan. Puutarha- ja kotieläinyritysten yrittäjätulo eli yrittäjän työpanokselle ja omalle pääomalle jäävä korvaus ei ole kasvanut nimellisestikään. Samaan aikaan yritystoimintaan sitoutuneen, usein toimialan ulkopuolelta sijoitetun oman pääoman määrä on 2000-luvulla likimain kaksinkertaistunut, joten omalle pääomalle jäävä korvaus on näin heikentynyt. Yritysten velat ovat kolminkertaistuneet ja näistä aiheutuvat korkomenot luonnollisesti painavat osaltaan yrittäjätuloa. Kaikki tuotantokustannukset ja siis myös maatalousyrittäjien työstä ja omasta pääomasta aiheutuvat kustannukset huomioiva yrittäjänvoitto on ollut vuosittain negatiivinen, noin -40 000 euroa tilaa kohti

Yrittäjätulosta noin 65–70 prosenttia muodostuu kansallisesta 141-tulotuesta ja siihen läheisesti liittyvästä luonnonhaittakorvauksen kansallisesta lisäosasta. Vuonna 2010 pelkän 141-tulotuen osuus yrittäjätulosta oli 45 prosenttia. Näin siis esimerkiksi 141-tulotuen poistaminen leikkaisi lähes puolet maatalousyrittäjien yrittäjätulosta. Mahdolliset tukileikkaukset heikentäisivät näin erittäin merkittävästi maatalousyritysten tuloksia ja kannattavuutta.

Tuotantosuunnittain tarkasteltuna voimakkaasta rakennekehityksestä johtuen lypsykarjatilojen kokonaistuotto ja myös yrittäjätulo ovat nousseet vuosittain. Suhteessa kokonaistuottoon yrittäjätulo on kuitenkin alentunut. Kansalliset 141-tulotuet ja luonnonhaittakorvauksen kansallinen lisäosa ovat muodostaneet vuosittain noin 30 prosenttia yrittäjätulosta ja 141-tulotuki yksinään noin 20 prosenttia. Kun huomioidaan myös omasta työstä ja omasta pääomasta aiheutuvat kustannukset, yrittäjänvoitto on ollut negatiivinen koko tarkastelukauden, noin -35 000 euroa. AB-alueen kaikista lypsykarjatiloista 60 prosenttia on lopettanut tuotannon 2000-luvulla, mutta rakennekehityksestä ja tilakoon kasvusta huolimatta kannattavuuskehitys ei ole kääntynyt nousuun, vaan kannattavuuskerroin on pysynyt 2000-luvun noin 0,5–0,6:n tasolla.

Muut nautakarjatilat -ryhmässä kokonaistuotto ja myös yrittäjätulo ovat nousseet vuosittain voimakkaasta rakennekehityksestä johtuen. Vuosina 2008 ja 2009 yrittäjätulo on muodostunut kokonaisuudessaan 141-tulotuesta ja luonnonhaittakorvauksen kansallisesta lisäosasta. Pelkän 141-tulotuen osuus on vaihdellut tarkastelukaudella 40 ja 70 prosentin välillä. Kun huomioidaan myös omasta työstä ja omasta pääomasta aiheutuvat kustannukset, yrittäjänvoitto on ollut vuosittain negatiivinen, noin -40 000 euroa. Kokonaistuotto ei ole riittänyt kattamaan tuotantokustannusta. Kannattavuuskerroin on vaihdellut viime vuosina 0,3–0,4:n tasolla.

Voimakkaan rakennekehityksen myötä myös sikatilojen kokonaistuotto on noussut. Tarkastelukaudella 141-tulotuen ja luonnonhaittakorvauksen kansallisen lisäosan osuus kokonaistuotosta on alentumassa vuoden 2007 noin 12 prosentista vuoden 2011 noin 9 prosenttiin. Vastaavasti sikatilojen yrittäjätulo on heikentynyt koko tarkastelukauden ja uhkaa ennusteen mukaan romahtaa 2011 noin 5 000 euroon vuodessa, mikä tarkoittaa yrittäjätulon olevan tuolloin kokonaisuudessaan tukea. Kun huomioidaan myös omasta työstä ja omasta pääomasta aiheutuvat kustannukset, yrittäjävoitto laskisi noin -70 000 euroon eli tuotanto olisi voimakkaasti tappiollista. Kannattavuuskerroin olisi 2001 ennusteen mukaan 0,06. Vuonna 2013 sika- ja siipikarjatalouden tuotannosta irrotettu tuki pienenee kokonaistasolla noin 37 prosenttia. Tällöin sekä yrittäjätulo että suhteellista kannattavuutta kuvaava kannattavuuskerroin painuvat negatiivisiksi. AB-alueen sikatiloista 67 prosenttia on lopettanut tuotannon 2000-luvulla vuoteen 2011 mennessä.

Siipikarjatiloilla kokonaistuotto on noussut vuosittain. Osittain yritysmäärän pienuudesta johtuen tulokset vaihtelevat vuosittain voimakkaasti. Vuonna 2008 yrittäjätulo painui negatiiviseksi, kun taas 2010 päästiin noin 40 000 euron yrittäjätuloon. Tuolloinkin kuitenkin yrittäjätulosta 87 prosenttia koostui 141-tulotuesta ja luonnonhaittakorvauksen kansallisesta lisäosasta. Pelkän 141-tulotuen osuus yrittäjätulosta oli 75 prosenttia. Kun huomioidaan myös omasta työstä ja omasta pääomasta aiheutuvat kustannukset, yrittäjävoitto laskisi 2012 jo noin -30 000 euroon. Vuonna 2013 tapahtuva sika- ja siipikarjatalouden tuotannosta irrotetun tuen leikkaus pienentää yritysten keskimääräistä yrittäjätuloa edelleen vuosien 2011–2012 tasosta noin 30 prosenttia. Kannattavuuskerroin laskisi vuonna 2013 noin 0,35:een edeltävien vuosien ennusteen mukaisesta 0,5:en tasosta.

Kasvihuoneyrityksillä yrittäjätulo on muodostunut kokonaisuudessaan kansallisesta 141-tulotuesta. Ennusteiden mukaan vuosina 2011 ja 2012 yrittäjätuloa ei saada enää lainkaan. Näin yrittäjän omalle työlle ja pääomalle ei saada lainkaan korvausta. Myös korkokustannukset ja osa poistoista jää kattamatta. Yrittäjänvoitto laskisi noin -80 000 euroon. Kannattavuuskerroin tulisi olemaan negatiivinen, -0,4.

Tarkastelun mukaan investointiavustukset ovat parantaneet yritysten vakavaraisuutta ja maksuvalmiutta. Ilman investointiavustusta velkamäärä olisi tarkastelluissa tuotantosuunnissa noin 10 prosenttia nykyistä korkeampi. Kasvaneesta velkamäärästä aiheutuvat lisäkorkomenot olisivat puolestaan vähentäneet velkojen takaisinmaksuun käytettäväksi jäänyttä rahoitustulosta. Näiden vuoksi vieraan pääoman takaisinmaksuaika olisi noin viisi vuotta nykyistä korkeampi. Investointiavustuksilla on näin merkittävästi ylläpidetty AB-alueen maatalousyritysten mahdollisuuksia rakennekehitykseen ja sen myötä kannattavuuden ja tuottavuuden kehittämiseen.

4. 141-tuen merkitys AB-tukialueen maataloustuotannossa ja aluetaloudessa

4.1. 141-tulotuen merkitys maatalouden tuotantovolyymien säilyttäjänä

Jos 141-tulotukea ei olisi maksettu lainkaan 2008–2011 eikä maksettaisi 2012–2020, AB-alueen maidontuotanto vähenisi MTT:ssa tehtyjen mallianalyysien mukaan jopa alle puoleen vuodesta 2010 (472 milj. litraa) eli tasolle 220 milj. litraa vuonna 2020. Tämä olisi myös pois koko maan maidontuotannosta, koska AB-alueen tuotanto ei C-alueen tukirajoitteiden vuoksi juurikaan korvaudu C-alueen tuotannon kasvulla. 141-tulotuen poistuminen ei tulosten mukaan kokonaan lopettaisi emolehmätuotantoa AB-alueilta, mutta emolehmien lukumäärä vähenisi neljänneksen vuoden 2007 tasosta vuoteen 2020 mennessä. Näiden seurauksena AB-alueen maidontuotanto alenisi noin 45% ja naudanlihantuotanto alenisi noin 40 %

vuoteen 2020 mennessä. Tulokset 141-tulotukien merkityksestä AB-alueen maatalouden kokonaistuotannolle tuotantosuunnittain perustuvat MTT:ssa laadittuun Suomen maataloutta kuvaavaan alueelliseen sektorimalliin DREMFIAan.

Nämä tulokset korostavat tuotantosidonnaisen tuen merkitystä maidon- ja naudanlihantuotannolle. Maito- ja nautatiloilla tuotantosidonnaiset tulotuet ja investointituet ovat toisiaan täydentäviä ja jopa toisiaan edellyttäviä korkeiden muuttuvien kustannusten takia. Esimerkiksi tuotantosidonnaisen tuen loppuminen johtaisi saatujen tulosten mukaan katetuoton ja investointien kannattavuuden heikkenemiseen. Korkeakaan investointituki ei silloin ylläpitäisi tuotantoa eikä kehittäisi tuotantorakennetta ja tuottavuutta, jos eläinpaikka ei tuota katetta investoidulle pääomalle. Saatujen tulosten mukaan esimerkiksi investoinnit suuriin, yli 50 lehmän tuotantoyksiköihin vähenisivät ilman maidon tuotantosidonnaista 141-tukea, jolloin myös rakennekehitys tältä osin hidastuisi ja tuotanto alenisi. Sen sijaan sika- ja siipikarjatalouden kansalliset tuet niin AB- kuin C-alueillakin on jo lähes kokonaan irrotettu tuotannosta, vaikka 141-sika- ja siipikarjatuen ehtona on kotieläintilana pysyminen. Saatujen tulosten mukaan 141-tulotuen poistaminen sika- ja siipikarjataloudelta johtaisi runsaan 10 % vähenemiseen tuotannossa AB-alueilla.

Maidon- ja lihantuotannon vähentyessä 141-tulotukien poistamisen seurauksena 2008–2020 myös rehuviljan kysyntä jäisi selvästi alhaisemmaksi. Tämä johtaisi mallianalyysien mukaan jopa 170–180 000 hehtaarin vähenemiseen viljantuotannossa ja 50 000 hehtaarin vähenemiseen nurmialassa Etelä-Suomen alueella. Tämä yli 200 000 ha siirtyisi suurimmaksi osin kesannolle ja heikkotuottoisimmat pellot, noin 100 000 ha, jäisivät kokonaan viljelemättä.

141-tulotuella on huomattava merkitys AB-alueiden tuotannolle ja yrittäjätuloon. Tuotannon vähentyessä 141-tulotukien poistumisen seurauksena 2008–2020 yrittäjätulo vähenisi tulosten mukaan enemmän kuin 141-tulotuen mukana poistunut rahamäärä. Yrittäjätulo vähenisi tulosten mukaan AB-alueella suhteessa perusuraan pysyväisluonteisesti noin 95 milj. euroa, mikä tarkoittaisi 36 %:n vähennystä.

4.2. Tuotantosidonnainen tuki vs. tuotannosta irrotettu tuki

Vuonna 2007 sovitun tukijärjestelmän (Komission päätös K(2008)696) myötä 141-tulotukien rakenne muuttui sika- siipikarjasektoreilla. Sika- ja siipikarjatalouden 141-tulotuet on maksettu AB-alueella vuodesta 2009 alkaen tuotannosta irrotettuna tilakohtaisena tukena, joka perustuu pääsääntöisesti tilan vuoden 2007 tuotantomääriin. Märehtijöiden 141-tulotuet on sitä vastoin maksettu edelleen tuotantosidonnaisina tukina koko tukikauden ajan. Tässä tutkimuksessa saadut tulokset tuovat esille tuotantosidonnaisen tuen suuren merkityksen maidon- ja naudanlihantuotannolle. Näiden tuotantosuuntien tuotanto on tuista huolimatta jatkuvasti vähentynyt AB-alueella, kun taas sika- ja siipikarjatuotanto on myös ajoittain lisääntynyt.

Tuen irrottaminen tuotannosta vähentää kannustinta tuottamiseen ja jättää tuotannon määrän aiempaa enemmän markkinoiden ja markkinaosapuolten strategisten päätösten ohjattavaksi. Teoriassa tuen irrottaminen tuotannosta johtaa kilpailullisilla markkinoilla paremmin kysyntää vastaavaan tuotantoon ja tehokkaampaan tuotantoresurssien käyttöön. Tuen irrottaminen tuotannosta antaa mahdollisuuden lopettaa suhteellisesti heikommin kannattavaa tuotantoa ilman että tukea menetetään. Tämä nostaa kotimaisia markkinahintoja, siinä määrin kuin se EU:n laajuisilla yhteismarkkinoilla on mahdollista (hintaeroja toki esiintyy), ja parantaa maataloustuloa, ellei irrotetun tuen määrä vähene. Myös panoskäyttö vastaa teoriassa joustavammin panosten ja tuotteiden hintasuhteiden muutoksiin ilman tuotantotukia, mikä parantaa taloudellista tehokkuutta. Jos siis markkinoilta saatava hinta kattaa tuotannon muuttuvat kustannukset ja riittävän osan kiinteistä tuotantokustannuksista, tuen irrottaminen tuotannosta on viljelijöiden edun mukaista.

Jos esimerkiksi maitotuotteiden ja naudanlihan markkinatilanne pysyy vahvana, ts. kysyntä säilyy vahvana tarjontaan nähden, kansallisen tuen irrottamisella tuotannosta on vähäisempi merkitys kuin jos markkinatilanne ja tuotehinnat heikkenevät. Heikossa markkinatilanteessa tuotantoon sidotulla kansallisella tuella on erittäin suuri vaikutus eläinkohtaisiin katteisiin ja investointien ja koko tuotannon kannattavuuteen. MTT:ssa tehtyjen arvioiden mukaan kansallisen tuen irrottaminen tuotannosta johtaisikin kotieläintuotannon vähenemiseen Etelä-Suomessa. Erityisesti maidon- ja naudanlihantuotanto vähenisi. Tuotantoon sidottu kansallinen tuki Etelä-Suomen nautakarjataloudelle on pitänyt osaltaan investoinnit suuriin kotieläinyksiköihin kannattavina.

Peltoalatuet, jotka maksetaan lähes kokonaan riippumatta kotieläintuotannosta, eivät kannusta kotieläintuotantoon, vaan voivat jopa edistää kotieläintuotannosta luopumista jos kotieläintuotannon kannattavuus heikkenee viljan hinnan noustessa. Ainoastaan LFA- ja ympäristötuen korotuksia maksetaan kotieläintiloille riittävän eläinmäärän ylläpitämisestä (0.4 ey/ha), mutta niitäkään ei voida maksaa eläinpaikan katteeksi laajennusinvestoinneissa, jotka ovat keskeisiä tuotannon jatkumiselle ja laajuudelle. Peltoalalle maksettavia tulotukia, jotka vaikuttavat kaikkien tuotantosuuntien viljelijöiden tuloihin, ei tulisi vaikutuksiltaan rinnastaa kotieläintiloille maksettavaan tuotantosidonnaiseen tulotukeen, joka vaikuttaa eläinpaikan katteeseen ja eläinpaikkainvestoinnin tuottoon. Saatujen tulosten mukaan esimerkiksi investoinnit suuriin, yli 50 lehmän tuotantoyksiköihin vähenisivät ilman maidon tuotantosidonnaista 141-tukea, jolloin myös rakennekehitys tältä osin hidastuisi ja tuotanto alenisi.

Sika- ja siipikarjalle maksettavat eläinyksikkökohtaiset 141-tulotuet irrotettiin AB-alueella tuotannosta vuonna 2009. Tämä on yhdessä lihan ja viljan heikentyneen hintasuhteen kanssa leikannut pois osan sianlihan kasvaneesta tuotannosta. Sianlihantuotanto on vähentynyt vuoden 2008 ennätystasolta jo 15 % vuoteen 2011 mennessä. Kehitys vastaa MTT:ssa vuonna 2008 tehtyä arviota, jonka mukaan kansallisen tuen irrotus yhdessä korkeiden viljan hintojen kanssa johtaa vähitellen tuotannon vähenemiseen 20 %:lla eli korkeintaan kotimaista kysyntää vastaavaan tuotantoon (Lehtonen & Niemi 2008). Tämän tutkimuksen tulosten mukaan sikatilojen talous on heikentynyt viime vuosina siinä määrin, että 141-tulotukien loppumisen myötä Suomesta tulisi sianlihan nettotuoja. Tuotanto alenisi 155 milj. kg:n tasolle, mikä olisi 28 % vähemmän kuin vuoden 2007 tuotanto ja 18 % vähemmän kuin vuoden 2011 sianlihan kulutus. Tuotannon kehitys ilman 141-tulotukea riippuu kuitenkin myös markkinoiden kehityksestä. Saatu tulos sianlihantuotannon merkittävästä vähenemisestä jo perusskenaariossa ja 141-tuki poistettaessa perustuu osin lihan ja viljan hintasuhteen heikkenemiseen, mikä houkuttelee sikatiloja siirtymään pelkkään viljan viljelyyn. Vastaavasti sianlihan vahvistuvat hinnat suhteessa rehuviljan hintaan vähentäisivät tukien merkitystä.

Vaikka sika- ja siipikarjatalouden kansalliset 141-tulotuet ovat vähentyneet ja ne on pääosin irrotettu tuotannosta, niillä on edelleen merkitystä tilojen taloudelle ja investoinneille, vaikkakin aiempaa vähemmän. Joka tapauksessa näyttää siltä, että Suomella ei ole sianlihatuotannossa sellaisia kustannusetuja, että kulutusta suurempi sianlihan tuotanto voisi pitkään jatkua. Tällöin tuotanto vähenee riippumatta 141-tulotuen kehityksestä, ja väheneminen kiihtyy 141-tulotukea vähennettäessä.

Koska sianlihantuotannon tuet on irrotettu tuotannosta, markkinahintojen kehityksellä ja investointituilla on entistä suurempi merkitys investointipäätöksiä tehtäessä. Investointituen mahdollinen leikkaaminen ei tosin heti laskisi sianlihantuotantoa enempää kuin meneillään oleva kehitys, koska eläinpaikkoja on sikatalouteen rakennettu paljon ja ne pysyvät pitkään tuotannossa. Kuitenkin keskipitkällä aikavälillä, ts. kohti vuotta 2020 mentäessä sianlihan tuotantomäärien säilyminen on ehdollinen investointitukien maksulle, koska lisäpaikkoja täytyy vähitellen alkaa rakentaa tuotannosta luopumista vastaavasti.

Kannustin tuotantoon on vähentynyt myös siipikarjanlihantuotannossa tuen irrottamisen ja osittain viljan korkean hinnan takia. Tehtyjen mallisimulointien mukaan tuotannon kannattavuus heikkenee siinä määrin, että siipikarjanlihan kulutuksen kasvu voi johtaa ensisijassa tuonnin kasvuun eikä tuotannon kasvuun Suomessa. Myös tuotannon lievä väheneminen on mahdollista lihan ja rehun hintasuhteen pysyessä heikkona. Tähän asti siipikarjanlihan tuottajahinnat ovat olleet EU-vertailussa varsin korkeita ja vakaita ja kotimainen tuotanto on pysynyt erittäin hyvin kotimaisen kysynnän tahdissa. Tulevina vuosina tämä on entistä haasteellisempaa. Siipikarjanlihan tilanne on kuitenkin kokonaisuutena sikataloutta vahvempi, koska kotimainen kysynnän ennustetaan edelleen kasvavan ja lihaa tuotetaan kysyntää vastaavasti suurehkoissa yksiköissä alle 150 tilalla.

En utvärdering av verkningarna av det nationella stödet till södra Finland

Tillämpning och verkningar i Finland av åtgärder i enlighet med kommissionens beslut K(2008)696

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Sammandrag och slutledningar

1. Utvärderingens utgångspunkter och stödsystemet

Syftet med utvärderingen var att utreda hur de stödåtgärder genomfördes som ingår i det stödsystem (Kommissionens beslut K(2008)696) om vilket en överenskommelse ingicks utifrån artikel 141 i Finlands anslutningsavtal, samt hur stödåtgärderna påverkade integrationen av södra Finlands jordbruk i den gemensamma jordbrukspolitiken. Med södra Finlands odlares fulla integration i den gemensamma jordbrukspolitiken avses i denna utvärdering att de ekonomiska förutsättningarna för att bedriva jordbruk inom södra Finlands AB-stödområde samt möjligheterna att utveckla strukturen och på så sätt förbättra produktiviteten blir bestående inom EU:s gemensamma marknad. Utvärderingen har gjorts med hjälp av en granskning av vilken betydelse de stöd som grundar sig på kommissionens beslut K(2008)696 har haft för de ekonomiska resultat som gårdarna inom stödområdena A och B har nått samt genom en analys av jordbrukets strukturutveckling inom AB-området och en jämförelse med utvecklingen hos andra EU-länder. Uppmärksamhet har även fästs vid jordbrukets produktivitetsutveckling, effektiviseringen av produktionen och förändrade produktionsmetoder. Den socioekonomiska betydelsen av jordbruket i södra Finland har beskrivits bl.a. genom en granskning av lantbruks- och livsmedelssektorns andel i AB-områdets ekonomi samt av konsekvenserna av jordbruksproduktionens eventuella minskning för regionens totala intäkter och sysselsättning.

Utvärderingen har främst koncentrerat sig på att undersöka den förändring som till följd av inkomst- och investeringsstöd åstadkommits i inkomst- och lönsamhetsutvecklingen och via denna på en undersökning av hur anpassningen till EU:s gemensamma jordbrukspolitik har framskridit. För att de ekonomiska förutsättningarna för att bedriva jordbruk i AB-området samt möjligheterna att utveckla näringens struktur och på så sätt att förbättra produktiviteten inom EU:s gemensamma marknad får inte en reducering eller ett avskaffande av de stöd som grundar sig på kommissionens beslut K(2008)696 äventyra förutsättningarna för en lönsam produktion på gårdarna i området. Dessutom ska användningsgraden av investeringarna i jordbruket hålla fortsatt hög nivå och den lönsamhet som utgör en förutsättning för djurproduktionens fortbestånd i området vara tryggad. Då dessa förutsättningar har förverkligats kan man göra slutledningar om södra Finlands odlares integration fullt ut i den gemensamma jordbrukspolitiken och om möjligheterna att reducera eller avskaffa det nationella stödet.

1.1. Stödsystem för jordbruket inom AB-området

På AB-området i södra Finland består grunden till stödsystemet av stödformer för Europeiska unionens (EU:s) gemensamma jordbrukspolitik, som till exempel direkta helt och hållet EU-finansierade direkta stöd samt ersättning för naturskador och miljöstöd för jordbruket. Finlands målsättning har varit att på AB-området fullt ut utnyttja stödformerna i EU:s gemensamma jordbrukspolitik. År 2011 riktades stöd i överensstämmelse med den gemensamma jordbrukspolitiken sammanlagt 625 milj. euro till jordbruket inom AB-området. Stödet bestod av s.k. CAP-inkomststöd (274,3 milj. euro, kompensationsbidrag för ogynnsamma jordbruksområden (189,6 milj. euro) och miljöstöd (161,1 milj. euro). Dessutom har på AB-stödområdet betalats en nationell tilläggsdel till ersättningen för naturskador sedan 2005. Den sammanlagda tilläggsersättning som betalades till AB-området uppgick till 43,5 milj. euro.

Inom ramen för EU:s system för direkta stöd betalas även produktionsbundet stöd på AB-stödområden med stöd av artikel 68. Enbart i mjölkkobidrag som gäller inom AB-området kan högst 9,5 miljoner euro per år betalas och av det bidrag som betalas för nötkött i hela landet (oxe, tjur, diko och kviga) betalas inom AB-området ca 11,7 milj. euro.

Den viktigaste av de nationella stödformerna för AB-området är det stöd som betalas på grundval av artikel 141 och med vilket EU:s gemensamma stödformer har kompletterats. Finland har från och med 1997 utnyttjat den möjlighet till nationellt stöd som konstaterades i artikel 141. EU-kommissionen har likväl fastställt stränga villkor för det nationella stödet: utöver det fullskaliga utnyttjandet av de gemensamma stödformerna har Finland även varit skyldigt att inom AB-området maximalt även utnyttja de möjligheter som erbjuds genom strukturstödet.

2. Jordbruksproduktionen och strukturutvecklingen inom AB-området

2.1. Jordbrukets strukturomvandling inom stödområde AB

År 2022 fanns det inom AB-området 26 562 gårdar, vilket motsvarar ca 43 procent av samtliga lantgårdar i Finland. Antalet gårdar har minskat med ca 11 procent jämfört med år 2006 och närmare 22 procent jämfört med år 2000. Den areal jordbruksmark som är i användning har likväl inte märkbart minskat, utan gårdarnas genomsnittliga areal har fortsatt att växa. Gårdarna inom AB-området hade 2011 en genomsnittlig odlad jordbruksareal på 40,4 hektar, medan motsvarande tal för hela landet var 37,4 hektar. Stödområde AB omfattar ca 47 procent av jordbruksarealen i hela landet.

AB-området är för växtodlingens del det viktigaste produktionsområdet i hela landet. Det motsvarar 85 procent av veteproduktionen och 55 procent av produktionen av foderspannmål.. Även i trädgårdsproduktionen var AB-områdets betydelse stor, då 75 procent av hela landets areal för produktion av frilandsgrönsaker, 40 procent av arealen för frukt-, bär- och plantskoleproduktion och 44 procent av växthusproduktionen försiggår inom området. Områdets andel av produktionen av svin- och fjäderfäkött är ca 55 procent och av mjölk- och nöttköttproduktionen drygt 20 procent. Inom AB-områdetbefinner sig en betydande del av landets livsmedelsindustri samt landets största bosättningscentra.

En granskning utifrån produktionsriktningar ger vid handen att antalet djurskötselgårdar står för den största minskningen, i synnerhet svin-, mjölk- och fjäderfägårdar (procentuell minskning 39, 37 och 21). Antalet gårdar har minskat, men samtidigt har de gårdar som blivit kvar fått större ekonomisk tyngd på grund av den fortgående strukturutvecklingen.

Antalet mjölkgårdar inom AB-området uppgick under kvotperioden 2011/2012 till sammanlagt 2 200, vilket motsvarar 21,2 procent av det totala antalet mjölkgårdar i Finland. Antalet mjölkgårdar inom AB-området har jämfört med kvotåret 2007/2008 minskat med 774 gårdar eller 26 procent, dvs. i en något snabbare takt än genomsnittet för hela landet. Mjölkgårdarnas genomsnittliga storlek har tilltagit i jämn takt under hela granskningsperioden 2006–2011. Inom AB-området hade mjölkgårdarna ca 21 mjölkkor 2006, medan antalet uppgick till nästan 27 mjölkkor 2011.

Annan nötboskapsuppfödning bedrevs inom AB-området 2011 av sammanlagt 1 015 gårdar, vilket motsvarar 27 procent av annan nötboskapsuppfödning i hela landet. Inom AB-området har antalet gårdar som bedriver annan nötboskapsuppfödning sjunkit med 180 gårdar eller 15 procent sedan 2006.

Antalet svingårdar inom stödområde AB uppgick 2011 till 969, vilket motsvarar ca hälften av det totala antalet svingårdar i Finland. Antalet svingårdar har från 2006 till 2011 inom AB-området minskat med 560 gårdar eller nästan 37 procent.

Antalet gårdar som bedriver fjäderfäuppfödning har från 2006 till 2011 inom AB-området minskat med sammanlagt 132 gårdar eller ca en femtedel. Fjäderfägårdarnas antal inom AB-området var 2011 sammanlagt 436. vilket motsvarar 62,8 procent av alla fjäderfägårdar i Finland.

2.2. Strukturutveckling inom stödområde AB i jämförelse med övriga EU-länder

Under perioden 1995–2007 upphörde över en tredje del av gårdarna inom AB-området med sin produktion. Utvecklingen har varit klart snabbare än inom EU-15 i genomsnitt. I genomsnitt upphörde 23 procent av lantgårdarna inom EU-15 med jordbruksproduktionen under perioden 1995–2007.

Minskningen av antalet gårdar inom AB-området i Finland mellan 1995 och 2007 skiljer sig inte märkbart från utvecklingen i Danmark och Tyskland, där nedläggningen av lantgårdar har skett något fortare än inom AB-området. I Sverige som blev medlem samtidigt som Finland har däremot endast ca 18 procent av gårdarna upphört med produktionen mellan åren 1995 och 2007. Även i Österrike har antalet gårdar minskat med en knapp femtedel efter att landet anslöt sig till EU.

Ca 62 procent av mjölkgårdarna inom AB-området upphörde med sin produktion under perioden 1995–2007. Utvecklingen har gått i samma riktning i jämförelseländerna. I Danmark lade två tredjedelar och i Sverige ca 60 procent av gårdarna ned sin produktion under perioden 1995–2007. I Österrike lade under samma period ca 45 av gårdarna ned sin produktion. I EU-15 var genomsnittet 39 procent.

Antalet andra gårdar som bedriver nötboskapsuppfödning har däremot inom AB-området i Finland sedan 1995 minskat i högre grad än i Danmark och Sverige. Medan ca hälften av gårdarna inom A- och B-området lade ned sin produktion under perioden 1995–2007, upphörde under motsvarande period bland de andra gårdar som bedriver nötboskapsuppfödning ca 28 procent i Danmark och 30 procent i Sverige med sin produktion.

Svingårdarnas antal halverades inom AB-området under perioden 1995–2007. Minskningen av svingårdarna inom AB-området (50,6 procent) är dock något långsammare än i jämförelseländerna Sverige, Danmark och Österrike, men närmar sig genomsnittet av minskningen av antalet gårdar i EU-15 som låg på 47,5 procent åren 1995–2007.

Antalet gårdar som producerar växthusgrönsaker har i Finland minskat i nästan lika stor utsträckning som i Sverige, dvs. med ca 40 procent. I Holland har antalet gårdar visserligen minskat mer än i Finland. Även minskningen av antalet gårdar som producerar frilandsgrönsaker har i Finland varit måttligare än i Holland, men snabbare än i Sverige. I Finland har antalet gårdar som producerar frilandsgrönsaker minskat med 62 procent, i Holland med mer än 70 procent och i Sverige med knappa 37 procent.

Även om jordbrukets strukturutveckling inom AB-området har utgjort en fartfylld process, är gårdarnas genomsnittliga storlek inom AB-området fortfarande liten i jämförelse med månget annat EU-land. Till exempel är det genomsnittliga antalet djur på mjölkgårdarna inom AB-området i Finland betydligt mindre än i Danmark, Sverige och Tyskland. Antalet mjölkkor uppgick 2007 hos gårdarna inom A- och B-området i genomsnitt till 23. Vid samma tidpunkt var det genomsnittliga antalet kreatur i Danmark redan drygt 100 kor per gård. Även i Sverige översteg den genomsnittliga storleken av mjölkgårdarna 50 mjölkkor 2007.

2.3. Strukturutvecklingens framtidsperspektiv inom AB-området

Den strukturutveckling som med antalet gårdar som måttstock har ägt rum har varit snabb inom AB-området, men på samma gång relativt jämn. Antalet djurgårdar har minskat med 7 procent per år, vilket innebär att antalet kommer att halveras inom ett decennium. Tidvis har antalet gårdar minskat ännu snabbare. Till exempel minskade antalet svingårdar 2008 med hela 15 procent per år till följd av ett problematiskt marknadsläge och förändringar i de nationella stöden. De nationella stöden för svin- och fjäderfäuppfödning lösgjordes från produktionen i början av 2009. Antalet växtodlingsgårdar har förblivit synnerligen stabilt, eftersom gårdar som har lagt ned sin djurproduktion har övergått till kategorin växtodlingsgårdar samtidigt som en del gårdar har upphört med sin växtodling.

Till följd av skalfördelar och marknadsutveckling fortgår branschens kraftiga koncentreration. Gårdarna blir färre till antalet och produktionen fördelar sig i allt högre grad på större lantgårdar, vilket förutsätter att de företag som fortsätter produktionen förstorar sina produktionsenheter. Gårdarna kan inom AB-området växa i relativt jämn takt, om inkomst- och investeringsstöd beviljas såsom hittills. Det största behovet av strukturutveckling tycks gälla mjölkgårdarnas verksamhet där produktionen motsvarar hemlandets konsumtion och där en s.k. ny företeelse har kunnat konstateras i och med att gårdar med fler än 30 kor lägger ner sin produktion. Mjölk- och nötköttproduktionen har klart minskat inom AB-området även 2008–2011 oavsett de produktionsbundna stöden och investeringsstöden. I fortsättningen koncentreras investeringarna på gårdar som har en gård med fler än 50 kor som målsättning. För investeringarnas lönsamhet är investeringsstöden av stor betydelse förutom för mjölk- och nötboskapsuppfödning även för svin- och fjäderfäuppfödning, eftersom stöden för svin- och fjäderfäuppfödning till stor del har frikopplats från produktionen. I fortsättningen bestämmer marknadspriserna allt mer, om den täckning som fås av produktionen är tillräcklig i proportion till investeringsutgiften som reduceras av investeringsstödet.

Jordbrukets strukturutveckling fortgår allktså inom AB-området och i hela Finland i rask takt under de kommande åren medan gårdarnas enhetsstorlek tilltar och antalet gårdar minskar. Utvecklingen styrs i denna riktning såväl av de fördelar skalan medför som av de jordbrukspolitiska riktlinjerna. EU-kommissionen har som villkor för det nationella djurbidraget i Södra Finland att investeringsstödet utnyttjas fullt ut. En förbättring av jordbrukets och livsmedelssektorns konkurrenskraft förutsätter ju en synnerligen rask utveckling och förbättring av produktiviteten i stil med den nuvarande. Blotta teknikens utveckling leder till att lantgårdarna blir större. Detta ska leda till att totalproduktiviteten växer för att enhetskostnaderna ska sjunka och konkurrenskraften ska kunna förbättras eller ens kvarstå oförändrad i relation till de närbelägna grannländer där gårdarna är större än inom AB-området. En positiv produktivitetsutveckling är en viktig målsättning för ett enskilt företag och på samma gång en förutsättning för tillväxt inom hela branschen.

Forskningsresultaten tyder likväl på att den nytta som medförs av strukturutvecklingen i finländska förhållanden blir mindre än i mer gynnsamma produktionsområden, eftersom kapitalets och kapacitetens användningsgrad på grund av den korta växtperioden och de korta högsäsongerna blir lägre än i mer gynnsamma produktionsområden. En betydande del av den nytta som skalan medför går förlorad på grund av den splittrade åkerskiftesstrukturen och de kostnader som föranleds av den korta växt- och betesperioden i form av en tilltagande arbetsåtgång per hektar. De sistnämnda kostnaderna är exceptionellt höga i Finland. I samma mån som avståndet från gårdens centrum till åkerskiftena växer, stiger likaså kostnaderna för gödselspridning och åkerbruk jämte den tid som arbetet tar i anspråk. Dessutom förhöjer den korta växtperioden och inomhusutfodringen de kostnader och den arbetsåtgång som ökningen av boskapsbeståndet medför. Detta försvagar de fördelar som medförs av skalan i fråga om arbetsarrangemang och mekanisering.

En produktivitetsförbättring har således i finländska förhållanden sina begränsningar och det är svårt att nå jordbrukets mål i fråga om konkurrenskraft enbart genom att höja kostnadseffektiviteten eller effektivisera kapitalanvändningen. Att ersätta jordbrukets arbetsplatser genom kapitalinsatser kan även leda till högre samhällskostnader. Kostnaderna stiger bland annat för den skull att man inte i tillräcklig utsträckning hinner göra sig av med gammal produktionskapacitet genom att bygga ut mer ny produktionskapacitet. Att ytterligare påskynda jordbrukets strukturutveckling som i jämförelse med andra länder pågår i synnerligen rask takt är något som är svårt att förespråka med ekonomiska, för att inte säga sociala argument.

3. Pris-, inkomst- och lönsamhetsutveckling inom jordbruket

3.1. Producent- och prisutveckling enligt insats

Genom att undersöka hur priserna från EU:s andra medlemsmarknader överförs till den finländska marknaden får man hänvisningar om hur väl den finländska marknaden har integrerats med EU:s inre marknad i handeln med jordbruksprodukter. I praktiken måste Finland på grund av sin ringa storlek anpassa sig till prisförändringarna på EU:s marknader. Finlands åtgärder och produktionsvolymer kan alltså inte påverka marknadspriserna på EU:s inre marknad. Utvecklingen av jordbrukets producentprisindex har således i

Finland till största delen följt utvecklingen i andra EU-länder Utvecklingen av prisindex för produktionsinsatserna skiljer sig inte heller i Finland märkbart från utvecklingen i andra EU-länder.

Finlands priser uppvisar likväl särdrag. Till exempel varierar marknadspriserna på svinkött och mjölk i lägre grad i Finland än i många andra EU-länder. Finland har haft ett överutbud av ägg och producentpriset på ägg har varit lågt i jämförelse med det övriga EU. De finska mjölkproducenterna får däremot på grund av en högre förädlingsgrad hos mejerierna ett högre pris än EU-producenterna i genomsnitt och säsongsutjämningen av mjölkpriset är kraftigare i Finland än i många andra länder. Producentpriserna på kött i Finland har under de senaste åren hållit sig nära den genomsnittliga EU-nivån.

Undersökningar tyder likväl på att de prisförändringar som konstaterats på den Europeiska marknaden mycket långsamt överförs till köttmarknaden i Finland. På svinköttsmarknaden kan förmedlingen av prisuppgifter trots det långsamma tempot konstateras med statistiska mätare. Däremot når inte ens anmärkningsvärt stora prisjusteringar på nötköttsmarknaden i Mellaneuropa den finländska marknaden i sådan utsträckning att justeringarna skulle gå att konstatera med statistiska metoder.

Den finländska jordbrukssektorns marknad kännetecknas av transportkostnader som föranleds av långa avstånd och en relativt liten men koncentrerad marknad, vilket förklaras av befolkningsmängden. Antalet mejerier och slakterier i Finland har minskats i syfte att förstärka livsmedelsindustrins konkurrenskraft och koncentrera produktionen. Även koncentrationen av produktionsinrättningarna inom jordbrukets insatsindustri och de växande avstånden föranleder merkostnader.

3.2. Utvecklingen av de ekonomiska stöden till jordbruket och betydelsen av det nationella stödet

Jord- och trädgårdsbrukets lönsamhet sjönk inom AB-området i alla huvudproduktionsinriktningar efter att Finland anslöt sig till EU 1995. Företagarinkomsten sjönk med 20 procent och lönsamhetskoefficienten från 0,82 till 0,68. Lönsamhetskoefficienten uträknas genom att företagarinkomsten divideras med summan av lönekravet och räntekravet. Lönsamhetskoefficienten 0,68 visar att företagarinkomsten täckte 68 procent av lantbruksföretagarnas kostnader för eget arbete och kapital. Även efter 1995 har resultat- och lönsamhetsutvecklingen varit negativ inom AB-området. År 2010 var lönsamhetskoefficienten för hela AB-området 0,47, vilket visar att företagaren för sitt eget arbete per timme fick 47 procent av den ersättning på 14 euro per timme som betalades till en jordbruksarbetare samt 47 procent av det räntemålet på 6,3 procent för eget kapital

Råvarornas prisstegring som inleddes hösten 2007 ledde till att jordbrukets producentpriser, i synnerhet priserna på spannmål och mjölk började stiga. Till följd av den ekonomiska depressionen sjönk producentpriserna 2009. Då dessa år ytterligare åtföljdes av en stark prisstegring på energi, gödsel- och foderprodukter, sjönk lönsamheten kraftigt redan 2008 och i synnerhet 2009 trots att producentpriserna steg till sin tidigare nivå och trots att skörden slog rekord för decenniet. Jordbrukets producent- och insatsprisproportionerna har ur lantbruksföretagarnas synvinkel utvecklats i en ogynnsam riktning. Insatsernas priser har stigit i klart snabbare takt än produktpriserna, särskilt hos djurgårdarna.

I denna utvärderingsrapport har betydelsen av 141-stöden för lantbruksföretagen inom AB-området undersökts utifrån MTT:s lönsamhetsbokföringsmaterial. Inom AB-området fanns 2010 allt som allt 405 gårdar med lönsamhetsbokföring vars ekonomiska storleksklass överskred gränsen på 8 000 euro för uppföljning i FADN. Utifrån dessa gårdars resultat har en viktning enligt produktionsinriktning och SO-gårdsstorleksklass gjorts av det genomsnittliga resultatet i syfte att gestalta resultaten för de motsvarande 18 570 gårdarna inom området. För att man ska få en tydlig uppfattning om betydelsen av 141-stödets betydelse har undersökningen koncentrerats till de produktionsinriktningar för vilka 141-stödet i södra Finland är relevant.

Enligt produktivitetsundersökningen har produktiviteten hos svin- och mjölkgårdarna inom AB-området stigit med i genomsnitt 2,7 och 4,5 procent per år under perioden 2000–2010. Med denna ökning och kraftiga strukturutvecklingen har lantbruksföretagarna försökt kompensera den allt svagare relationen mellan produkt- och insatspriserna. Enligt de viktade resultaten i lönsamhetsbokföringen har åkerarealen hos djurgårdarna under det senaste decenniet tilltagit med 40 procent och antalet djurenheter med 75 procent inom AB-området. Med beaktande av alla storleksklasser har 45 procent av djurgårdarna och trädgårdsföretagen inom AB-området lagt ner produktionen under perioden 2000–2011.

Inte ens en så här betydande produktivitets- och strukturutveckling har räckt till för att upprätthålla företagens ekonomiska situation. Trädgårdsföretagens och djurgårdarnas företagarinkomst eller ersättningen för företagarens arbetsinsats och eget kapital har inte ökat ens nominellt. Samtidigt har det till företagsverksamheten bundna, egna kapitalet som ofta har hämtats utanför branschen nästan fördubblats under 2000-talet, varför ersättningen för eget kapital har försvagats. Företagens skulder har tredubblats och ränteutgifterna för dem bidrar givetvis till att beskära företagarinkomsten. Företagarvinsten som beaktar samtliga produktionskostnader och således även kostnaderna för lantbruksföretagarens arbete och eget kapital har årligen varit ca -40 000 euro negativ per lantgård.

Företagarinkomsten består till ca 65–70 procent av det nationella 141-stödet och den nationella tilläggsdelen till kompensationsbidraget som är nära förknippad med stödet. År 2010 utgjorde inkomststödet enligt artikel 141 som sådant 45 procent av företagarinkomsten. Sålunda skulle till exempel avskaffandet av stödet enligt artikel 141 beskära lantbruksföretagarnas företagarinkomst med närapå hälften. Eventuella nedskärningar av stödet skulle sålunda betydligt försvaga jordbruksföretagens resultat och lönsamhet.

Utifrån produktionsinriktning sett har den kraftiga strukturutvecklingen lett till att mjölkgårdarnas totalintäkter och företagarinkomst har ökat varje år. I proportion till totalintäkterna har företagarinkomsten likväl sjunkit. De nationella 141-stöden och den nationella tilläggsdelen till kompensationsbidraget har årligen utgjort ca 30 procent av förtagarinkomsten och 141-inkomststödet ensamt ca 20 procent. Då även de kostnader beaktas som uppkommer av eget arbete och eget kapital, har företagarvinsten varit ca -35 000 euro negativ under hela granskningsperioden. Av alla mjölkgårdar inom AB-området har 60 procent lagt ner sin produktion under 2000-talet, men oavsett strukturutvecklingen och trots att gårdarna har blivit större har lönsamhetsutvecklingen inte tagit en positiv riktning, utan lönsamhetskoefficienten har stannat på 2000-talets nivå på ca 0,5–0,6.

Men i gruppen nötkreatursgårdar har totalintäkten och likaså företagarinkomsten årligen stigit på grund av den kraftiga strukturutvecklingen. Under perioden 2008-2009 har företagarinkomsten i sin helhet bestått av stödet enligt artikel 141 och kompensationsbidragets nationella tilläggsdel. Blotta andelen av inkomststödet enligt artikel 141 har under granskningsperioden varierat mellan 40 och 70 procent. Då även de kostnader beaktas som uppkommer av eget arbete och eget kapital, har företagarvinsten årligen varit ca -40 000 euro negativ. Totalintäkterna har inte räckt till för att täcka produktionskostnaderna. Lönsamhetskoefficienten har under de senaste åren varierat på nivån 0,3–0,4.

I takt med den kraftiga strukturutvecklingen har även svingårdarnas totalproduktivitet ökat. Under granskningsperioden håller inkomststödet enligt artikel 141 och kompensationsbidragets nationella tilläggsdel av totalintäkterna på att sjunka från ca 12 procent 2007 till ca 9 procent 2011. På motsvarande sätt har svingårdarnas företagarinkomst försvagats under hela granskningsperioden och hotar enligt en prognos att rasa till 5 000 euro per år 2011, vilket innebär att företagarinkomsten då helt och hållet består av stöd. Då även de kostnader beaktas som uppkommer av eget arbete och eget kapital, skulle företagarvinsten sjunka till ca -70 000 euro och produktionen följaktligen vara kraftigt förlustbringande. Lönsamhetskoefficienten skulle enligt en prognos från 2001 vara 0,06. År 2013 kommer stödet som har frikopplats från svin- och fjäderfäproduktionen sammanlagt att minska med ca 37 procent. Då kommer både företagarinkomsten och och lönsamhetskoefficienten som anger den relativa lönsamheten att sjunka till negativa värden. Av svingårdarna inom AB-området har 67 procent under 2000-talet lagt ner produktionen före 2011.

Fjäderfägårdarnas totalintäkter har ökat årligen. Resultaten varierar kraftigt från år till år delvis på grund av att antalet företag är litet. År 2008 blev företagarinkomsten negativ, medan den 2010 uppgick till ca 40 000 euro. Även då bestod företagarinkomsten till 87 procent av 141-stödet och kompensationsbidragets nationella tilläggsdel. Blotta 141-stödet utgjorde 75 procent av företagarinkomsten. Då även de kostnader beaktas som uppkommer av eget arbete och eget kapital beaktas, skulle företagarvinsten 2012 redan sjunka till ca -30 000. Nedskärningen år 2013 av det stöd som har frikopplats från svin- och fjäderfäproduktionen kommer att ytterligare beskära företagens genomsnittliga företagarinkomst med ca 30 procent jämfört med nivån 2011-2012. Lönsamhetskoefficienten skulle 2013 sjunka till ca 0,35 från 0,5 som motsvarar tidigare års prognos.

Hos växthusföretagen har företagarinkomsten i sin helhet bestått av det nationella 141-stödet. Enligt prognoserna blir det inte längre någon företagarinkomst alls under åren 2011 och 2012. Det betyder att ingen ersättning utgår för företagarens eget arbete och kapital. Även räntekostnader och en del av avskrivning-

arna blir utan täckning. Företagarvinsten skulle sjunka till -80 000 euro. Lönsamhetskoefficienten skulle bli negativ, -0,4.

Enligt undersökningen har de investeringsbidragen förbättrat företagens soliditet och betalningsförmåga. Utan investeringsbidrag skulle skuldsaldot inom de granskade produktionsinriktningarna vara ca 10 procent högre. På samma gång skulle de extra utgifter som orsakas av ett högre skuldsaldo ha reducerat det finansieringsresultat som blir kvar för amortering av skulder. På grund av detta skulle återbetalningstiden för det främmande kapitalet vara ca fem år längre än den nuvarande. Med hjälp av investeringsbidragen har man på detta sätt kännbart upprätthållit lantbruksföretagens möjligheter till strukturutveckling och i takt med den till förbättring av lönsamhet och produktivitet.

4. 141-stödets betydelse för jordbruksproduktionen och den regionala ekonomin inom AB-stödområdet

4.1. 141-inkomststödets betydelse som bevarare av jordbrukets produktionsvolymer

Om 141-inkomststöd inte alls hade betalats 2008-2011 och inte betalades 2012-2020, skulle mjölkproduktionen inom AB-området enligt MTT:s modellanalyser minska med mer än hälften av volymen 2010 (472 milj. liter) eller till en nivå av 220 liter år 2020. Detta skulle även vara en minskning av hela landets mjölkproduktion, eftersom produktionen inom AB-området inte nämnvärt kompenseras av en större produktion inom C-området. Ett bortfall av 141-stödet skulle inte enligt resultaten helt och hållet avskaffa dikoproduktionen inom AB-områdena, men antalet dikor skulle innan 2020 minska med en fjärdedel av nivån år 2007. Till följd av detta skulle mjölkproduktionen inom AB-området minska med ca 45 procent och nötköttsproduktionen med ca 40 procent senast år 2020. Resultaten av 141-stödens betydelse för jordbrukets totalproduktion inom AB-området baserar sig på den regionala sektormodellen DREMFIA som har utarbetats vid MTT och som beskriver jordbruket i Finland.

Dessa resultat betonar betydelsen av produktionsbundet stöd för mjölk- och nötköttsproduktionen. På mjölk- och nötgårdar kompletterar produktionsbundna inkomststöd och investeringsstöd varandra och utgör till och med en förutsättning för varandra på grund av höga och varierande produktionskostnader. Exempelvis skulle ett bortfall av det produktionsbundna stödet enligt erhållna resultat leda till en försvagning av täckningsbidrag och investeringars lönsamhet. Inte ens ett högt investeringsstöd kunde då upprätthålla produktionen eller förbättra produktionsstrukturen och produktiviteten, om en djurgård inte producerar täckning för investerat kapital. Enligt undersökningsresultaten skulle till exempel investeringarna i stora produktionsenheter med fler än 50 kor minska utan produktionsbundet 141-stöd för mjölk, varvid även strukturutvecklingen till denna del skulle fördröjas och produktionen sjunka. Däremot har de nationella stöden för svin- och fjäderfäproduktion inom såväl AB- som C-områden redan nästan helt och hållet frikopplats från produktionen, trots att ett villkor för 141-stöd för svin och fjäderfä är att förbli djurgård. Enligt resultaten skulle avskaffandet av 141-inkomststödet från svin- och fjäderfäproduktionen leda till en minskning med drygt 10 procent av produktionen inom AB-områdena.

Om mjölk- och köttproduktionen minskar till följd av 141-stöden 2008-2020, skulle också efterfrågan på fodersäd bli klart lägre. Detta skulle enligt modellanalyserna leda till en minskning med upp till 170–180 000 hektar i spannmålsproduktion och 50 000 hektar i vallareal i södra Finland. Denna areal på drygt 200 000 hektar skulle till största delen läggas i träda och åkrar med lägst produktion, ca 100 000 hektar, skulle bli helt och hållet obrukade.

Inkomststödet som baserar sig på artikel 141 har stor betydelse för produktionen och företagarinkomsten inom AB-områdena. Då produktionen minskar till följd av att 141-stöden bortfaller 2008–2020, minskar företagarinkomsten i enlighet resultaten med ett större belopp än det som bortfaller tillsammans med 141-stödet. Företagarinkomstens bortfall skulle i enlighet med resultaten inom AB-området i jämförelse med baskalkylen minska med ca 95 milj. euro, vilket innebär en minskning med 36 procent.

4.2. Produktionsbundet stöd versus stöd som frikopplats från produktionen

I och med det stödsystem om vilket beslut fattades 2007 (Kommissionens beslut K(2008696) förändrades 141-inkomststödens struktur inom svin- och fjäderfäsektorerna. Stöden (141-) för svin- och fjäderfäproduktion har sedan 2009 betalats som gårdsspecifikt stöd frikopplat från produktionen, och baserar sig i huvudsak på gårdens produktionsmängder 2007. Stöd för idisslare har däremot betalats i sin nuvarande produktionsbundna form under hela stödperioden. Resultaten från denna undersökning pekar på den stora betydelsen av produktionsbundet stöd för mjölk- och nötköttsproduktionen. Produktionen inom dessa produktionsinriktningar har oavsett stöden kontinuerligt minskat inom AB-området, medan svin- och fjäderfäproduktionen tidvis även har ökat.

Då stödet frikopplas från produktionen försvagas uppmuntran till produktion och överlåts produktionsvolymen i större utsträckning till marknaden och marknadspartnernas strategiska beslut. Teoretiskt sett leder beslutet att frikoppla stödet från produktionen på en konkurrensstyrd marknad till en produktion som bättre motsvarar efterfrågan och till en effektivare användning av produktionsresurserna. Att frikoppla stödet gör det möjligt att avsluta en jämförelsevis mindre lönsam produktion utan att stödet går förlorat. Detta höjer priserna på den inhemska marknaden i den mån det inom en gemensam marknad av EU:s storleksordning är möjligt (det förekommer faktiskt prisskillnader), och höjer jordbruksinkomsten, om det frånkopplade stödets belopp inte minskar. Även insatsanvändningen motsvarar i teorin på ett mer flexibelt sätt variationerna i insatsernas och produkternas prisrelationer utan produktionsstöd, vilket förbättrar den ekonomiska effektiviteten. Om det marknadspris man får täcker de varierande kostnaderna för produktionen och en tillräckligt stor del av de fasta produktionskostnaderna, ligger det i odlarnas intresse att stödet frikopplas från produktionen.

Om exempelvis mjölkprodukternas och nötköttets marknadssituation förblir stark, m.a.o. efterfrågan förblir stark i förhållande till utbudet, har det mindre betydelse om det nationella stödet frikopplas från produktionen än om marknadssituationen försvagas och produktpriserna sjunker. I en svag marknadssituation har det produktionsbundna nationella stödet synnerligen stor inverkan på täckningen per djur samt på investeringarnas och hela produktionens lönsamhet. Enligt MTT:s beräkningar skulle det leda till minskad djurgårdsproduktion i södra Finland att frikoppla det nationella stödet från produktionen. I synnerhet skulle mjölk- och nötköttsproduktionen minska. Det produktionsbundna nationella stödet till södra Finlands nötboskapsuppfödning har bidragit till att investeringar i stora djurenheter har varit lönsamma.

Åkerarealstöd som betalas nästan helt och hållet oberoende av djurgårdsproduktion uppmuntrar inte till djurproduktion, utan kan rentav bidra till att man avstår från djurproduktion, om den blir mindre lönsam i och med att priset på spannmål går upp. Endast LFA- bidrag och miljöstöd betalas med förhöjningar till djurgårdar för upprätthållande av ett tillräckligt stort antal djur (0.4 ey/ha), men inte ens dessa kan betalas som täckning för en djurplats i utbyggnadsinvesteringar som är centrala för produktionens fortbestånd och omfattning. Inkomststöd som betalas för åkerareal och som påverkar inkomsterna för odlare inom alla produktionsinriktningar, bör inte jämställas med det produktionsbundna inkomststöd som betalas till djurgårdar och som påverkar täckning och investeringsavkastning av en djurplats. Enligt undersökningsresultaten skulle till exempel investeringarna i stora produktionsenheter med fler än 50 kor minska utan produktionsbundet 141-stöd för mjölk, varvid även strukturutvecklingen till denna del skulle fördröjas och produktionen sjunka.

De 141-inkomststöd som betalas för svin och fjäderfä per djurenhet frikopplades inom AB-området från produktionen år 2009. Detta har tillsammans med den försvagade prisrelationen mellan kött och spannmål beskurit en del av den ökade produktionen av svinkött. Svinköttsproduktionen har redan minskat med 15 procent från rekordnivån 2008 till år 2011. Utvecklingen motsvarar MTT:s beräkning från 2008 enligt vilken en frikoppling av det nationella stödet tillsammans med höga spannmålspriser småningom leder till en produktionsminskning med 20 procent, dvs. till en produktion som på sin höjd motsvarar den inhemska efterfrågan (Lehtonen & Niemi 2008). Enligt resultaten i denna undersökning har svingårdarnas ekonomiska situation under de senaste åren försvagats till den grad att ett bortfall av 141-stöden skulle innebära att Finland skulle bli nettoimportör av svinkött. Produktionen skulle sjunka till 155 milj. kg, vilket motsvarar en minskning med 28 procent av produktionen 2007 och med 18 procent av svinköttskonsumtionen 2011. Produktionens utveckling utan 141-stöd beror likväl även på marknadsutvecklingen. Resultatet som pekar på en betydande minskning av svinköttsproduktionen redan i utgångsscenariot, och då 141-stödet avskaffas, baserar sig delvis på att prisrelationen mellan kött och spannmål försvagas, vilket lockar svingårdar att övergå till enbart spannmålsodling. På motsvarande sätt skulle stigande priser på svinkött i relation till fodersäd minska stödens betydelse.

Trots att de nationella 141-stöden för svin- och fjäderfäproduktion har minskat och till största delen frikopplats från produktionen har de fortfarande en viss betydelse för gårdarnas ekonomi och investeringar, även om den är mindre än förut. I varje fall förefaller det som om Finland inte i sin svinköttsproduktion hade sådana kostnadslättnader att en svinköttsproduktion som överskrider konsumtionen skulle kunna fortgå en längre tid. På så sätt minskar produktionen oavsett hur 141-stödet utvecklas, och minskningen accelererar i samma mån som 141-inkomststödet minskar.

Eftersom stöden för svinköttsproduktion har frikopplats från produktionen har marknadsprisernas utveckling och investeringsstöden allt större betydelse då det gäller att fatta investeringsbeslut. En eventuell nedskärning av investeringsstödet skulle visserligen inte omedelbart sänka svinköttsproduktionen mer än den pågående utvecklingen gör det, eftersom ett stort antal djurplatser för svinuppfödning har inrättats och platserna länge kommer att vara i bruk. Likväl kommer fortbeståndet av produktionsvolymen av svinkött på medellång sikt, m.a.o. fram till 2020 att utgöra ett villkor för betalning av investeringsstöd, eftersom fler platser småningom måste börja byggas för att motsvara nedläggningen av produktionen.

Uppmuntran till produktion har minskat även på grund av att stödet för fjäderfäproduktion har frikopplats och delvis på grund av det höga priset på spannmål. Enligt utförda modelleringar kommer produktionens lönsamhet att sjunka till den grad att en tilltagande konsumtion av fjäderfäkött i första hand kan leda till större import och inte till större produktion i Finland. Även en liten minskning av produktionen är möjlig, om prisrelationen mellan kött och foder håller sig på svag nivå. Hittills har producentpriserna på fjäderfäkött enligt en EU-jämförelse varit mycket höga och stabila samtidigt som den inhemska produktionen med lätthet har hållit jämna steg med den inhemska efterfrågan. Under de förestående åren kommer utmaningarna att bli allt större. Fjäderfäköttet har likväl som helhet en starkare ställning än svinköttsproduktionen, då den inhemska efterfrågan beräknas fortsätta att växa och köttet produceras i mängder som motsvarar efterfrågan och i större enheter på färre än 150 gårdar.

1 Introduction

The agricultural support scheme applicable in Finland is founded on the support payments under the common agricultural policy (CAP) of the European Union (EU), i.e. the direct payments funded in full by the EU and the EU co-funded natural handicap payments (LFA) and agri-environmental support. These are complemented by national aids. The purpose of the entity comprised of the national aids is to ensure the operating conditions for Finnish agriculture in the different parts of the country and in different production sectors. The most significant type of aid in support areas A and B (area AB) in southern Finland is the national aid for southern Finland, paid under Article 141 of the Accession Treaty of Finland. Finland has used the opportunity set down in Article 141 as the grounds for the national aid for southern Finland as from the year 1997.

Article 141 has allowed the payment of national aid to deal with the difficulties which arose as a result of the accession of Finland to the EU in 1995. The Article gives no definition of "serious difficulties" nor does it limit the period when this aid scheme is applicable in any way. This means that the authorisation to apply this aid exists as long as the conditions for the aid are fulfilled. Whether the conditions for the aid continue to exist is decided in negotiations between Finland and the European Commission.

In 2011 a total of 83.9 million euros was paid in area AB as national aid for southern Finland. In addition to this 43.5 million euros as national top-up to the natural handicap payment (LFA) and certain other aids were paid to agriculture in area AB. The share of national aid is considerable on farms in area AB, representing the average of about 19% of the total return calculated as the sum of market return and support payments during the period 2000–2006. In 2008–2013 the share of support has decreased significantly as the amounts of support payments have decreased while the returns from the market have grown.

Aids negotiated under Article 141 are decided for a fixed time period: the first decision covered the years 1997–1999 (97/428/EC, 97/449/EC), the second the years 2000–2003 (2000/167/EY), the third the years 2004–2007 [Commission Decision of 16 March 2004, C(2004)475] and the fourth the years 2008–2013 [Commission Decision of 27 February 2008, C (2008)696]. For each decision Finland has conducted thorough negotiations with the Commission on whether the conditions for the application of the aid scheme continue to exist. Based on the negotiations completed in November 2007 Finland was authorised to grant both national direct aid and raised investment aid to livestock production and horticulture in southern Finland until the end of 2013. The maximum amounts of aid under Article 141 fall considerably in the last two years of the period, with the greatest cuts targeted to pig and poultry farms. The maximum total amount payable as income aid in 2013 is 62.9 million euros.

1.1 Background and purpose of the evaluation

The purpose of the evaluation is to examine the implementation and impacts of the measures included in the aid scheme agreed on the basis of Article 141 of the Accession Treaty of Finland in 2007 (Commission Decision C(2008)696) as regards the integration of agriculture in southern Finland to the common agricultural policy of the European Union, with particular focus on the impacts of the aids. Because the decision on aid under Article 141 of February 2008 led to certain changes in the structure and types of national aid for southern Finland, it is also evaluated how the new structure and types of aid impact on the integration of agriculture in southern Finland to the CAP.

In this evaluation full integration of farmers in southern Finland to the CAP means that the economic conditions for operation and possibilities to develop the structure and, though this, for improving productivity in area AB are to be maintained on the common EU market. Maintaining the economic conditions for operation, possibilities for structural development and better productivity on the EU market means that the reduction or abolition of aids based on Commission Decision C(2008)696 should not place the conditions for profitable production at risk on the farms in area AB.

The evaluation is conducted using a comparative approach as regards factors that are relevant in terms of the development of production and production structure in area AB, development of incomes and profita-

bility and, more generally, the socioeconomic impacts and impacts on regional economies. Attention is drawn to productivity development of agriculture, production efficiency and changes in the agricultural production practices. The socioeconomic role of agriculture in southern Finland is described, for example, through the production volumes in the area and impacts of agriculture on the regional economy. The evaluation also presents an alternative scenario where no aid under Article 141 would have been paid.

1.2 Object of evaluation: Decision on aid under Article 141 for 2008–2013

Article 141 of the Accession Treaty of Finland to the European Union (1994) allows Finland to grant, subject to certain conditions, national aid to producers to facilitate their integration to the CAP. Article 141 runs as follows: "Where there are serious difficulties resulting from accession which remain after full utilization of the provisions of Articles 138, 139, 140 and 142, and of the other measures resulting from the rules existing in the Community, the Commission may authorize Finland and Norway to grant national aids to producers so as to facilitate their full integration into the common agricultural policy."

Compared to the previous decisions on the aid, the aid period approved by the Commission Decision of 27 February 2008 was longer than earlier as it comprises the years 2008–2013. The aid scheme includes income aid, which contributes to securing the conditions for profitable agriculture, and investment aid, which promotes structural development. Based on the decision, income aid under Article 141 may be paid to livestock production, greenhouse production and storage of horticulture products, certain arable crops and the area eligible for the natural handicap payment (LFA) on horticulture farms, with the LFA surface area limited to that in 2007.

In 2008 the total amount of income aid was 93.9 million euros, which is about the same as in 2007 (94 million euros). In 2008–2011 the aid paid under Article 141 fell by almost 4% a year. In the last two years of the period the amount of aid decreases even more to a total of 75.2 million euros in 2012 and 62.9 million euros in 2013. The amount of aid under Article 141 paid in 2013 is about 67% of the level of aid in 2008.

The structure of the national aid for southern Finland also changed by the decision of February 2008: as from 2008 part of the aid for livestock production was paid as aid per hectare. From 2009 the aid for pig and poultry farms was paid as coupled, farm-specific aid, which as a rule was based on the production volumes of farms in 2007. Instead, the aid for ruminants is paid as coupled aid all through the current period.

In 2009 the compensation for structural change was introduced as a new type of aid for pig and poultry husbandry for farms that quit production. A condition for the aid was that the applicant committed to permanently giving up the reference quantity which entitles to the aid for pig and poultry husbandry after the period during which the farm is eligible for the compensation for structural change. The compensation for structure change was paid according to the reference quantity of 2007 and the maximum compensation per farm was 20 000 euros.

Structural aid is an important element of the aid scheme under Article 141. To be allowed to grant the exceptional type of income aid Finland had to grant raised investment aid to sectors that received income aid under Article 141 as well as utilise the opportunity to raise the amount of start-up aid for young farmers. In pig and poultry husbandry the obligation to raise the amount of aid was abolished when Finland was obligated to pay the income aid for these sectors as decoupled payments. The amount of aid for these sectors was set at 35–45 per cent. Authorisation from the Commission was required if Finland wanted to grant investment aid that would increase the production capacity in these sectors.

In 2009 Finland requested and received authorisation from the Commission to support investments that increased the production capacity in the pig, broiler and turkey sectors. Based on the authorisation the quota for the enlargement for 2010–2011 was set at 33,000 modified animal places (when calculating the additional animal places one animal place equals a place for 1 sow, 7 fattening pigs, 168 broilers or 35 turkeys). Applications were submitted for about two-thirds of the quota. The same quota of 33,000 modified animal places was also set for the same sectors for 2012, and this will also be applicable in 2013. In the first round of application for investment aid concerning the funds for 2012 applications for 687 modified animal places were submitted. Finland did not apply for the authorisation to grant enlargement aid for

laying hens and broiler production. Because of the market situation no investment aid was granted for laying hens and broiler production in 2012.

Chart 1.1. National aid for southern Finland under Article 141, decision for the period 2008–2013.

Period of the decision on aid under Article 141	Principles of aid under Article 141	Main measures	Funding
Commission Decision of February for the period 2008–2013	Finland may grant from the national budget funds both direct aid and raised investment aid to livestock production, certain arable crops and horticulture in southern Finland until the end of 2013 to secure the operating conditions and profitable production in agriculture and a reasonable income level for the farming population.	• Income aid under Article 141 may be paid to livestock production, certain arable crops, greenhouse production and storage of horticulture products • As a new types of aid, aid per hectare for livestock farms and aid for special crops in southern Finland • From 2008 part of the aid for livestock production as aid per hectare for livestock farms. • From 2009 aid for pig and poultry husbandry as decoupled payments • Raised investment aid for certain production sectors • Investment aid and start-up aid for young farmers continue • Raised start-up aid for young farmers • Aid for the development plan of a farm	• Decreases during the period 2008–2013 from 93.9 million euros to a total of 62.93 million in 2013 (see Annex 1)

For the most part the aid under Article 141 is applicable for the same purposes as set out in the earlier decisions for the years 1997–2007. In 2008 two new types of aid were introduced: aid per hectare for livestock farms and aid for special crops in southern Finland, which is payable on the grounds of the cultivation area of vegetable production in the open and starch potato. The compensation for structural change in pig and poultry sectors included in the Commission Decision allowed to pay decoupled aid for two years from the beginning of the aid period without the need for the farm to fulfil the criteria for livestock farms relating to the national top-up to the natural handicap payment (LFA). The compensation was paid for two years, after which the reference quantity of the farm was abolished and the payment of the aid ended.

The Commission Decision on aid under Article 141 for 2008–2013 C(2008)696 obligates Finland to draw up a report on the application of the aid scheme, which was to be submitted to the Commission by 30 June 2012. The report concerning the previous period was submitted to the Commission in 2006.

1.2.1 Description of area AB in southern Finland

The special characteristics that influence agricultural activities in Finland include our geographical location and the consequent natural handicap due to the northern climate conditions, as well as peripheral location relative to the core market areas in Europe. Further issues where the conditions for agriculture in Finland differ from those in the other EU countries include the structure of the sector, which is dominated by small farms and family farming, and long distance due to extensive forest and water areas (MMM 2007). Because of the northern location only plants with a short growing period can be cultivated in Finland, and the short growing season means that the plants do not yield as much as they do in more southern conditions.

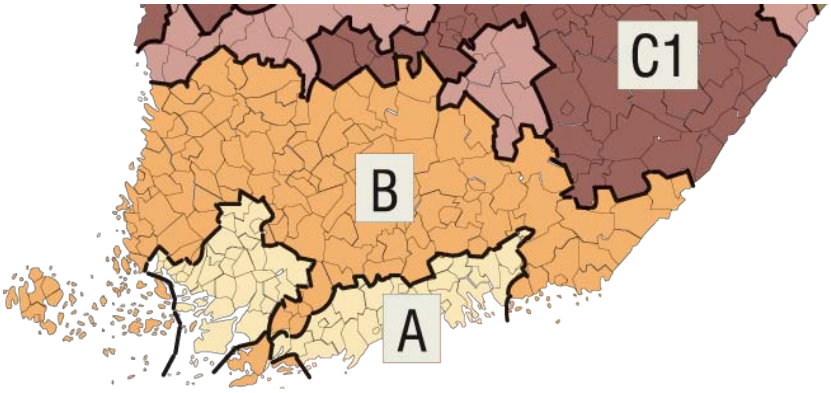


Figure 1.1. Area AB in southern Finland on the map.

Finland is located between the 60th and 70th parallels of latitude. The agricultural area in southern Finland lies between the 60t and 62nd parallels. In southern Finland the thermal growing season with the average daily temperature above +5° C is 5–6 months starts towards the end of April and extends until about mid-October. The average growing season in area AB is 160–180 days. The average effective temperature sum is 1250–1400 °C. Effective temperature sum is the total sum of the shares exceeding five degrees of the average temperatures of all days during the growing season. Precipitation during the growing season is 350–450 mm (Finnish Meteorological Institute 2012).

The natural conditions prevailing in the north increase the production costs. Work in the field in the spring and autumn must be done in a very short time and almost all plant species are sown in the spring, which means major peaks in the workload. Almost all of the cereal must be dried before storage. On clay soil common in southern Finland the spring works must be done very quickly so as not to lose the spring humidity. In the autumn harvesting must be done during the often quite few days when it does not rain. All this requires efficient machine capacity and increases the costs (MMM 2007b).

As regards the typology of regions most of the area AB in southern Finland is urban area, urban-adjacent rural area or rural heartland area. In urban-adjacent rural areas in southern and western Finland the conditions for agricultural activities are more diverse and favourable than in the rest of the country, and because of the shorter distances the off-farm employment opportunities are also better. The rural heartland areas in southern Finland are strong primary production regions with concentrations of specialised types of production such as pig and poultry husbandry and greenhouse production (Niemi & Ahlstedt 2011).

Åland Islands

The Åland Islands constitute an autonomous region of the republic of Finland. The total surface area of the Åland Islands is 6 739 km2, of which 22% is land and 78% is water. The region is comprised of as many as 6 757 islands and islets. The largest island, Mainland Åland, represents about 70% of the total land area. In 2011 the population of the Åland Islands totalled about 28,000 (Statistics Finland), and about 90% of the population live in Mainland Åland. In 2009 the share of agriculture in total output accounted for about 1% of the value added (Statistics Finland). The Government of Åland sees to the administration of the Rural Development Programme of the Åland Islands.

Besides the climate, farm structure and markets agricultural production on the Åland Islands is to a great extent influenced by the local food industry and special product markets in Finland, which is why the cultivation of special products is more common on the Åland Islands than in Finland. The share of milk in the total return on agriculture in the region is also considerable (Åland 2007). Relative to the size of the region horticultural production in the open is a significant sector, with a major share of apple production in the whole of Finland located on the Åland Islands (Information Centre of the Ministry of Agriculture and Forestry Tike). Among the disadvantages of agriculture on the Åland Islands and the outer archipelago is the poor market access: ships and ferries are needed for the products to reach the markets.

1.3 Agricultural support schemes applicable in area AB

1.3.1 EU support for agriculture in Finland

In 2011 the support under the common agricultural policy to agriculture in area AB totalled about 625 million euros. This consisted of the CAP income support (274.3 million), natural handicap payments for less-favoured areas (LFA) (189.6 million) and environmental support (161.1 million). These are funded either by the EU alone or co-financed by the EU and Finland.

CAP income support (referred to as direct payments below) are an integral element of the common market organisations and they are funded in full from the EU budget. The EU contributes a little more than a quarter of the LFA payments and environmental support under the Rural Development Programme (28% in 2011). The rest is paid from national funds.

Besides the EU support, about 140 million euros was paid as national aid to farms in area AB. The national aid scheme comprises the national aid for southern Finland (84 million), national top-ups to LFA payments (43.5 million), and certain other national aids.

Finland has been divided into seven support areas for the allocation of the payments. The national aid for southern Finland under Article 141, also called the aid for serious difficulties, is paid in support areas A and B. CAP support, environmental support, LFA payments and the national top-ups to this are paid in the whole country.

Direct payments

Most of the so-called CAP support financed in full by the EU in area AB is paid through the single payment scheme adopted in 2006. In Finland the single payment scheme is implemented as the so-called hybrid model. Former CAP payments were converted into payment entitlements, which consist of a regional flat-rate payment and farm-specific top-ups.

Direct payments have two main components: decoupled single payments and payments which continue to be coupled to the production. In Finland about 90% of the direct payments were decoupled from the production in 2006. The payments for arable crops were decoupled almost completely.

According to the cross-compliance conditions included in the direct payments, the arable lands must be kept in good farming condition and minimum requirements for animal welfare and state of the environment must be met. Based on a national decision, any area set aside in Finland as managed, uncultivated arable area must be covered with grass in order to be eligible.

Under the single payment scheme coupled support is still paid for suckler cows, male bovines and ewes, certain protein and oilseed crops and starch potato. By virtue of Article 68 of the Single Payment Regulation ten per cent of all CAP income support can be targeted to sectors affected by specific disadvantages. Finland has been authorised to pay the whole 10% as coupled support. Under Article 68 up to 9.5 million euros may be paid as dairy cow premiums in area AB. The maximum aid per livestock unit is 150 euros. Aid for the beef sector (bulls, steers, suckler cows and suckler cow heifers) in the whole country may be paid up to 36.7 million euros, of which the maximum share of area AB is 11.7 million euros.

Natural handicap payment (LFA)

Certain rural regions in the EU have been defined as less favoured areas (LFA). The purpose of LFA payments is to ensure the continuation of farming in these regions and keep the rural areas populated. In Finland LFA support is paid for the whole cultivated area of about 2.16 million ha. In 2011 the LFA payments in area AB totalled 189.6 million euros. The payment is 150 €/ha in area A and 200 €/ha in area B.

Environmental support

Agri-environmental support introduced in 1995 compensates for income losses resulting from the reduction in the production and increased costs as farmers commit to undertake measures aimed to reduce environmental loading caused by agriculture.

The Rural Development Programme for Mainland Finland 2007–2013 was approved by the European Commission in 2007. Rural development is funded from the European Agricultural Fund for Rural Development (EAFRD) and from national sources. The total public funding for the seven-year programming period is about 6.6 billion euros, of which a third comes from the EU. The programme has four axes, of which Axis 2 includes the agri-environment and natural handicap payments, non-productive investments and farm animal welfare payments. The funding for Axis 2 totals about 2.3 billion euros. The share of environmental support in the total amount of support payments has been growing. In 2011 a total of 372 million euros[1] was paid as environmental support, of which the EU contributed 107 million and the national share was 265 million. Environmental support paid to area AB totalled 161.1 million euros in 2011.

The support scheme is comprised of the basic and additional measures and contracts concerning special measures. The main goal is to reduce the load on waters. Besides this, the aim is to restrict emissions into the air, mitigate the risks due to the use of pesticides and protect and manage rural landscapes and biodiversity. The measures of the third agri-environment scheme introduced in 2007 are very similar to those in the two previous programmes. The scheme consists of basic, additional and special measures. There are certain changes from the previous programming period concerning e.g. the reference state from which the costs and income losses to be compensated for are calculated, minimum requirements for the use of pesticides and fertilisers, commitment periods and target beneficiary groups. Farms in support areas A and B must undertake the basic measures plus one to four additional measures. The most popular additional measures have been more accurate nitrogen fertilisation of arable crops, different forms of plant cover on arable land in winter and calculation of nutrient balances.

1.3.2 National aid

The aim of the national aids, which comprise the national aid for southern Finland, national top-ups to LFA payments and certain other types of aid, is to ensure the preconditions for agriculture in southern Finland in different production sectors. The principles to be applied in determining the level and regional distribution of national aid were agreed in the membership negotiations.

National aid for southern Finland

The national aid for southern Finland, i.e. support areas A and B, is based on Article 141 of the Accession Treaty. This article has allowed the payment of aid due to serious difficulties resulting from the accession to the EU, but it does not define the concept of serious difficulties in any more detail or limit the duration of the measure. Finland has interpreted the article so that it gives the authorisation to the payment of the aid as long as the conditions for implementing the scheme exist, while the Commission has seen it as a temporary solution.

Finland must negotiate with the Commission on the application of the aid based on Article 141 for each period. According to the outcome of the negotiations reached in November 2007, Finland may grant both national direct aid and raised investment aid for livestock production and horticulture in southern Finland until the end of 2013.

In 2011 the aid under Article 141 to southern Finland totalled 83.9 million euros, which is 3.7% less than the 87.0 million paid in 2009. In the last two years of the period the total amount of aid under Article 141 is to be reduced quite radically, with the greatest cuts in the aid for pig and poultry farms. In 2013 the total amount of this aid will be 62.9 million euros (Table 1.1).

[1] Includes animal welfare payments and aid for non-productive investments.

Table 1.1. Maximum amounts of aid under Article 141 for southern Finland (million euros) in 2007–2013.

	2007	2008	2009	2010	2011	2012	2013
Ruminants	27,03	24,32	24,20	24,08	23,96	23,84	22,72
Pigs and poultry	47,69	40,72	37,87	35,22	32,75	25,22	16,00
Horticulture	19,28	18,17	17,63	17,10	16,59	15,59	13,66
Aid based on the arable area		10,69	10,66	10,63	10,60	10,58	10,55
Aid per hectare for livestock farms		*9,69*	*9,69*	*9,69*	*9,69*	*9,69*	*9,69*
Aid for vegetables in the open and starch potato		*1,00*	*0,97*	*0,94*	*0,91*	*0,89*	*0,86*
TOTAL	94,00	93,90	90,36	87,03	83,90	75,23	62,93

The structure of income aid under Article 141 has also changed. From 2009 onwards decoupled farm payments have been applied in pig and poultry sectors, mainly according to production quantities of 2007. Instead, the aid for ruminants will continue to be coupled to the production all through the current aid period.

Investment aid and start-up aid for young farmers are important elements of the aid under Article 141. Finland is obligated to pay investment aid for sectors which are eligible for income aid under Article 141. Thus the application of investment aid is a condition for the payment of income aid.

National top-up to the LFA payments

National top-ups to LFA payments have been paid in the whole country since 2005 based on a tentative agreement reached in the negotiations between Finland and the Commission in 2003. The basic top-up paid for the arable area may not exceed 20 €/ha in areas A, B and C1 and 25 €/ha in areas C2–C4. A raise for livestock not exceeding 80 €/ha is paid for the arable area of livestock farms. In 2011 top-ups were paid almost fully up to the maximum according to the hectares. The total of the co-financed LFA payments and the national top-ups may not exceed the average of 250 €/ha. In 2011 a total of 43.5 million euros was paid as top-ups to the LFA payments in area AB.

1.3.3 Structural support for agriculture

Structural support for agriculture in southern Finland under Article 141 of the Accession Treaty comprises the investment aid under Commission Decision of 2008 and setting-up aid for young farmers. In the current aid period Finland is obligated to grant investment aid at a level specified in the decision to production sectors which are eligible for income aid under Article 141. The aid for the investments in buildings for dairy and beef cattle, sheep and goats is 70% of the eligible costs for young farmers and 60% of the eligible costs for other farmers. The investment aid for horse husbandry, greenhouses and horticultural products eligible for the storage aid is 55–65% of the costs. After the decoupling of the income aid from the production in pig and poultry husbandry, aid for the building investments had to be granted to cover 35–45% of the eligible costs. In these cases 20% of the aid has been granted as interest-rate subsidy and the rest has been paid in the form of a subsidy.

Investment aid

Investment aid promotes the growth in farm size by reducing the investment costs. Investment aid may be granted as subsidised interest-rates, subsidies and state guarantees. In 2011 interest-rate subsidy loans granted in the whole country totalled 204.4 million euros. In the case of subsidies the application of co-financed aid has increased over the current period. In 2012 co-financed subsidies are granted for building investments in dairy and beef sectors, pig and poultry husbandry and greenhouses as well as start-up of young farmers. The aid included in all interest-rate subsidy loans and subsidies for investments other than those listed above are paid fully from national funds. In 2011 the amount granted as subsidies under structural support totalled 77.3 million euros. Co-financing was applicable in about 73% of these investments.

Start-up aid for young farmers supports the transfer of farms to the next generation. In 2011 aid was granted for 535 farm transfers in the whole of Finland. As the structural change has progressed, the numbers of farm transfers have been decreasing in recent years (845 in 2006, 644 in 2008 and 542 in 2010).

1.4 Data, indicators and methods used in the evaluation

The evaluation is focused, in particular, on the structural and economic development of agriculture and the role of income aid as a condition for profitable production and structural development. Profitability bookkeeping / FADN -data of Agrifood Research Finland MTT and data from the Information Centre of the Ministry of Agriculture and Forestry (Tike) were used for the analysis of the economic and structural status of agriculture and horticulture in area AB. The analysis systems of the MTT's EconomyDoctor service were utilised in the analysis (www.mtt.fi/economydoctor).

The evaluation is made using a comparative approach to describe and analyse the economic and structural development and the methods of business economics (financial analysis) for the description of the economic situation of agriculture in the area.

Data

The data on cultivation areas and livestock numbers by individual products and the extent and volume of the production by region are from the Tike.

The numbers of farms by production sectors and economic size classes are based on classifications made using the above basic data at the MTT.

The descriptions of the unit cost, result, productivity and profitability development of Finnish agriculture are based on the MTT's Profitability bookkeeping data, with the variables compiled in accordance with the principles of the EU's Farm Accountancy Data Network FADN. Information on all types of support to farms is based on data from the Tike and the Finnish Agency for Rural Affairs.

Comparisons with the other EU countries have been made using data from the EU's Farm Structure Survey (FFS), FADN and the statistical office of the European Union Eurostat.

The study of the trends in the prices of agriculture is based on the Tike's price statistics and producer and input prices indices and consumer price index of the Statistics Finland.

Calculation methods

The analysis methods used in the valuation include forecast and simulation models of the results and profitability of individual farms, the regional sectoral model for Finnish agriculture DREMFIA and the output model of the input-output method constructed for the impacts on regional economies.

The study of the economy of farms and the economic impacts of the national aid is based on the results of the MTT's FADN/bookkeeping farms which have been weighted to correspond to the results of farms in area AB with standard output of more than 8 000 euros.

The result forecasts are based on the forecast system of the MTT's profitability bookkeeping where the forecasts are calculated by individual farms. The system takes account of the price trends of about 100 products and 100 inputs, changes in support schemes and changes in the volumes of the main products.

The productivity results are based on the productivity calculation system of the profitability bookkeeping. The unit costs are based on the unit cost calculation system of the profitability bookkeeping.

The classification of the bookkeeping farms and, for structural analyses, all farms by production sector and economic size is based on the MTT's typology software which, in order to facilitate the comparison of the development for all years, applies the MTT's new standard output-based software for the classification by production sector and economic size.

The calculation of the standard outputs by individual products for the whole period is based on the MTT's standard output calculation system used to calculate the official standard outputs of Finland by individual products, which the MTT also delivers to the Eurostat. In the EU the standard output based classification method was introduced in the accounting year 2010.

The generalisation of all results is based on the weighting system of the MTT's EconomyDoctor analysis system, where the weighting takes place according to the classification by production type and economic size given by the standard outputs and the selected regional division. The present study mainly uses the division by support areas, which is why the weighting coefficients and the weighting have also been calculated based on the support areas instead of the regional division used for the EU-FADN system. For calculating the weighting coefficients all Finnish farms are classified based on the standard output into production type and economic size classes using the typology software of the MTT's profitability bookkeeping.

For generalisation, the results of the profitability bookkeeping farms for the years covered by the forecast have also been weighted. The forecasts do not reflect the farm structure of the last actual accounting year. Instead, the forecast system for structural development of the MTT's profitability bookkeeping system produces forecasts for the development of the farm structure by production type and economic size class for each support area. The weighting coefficients calculated for each bookkeeping farm are based on this farm structure forecast. As the number of the smallest farms is decreasing in the forecast, smaller bookkeeping farms receive lower weighting coefficients and larger farms receive higher ones for the years covered by the forecast. This means that the improvement in the result and profitability caused by structural development is already duly taken into account in the economic forecasts.

Model-based analysis

The regional sector model for Finnish agriculture DREMFIA developed at the MTT is used to analyse the impacts of the CAP and national agricultural policy measures on the agricultural production volumes and agricultural income in area AB in southern Finland. The DREMFIA sector model comprises the main production sectors of Finnish agriculture and their foreign trade, with 18 different production regions and a detailed description of support policy (Lehtonen 2001, 2004). The sector model describes the agricultural markets and their behaviour using various kinds of price and support scenarios. Changes in the product and input prices influence the feeding of animals, output levels and use of arable land, which means that adjustments to the changes in relative prices take place within the agriculture sector.

The output model of the input-output method is used to study the backward and forward linkages of agriculture with the other sectors. The analyses comprise studies based on output, added value and employment.

Indicators

The development of the number of farms and farm structure in area AB in southern Finland is studied by production sector and economic size class, as well as on the basis of utilised agricultural area (UAA) and number of animals (livestock units, LU). Structural development in the relevant support area is studied on the basis of cultivation areas and livestock numbers as well as production volumes.

As a rule the economic analysis is conducted using the concepts of the FADN system, but national concepts are also used in cases where the FADN does not offer suitable concepts. The result concepts used include the FADN concepts Farm Net Value Added / Annual Work Unit (FNVA/AWU) and (Farm Net Income / Family Work Unit (FNI/FWU). The net value added indicates the compensation for all agricultural labour and capital of the farm and net income shows the compensation for the farm family's income and own capital. The development of the profitability of farms is studied using the concept of entrepreneur's profit, which has now been also introduced in the EU as Economic Profit. Besides this the development of profitability is analysed using the profitability ratio obtained as the ratio between the entrepreneurial income and the costs of farm family's labour and own capital.

Investment aid is taken into account as staggered payments in the total returns of enterprises, which also include all other support payments to the enterprise. In accordance with the EU FADN system, investment aid is also included in the total capital, which means that the costs include depreciations concerning the property shares financed by means of investment subsidies. Thus the fact that investment subsidies are

included in the total return is not as such reflected in the entrepreneurial income because, for calculating this, a corresponding depreciation cost is deducted.

2 Agricultural production and development of the farm structure in area AB

2.1 Utilised agricultural area, number of farms, and production and age structure

In the period 2006–2011 the number of farms in area AB in southern Finland decreased from about 30 000 farms to about 26 600 (about 11%). By production sectors the number of livestock farms, especially pig, dairy and poultry farms, fell the most (by 39%, 37% and 21%, respectively). Most of the farms that gave up livestock production shifted to the production of cereals or other crops, which is why the total number of farms in these sectors fell by only about 6%.

In this report the farms are classified by production sectors on the basis of standard output. The production sector of each individual enterprise is determined by the product which yields two-thirds of its total standard output.

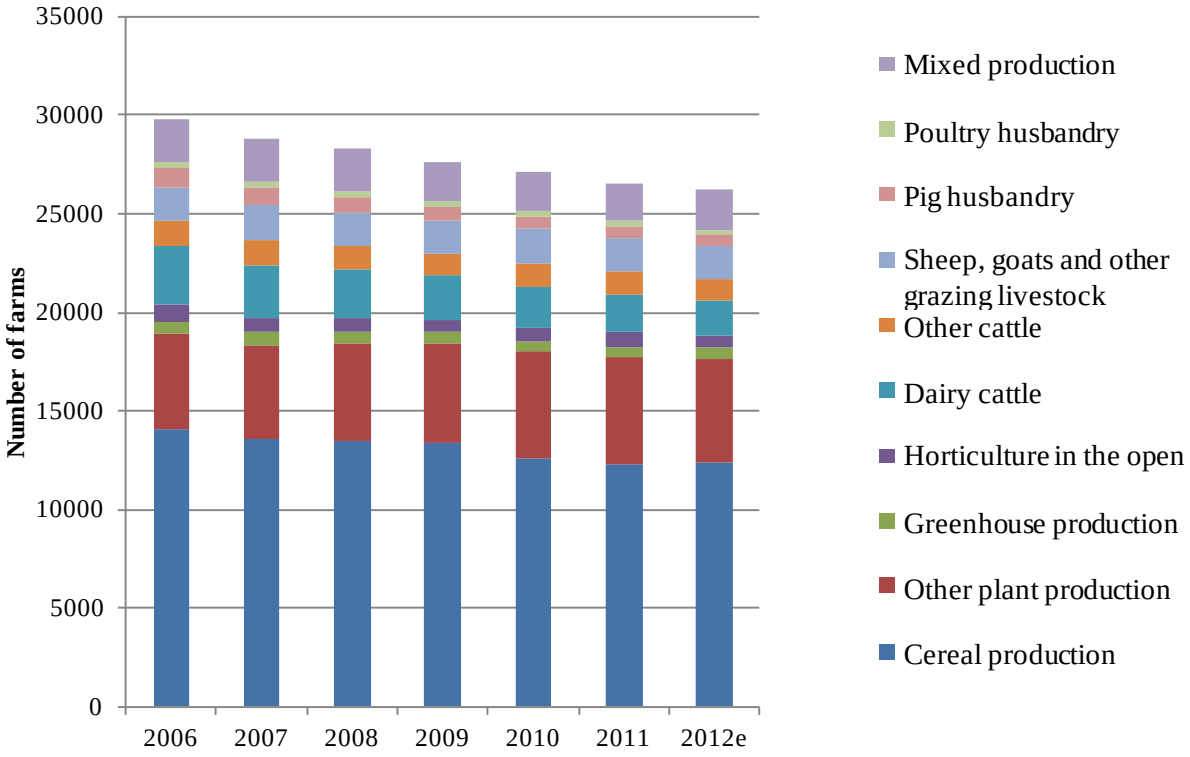


Figure 2.1. Number of farms by production sectors in area AB in 2006–2011. (Tike / MTT).

The number of farms has decreased but the economic size of the remaining farms has grown as a result of structural development. The economic size of farms is obtained by adding up the standardised sales returns, standard outputs, for individual products. Figure 2.2 presents the distribution of farms in southern Finland into economic size classes. The number of farms in the class of the smallest farms 8 000 euros and in the size class 8 000–15 000 euros has decreased the most while the number of farms of larger economic size has stayed about the same, which means that their share of all farms has grown.

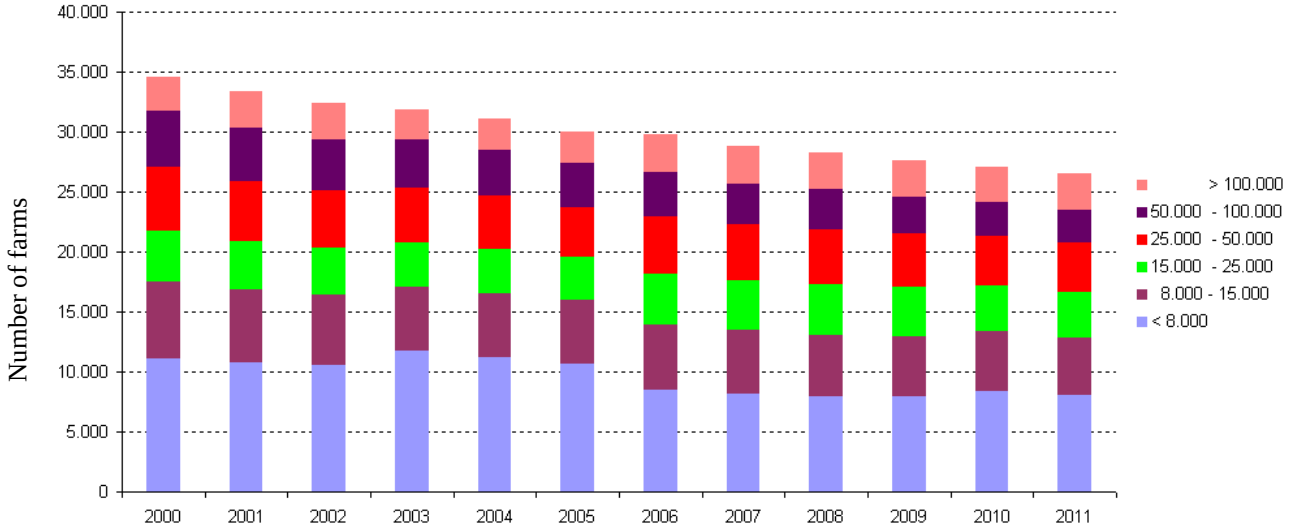


Figure 2.2. Number of farms by economic size class in area AB in 2000–2011 (Tike / MTT).

The average arable area of farms in area AB grew by 2 hectares. The average size of farms in area AB is larger than the average for the whole country. In 2011 the average area of all Finnish farms was 37.1 hectares, while in area AB it was 40.4 hectares (Table 2.1). However, the growth in the farm size was slightly slower in area AB than in the whole country.

Table 2.1. Average farm size in area AB and in the whole country 2007 and 2011 (Tike).

	2007	2011	Change 2007–2011	
	ha	ha	ha	%
Area AB	38,4	40,4	2,0	5,2 %
Whole country	34,3	37,4	2,9	8,3 %

Utilised agricultural area

In 2011 the total utilised agricultural area in area AB was about 1.1 million hectares. From 2007 the area had fallen by more than 13 000 hectares (Table). Of the total area about 35% is in support area A and 65% is in support area B. In 2011 the share of area A in the total utilised agricultural area in the whole country was 16.5% and that of area B was 30.6%. Thus in total 47% of the total agricultural area of Finland is in area AB. This is slightly less than in 2007.

Table 2.2. Utilised agricultural area in area AB and in the whole country in 2007 and 2011 (Tike).

	Area ha		Change 2007–2011	
	2007	2011	Area ha	% change
Area AB	1 083 700	1 070 204	-13 496	-1,2 %
Whole country	2 294 600	2 286 700	-7 900	-0,3 %

Use of arable land and plant production

In Finland the yields of plant production vary considerably from one year to another. The northern location affects the yields in the whole country and, through this, the economic result of agriculture for each individual year. The average yields of many crops harvested in 2009 were the best during the 2000s, but

the poor weather conditions in 2010 resulted in about a third lower yields in 2010 than in the previous record year. In 2011 the cereal yields were again about a quarter higher than in 2010.

Area AB is the most significant plant production region in Finland, accounting for 85% of wheat production and 55% of feed grain production. In 2011 cereal cultivation was the most common production sector in area AB, with 14 833 farms in area AB (57%) engaged in this as their main activity. Of all Finnish cereal farms about 55% and of special crop farms 66% are in area AB. In 2011 599 farms in area AB and as many as 1 716 in area B engaged in special crop production. (Tike.)

Trend in the age structure of farmers

The average age of farmers continues to rise in Finland. From 2006 until 2011 the average age of all Finnish farmers rose from 49.2 to 50.9 years. At the same time the number of farmers is decreasing. In 2010 there were a total of 23 270 farmers in area AB, while in 2001 their number was 28 652. Figure 2.3 presents the trend in the age structure of farmers in area AB in 2001–2010. In 2010 13 783 farmers, about 59%, were 40–60 years of age, while the share of under 40-year-olds was about 16%. The farming population has been ageing steadily all through the 2000s. In 2005 the share of farmers over sixty of all farmers in area AB exceeded the share of farmers under 40. The share of farmers aged 40 to 59 years fell from 62.5% to less than 60% in 2001–2010.

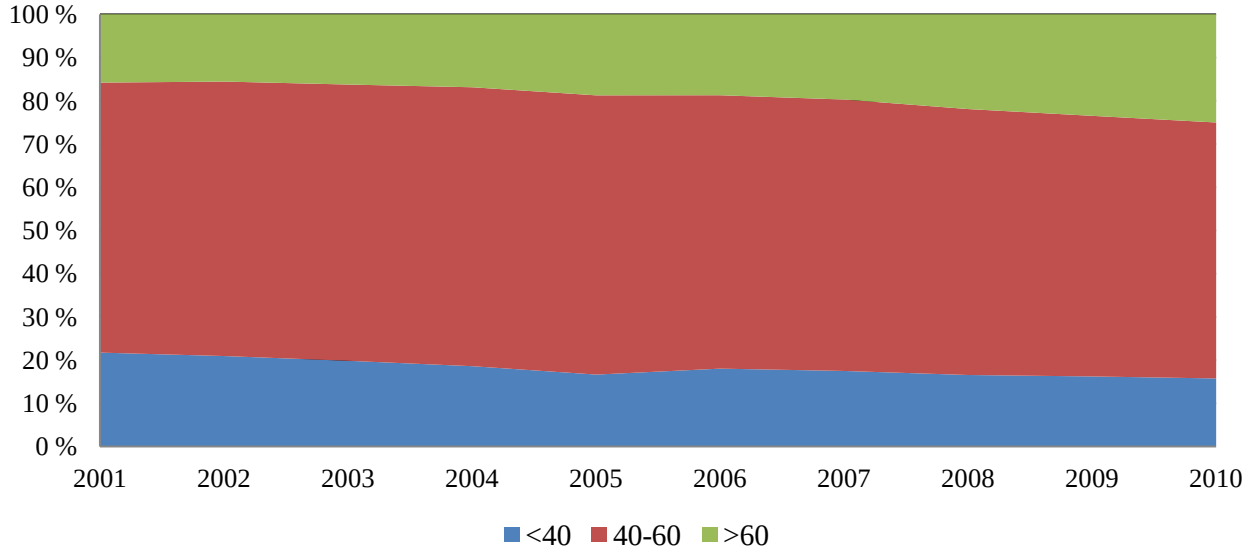


Figure 2.3. Trend in the age structure of farmers in area AB in 2001–2010 (Tike).

Agriculture on the Åland Islands and the outer archipelago of area AB

In 2011 there were 535 farms on the Åland Islands, with an average arable area of about 27 hectares. In the same year the average arable area in the whole country was more than 37 hectares. Agriculture on the Åland Islands is dominated by plant production. In 2011 about 20% of the farms practised cereal cultivation as their main activity. A total of 81 farms, about 15% of the farms in the region, engaged in special crop production. Horticulture is also more common than in the other parts of the country. In 2011 89 farms in the region, 17% of all farms, specialised in the cultivation of horticultural crops.

In 2011 there were only 48 dairy farms on the Åland islands, which is only 9% of the farms in the region. Since 2006 the number of dairy farms had fallen by 38%. However, there has been no significant decrease in the milk production volumes during the 2000s. In quota year 2011/2012 about 12.3 million litres of milk was delivered to the dairies on the main island. The number of dairy cows has also not changed very much in 2006–2011. The amount of milk annually delivered to dairies in the outer archipelago of area AB is about four million litres (Tike).

The number of other cattle farms on the Åland Islands in 2011 was 66, which is about 12% of all farms in the region. This share is a little higher than in the whole country on average. There has been no significant

change in the number of other cattle farms in the region. In 2011 only one farm on the Åland Islands engaged in pig husbandry, poultry husbandry was practised on four farms, while the share of sheep and goat farms was as high as 11%, much higher than in Mainland Finland (Tike).

2.2 Production volumes, change in the number of farms and trend in the farm size

2.2.1 Dairy husbandry

In quota year 2011/2012 a total of 2 200 dairy farms delivered milk to dairies in area AB, which is 21% of all Finnish dairy farms. Proportionally the number of dairy farms has decreased more rapidly in area AB than in the whole country on average (Table 2.3). From quota period 2007/2008 the number of dairy farms in area AB has decreased by a quarter as a total of 774 farms quit milk production. During the same period the number of dairy farms in the whole country fell by about 23 %. In the whole country more than 3100 farms quit milk production between quota years 2007/2008 and 2011/2012.

Table 2.3. Trend in the number of dairy farms in area AB and in the whole country in quota years 2007/2008–2011/2012 (Tike).

	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	Change 2007/2008–2011/2012	Change %
Area AB	2 974	2 693	2 508	2 371	2 200	-774	-26,0%
Share of production the whole country	22,0%	21,6%	21,5%	21,4%	21,2%	-0,8	-
Whole country	13 536	12 466	11 680	11 084	10 395	-3 141	-23,2%

Figure 2.4 presents the average size of dairy farms in area AB in 2006–2011 by hectares and measured by the number of dairy cows. In 2006 the average cultivated area of dairy farms in area AB was about 44 hectares, while by 2011 this had risen to about 54 hectares. The number of dairy cows per farm grew as well: in 2006 the average number of cows on dairy farms in area AB was 21, while by 2011 this had risen to almost 27 cows.

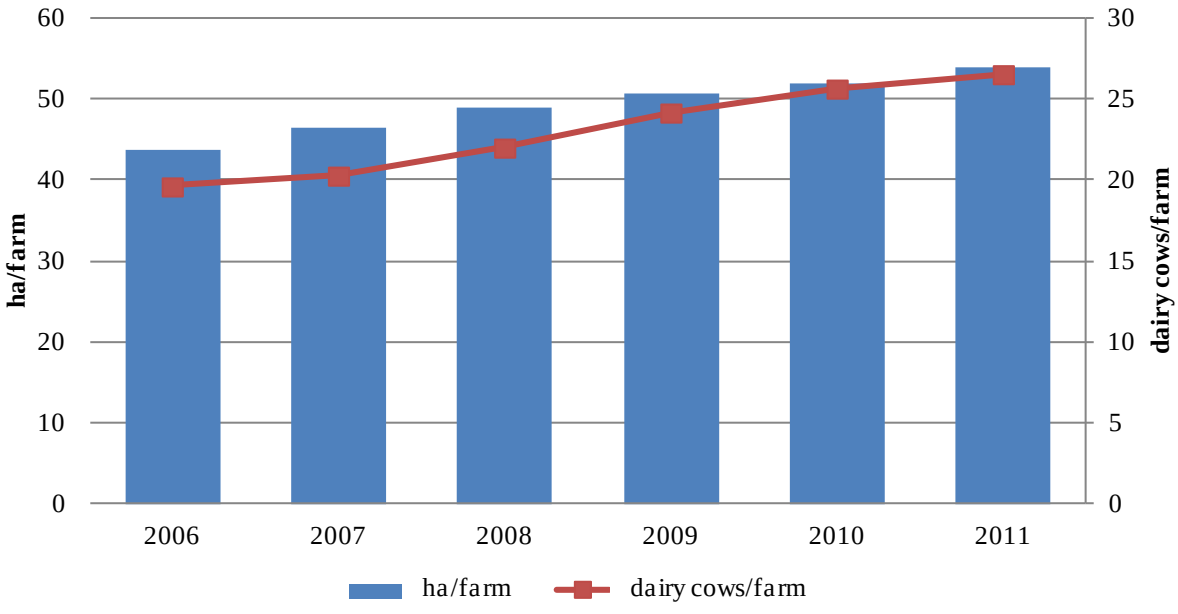


Figure 2.4. Average number of dairy cows and arable area on dairy farms in area AB in 2006–2011 (Tike).

From quota year 2007/2008 there has been some decrease, about 24.6 million litres, in the milk production volume in area AB (Table 2.4). In the whole country the change in the milk production volume has been smaller than in area AB (Table 2.4). In quota year 2011/2012 about 5% less milk was produced in area AB than in quota year 2007/2008, while in the whole country the production fell by less than one per cent. Most of milk production in area AB takes place in area B. In quota year 2011/2012 a total of 103 million litres of milk was produced in area A, 357 million litres in area B, and 3.8 million litres in the outer archipelago of area AB (Tike). In quota year 2011/2012 about 21% of the total milk production in Finland took place in area AB.

Table 2.4. Amount of milk delivered to dairies (1 000 litres) in area AB and in the whole country in quota years 2007/2008–2011/2012 (Tike).

	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	Change 2007/2008–2011/2012	Change %
Area AB	488 814	480 968	480 641	472 013	464 238	-24 575	-5,0%
Share of production in the whole country	22,2%	22,0%	21,6%	21,2%	21,2%	-1,0	-
Whole country	2 205 405	2 186 324	2 223 068	2 222 321	2 192 006	-13 399	-0,6%

The amount of milk produced per farm has grown both in area AB and in the whole country (Figure 2.5). In area AB the average production volume of dairy farms has grown by almost 90% from quota year 2001/2002. In quota year 2001/2002 the average milk production volume of a dairy farm was a little over 110 000 litres, while by 2011/2012 the average production of a dairy farm was more than 200 000 litres. The average annual milk production volume per dairy farm in area AB is about the same as that in the whole country.

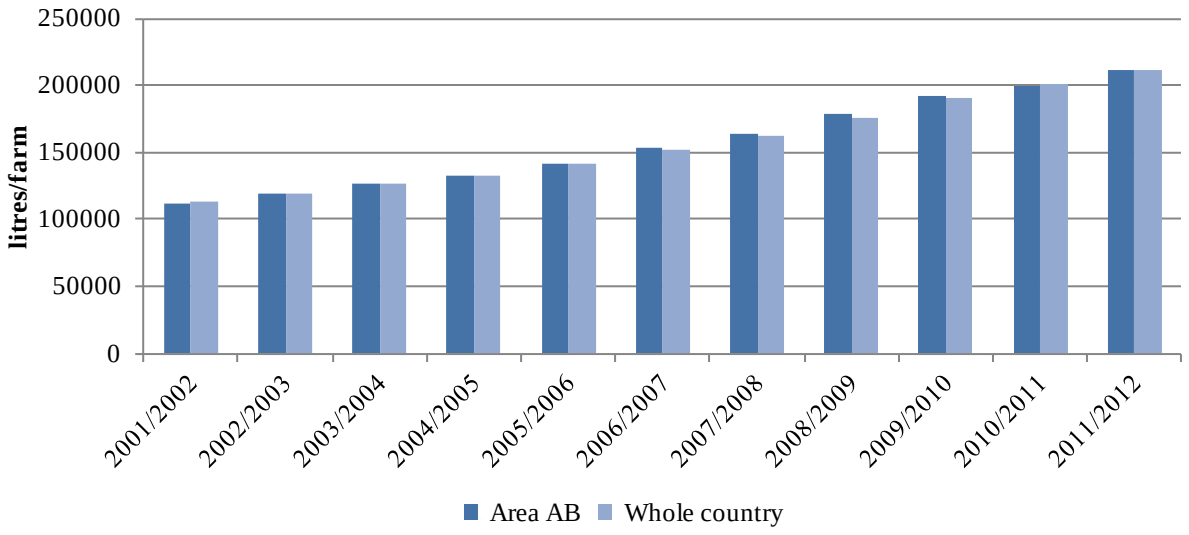


Figure 2.5. Average milk production volume of dairy farms (litres) in area AB and in the whole country in quota years 2001/2002–2011/2012 (Tike).

2.2.2 Other cattle husbandry

In 2011 there were a total of 1 015 other cattle farms in area AB. About 27% of the other cattle farms in the whole country are in area AB. In 2006–2011 the number of other cattle farms in area AB decreased by

about 180 farms, i.e. about 15%. Most of the other cattle farms are in area B: in 2011 the number of other cattle farms in area B was 833 while in area A it was only 182. The average size of other cattle farms has grown strongly: in 2007 the average cultivated arable area of other cattle farms in area AB was 43.6 ha, while by 2011 this had risen to about 53 ha. The average size of other cattle farms in area AB measured by the arable area is about the same as in the whole country on average.

Table 2.5. Beef production (million kg) in area AB and in the whole country in 2006–2011 (Tike).

	2006	2007	2008	2009	2010	2011	Change 2007–2011	Change %
Area AB total	18,1	18,4	16,9	16,3	16,5	16,3	-1,9	-10,3%
Share of production in the whole country	21,3%	21,2%	21,0%	20,1%	20,1%	19,7%	-1,6	-
Whole country	85,1	86,7	80,3	81,1	82,1	82,7	-2,5	-2,9%

Proportionally beef production in area AB has decreased more than in the whole country in total since 2006 (Table 2.5): in 2006–2011 beef production in area AB fell by about 10% while in the whole country it decreased by only about 3%. In 2011 beef production in area AB totalled 16.3 million kg, while in 2006 it was still about 18.1 million kg. Area AB accounts for about a fifth of beef production in Finland. The share of area AB decreased by 1.6 percentage points in 2006–2011.

2.2.3 Sheep, goat and horse husbandry

About half of the total number of sheep in Finland are in area AB. The number of sheep in the area increased from about 47 500 in 2006 to more than 54 000 2011 (Figure 2.6). However, the number of sheep farms fell from 880 in 2006 to 635 in 2011.

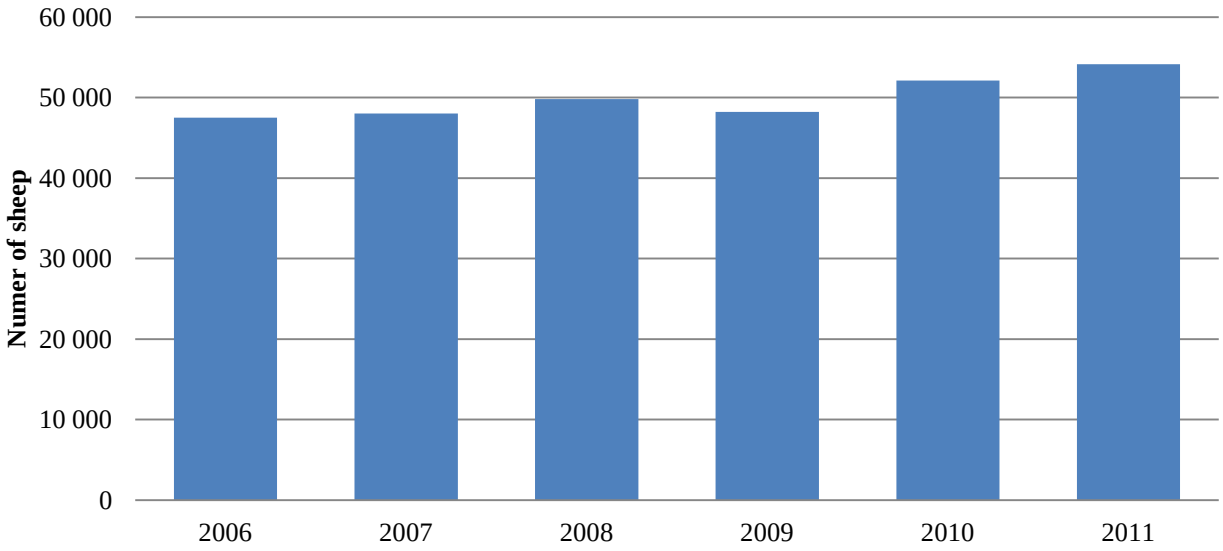


Figure 2.6. Number of sheep on farms in area AB in 2006–2011 (Tike).

The number of goats on farms in area AB fell by more than a third in 2006–2011 (Figure 2.7): in 2011 there were 2 309 goats in area AB, while in 2006 their number was still 3 659. In 2006 more than half of all goats in Finland were in area AB, but in 2011 this area represented only 47% of the number of goats in Finland. The number of goat farms fell by 68% from 2006 so that in 2011 goats were kept on 83 farms in area AB.

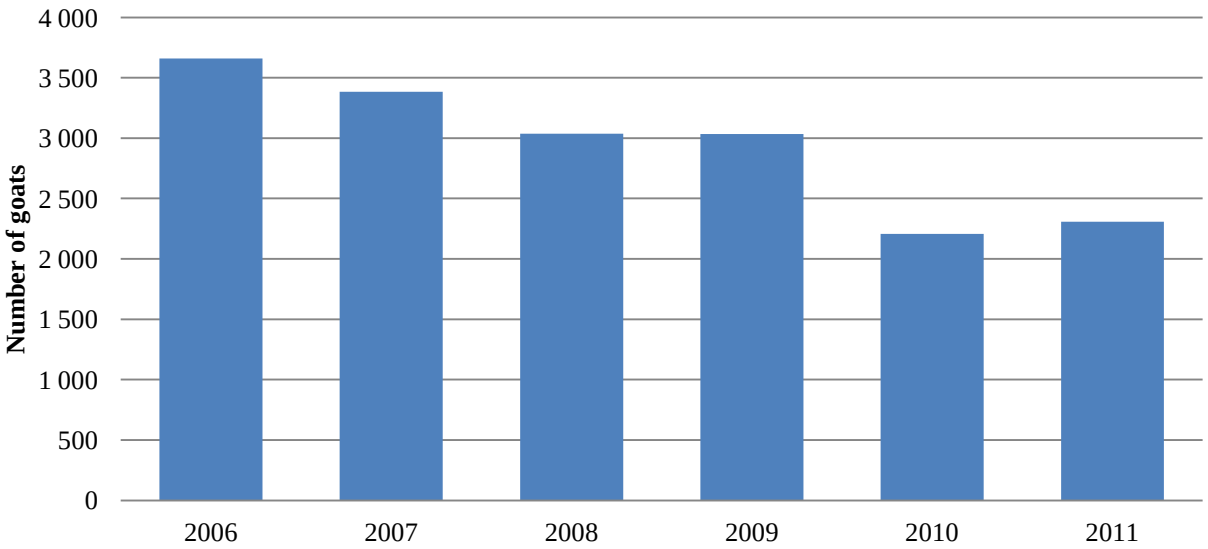


Figure 2.7. Number of goats on farms in area AB in 2006–2011 (Tike).

The number of horses on farms in area AB was 15 612, which is about half of all horses on Finnish farms. This share did not change in 2006–2011. On farms in area AB the number of horses has not grown since 2008 (Figure 2.8), and the number of horse farms has not changed very much since 2006: in 2006 there were horses on 2 230 farms in area AB, while in 2011 the number of farms with horses was 2 201.

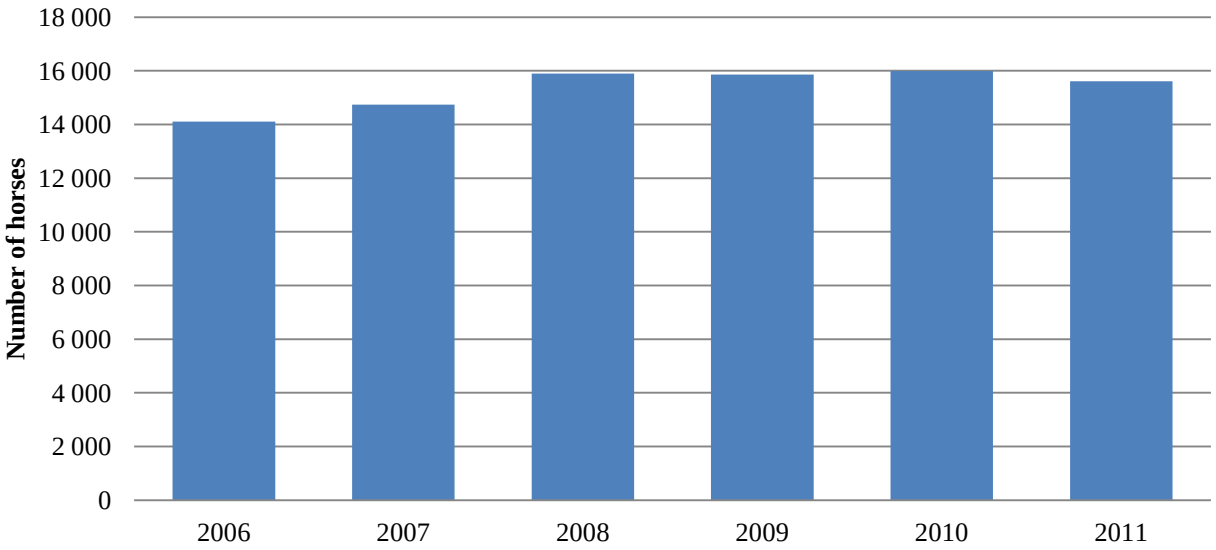


Figure 2.8. Number of horses on farms in area AB in 2006–2011 (Tike).

2.2.4 Pig and poultry husbandry

About half of the Finnish pig farms are in area AB. In 2011 there were 969 pig farms in the area, of which 306 were in area A and 663 in area B. Since 2006 more than 500 pig farms, a little over a third, had quit production since 2006. The arable area of pig farms in area AB is above the average in the whole country. In 2007 the average arable area of pig farms in area AB was about 63 ha, while in the whole country it was about 60 ha. In 2011 the average arable area of pig farms in area AB was 77 ha and in the whole country it was about 72 ha.

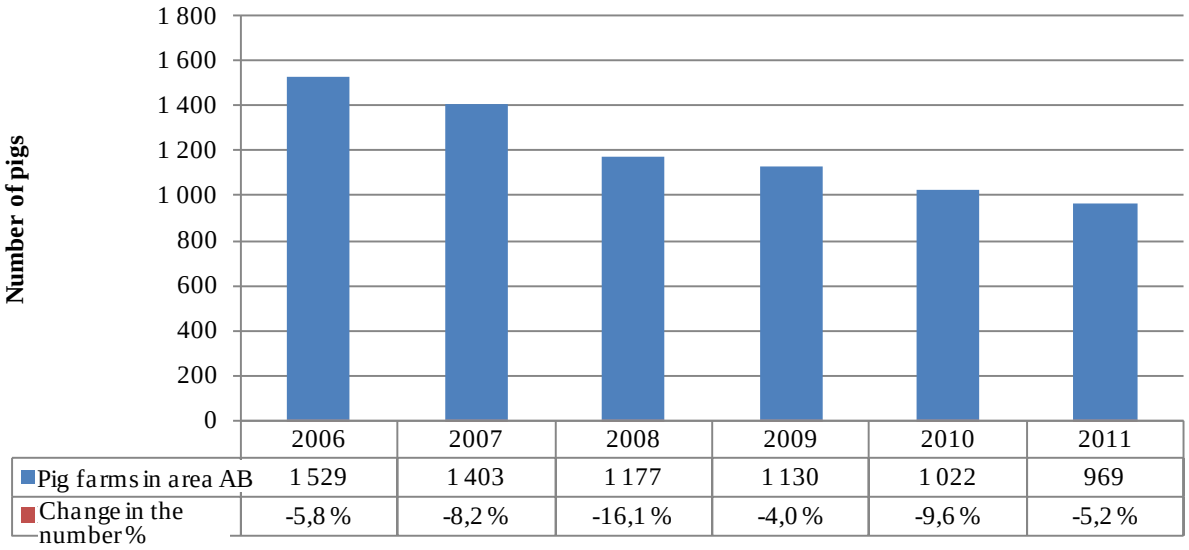


Figure 2.9. Number of pig farms in area AB in 2006–2010 and change in the number from the previous year (Tike).

A significant share of pig farms in area AB quit production in 2008, when the number of pig farms in the area fell by 16% from the year before (Figure 2.9). This quite dramatic fall was partly due to the decision to decouple support payments to pig and poultry husbandry in southern Finland from the production in that year. Decoupled payments weakened the incentive to produce and left the production volumes to be steered more strongly by the markets. The difficult market situation in 2008 was another reason for the rapid decrease in the number of pig farms.

More than half of Finnish poultry farms are in area AB. In 2011 there were 436 poultry farms in area AB, which is about 63% of all poultry farms in Finland. Of these 271, 40% of all Finnish poultry farms, were in area B. From 2006 the number of poultry farms in area AB had decreased by almost a fifth. In 2007 the average arable area of poultry farms in area AB was 55 ha, while in the whole country this was 51 ha. In 2011 the average size of poultry farms in area AB measured by the arable area was almost 67 ha.

Of the total of about 140 000 sows in Finland more than half are in area AB (Table 2.6), and this share has also grown since 2006. In 2006 there were a total of 78 700 sows in area AB. In 2006–2011 the number of sows fell by more than 16% in area AB, but this was less than in the whole country on average: in the whole of Finland the number of sows fell by almost a fifth.

Table 2.6. Number of sows in area AB and in the whole country in 2006–2011 (Tike).

	2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Area AB	94 361	92 523	90 595	77 432	80 213	78 698	-15 663	-16,6%
Share of production in the whole country	54,7%	54,2%	54,9%	53,3%	53,6%	56,4%	1,6	-
Whole country	172 378	170 671	165 112	145 400	149 744	139 584	-32 794	-19,0%

Pigmeat production decreased more in area AB than in the whole country on average. In 2006 the share of area AB in the total pigmeat production in Finland was about 56%, but by 2011 it had fallen to 54%. During this period pigmeat production in area AB fell by 6.6%, while in the whole country the reduction was only 3% (Table 2.7).

Table 2.7. Pigmeat production (million kg) in area AB and in the whole country in 2006–2011 (Tike).

	2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Area AB	116,9	119,7	119,8	112,2	109,4	109,2	-7,7	-6,6%
Share of production in the whole country	56,3%	56,1%	55,2%	54,6%	53,9%	54,1%	-2,1	-
Whole country	207,8	213,3	216,9	205,7	203,0	201,6	-6,2	-3,0%

Poultry meat production has increased in Finland, following the growth in the consumption. In 2011 about 61% of the broiler and turkey meat production took place in area AB (Table 2.8) and a total of 61 million kg of broiler and turkey meat was produced in the area. Since 2006 the production had grown by almost 17%. In 2009 there was some decrease in the production because of the global avian influenza epidemic, but since 2010 the poultry meat volumes have again been growing.

Table 2.8. Broiler and turkey meat production (million kg) in area AB and in the whole country 2006–2010 (Tike).

	2006	2007	2008	2009	2010	2011	Change 2006–2010	Change %
Area AB	52,5	58,0	61,7	53,9	55,7	61,3	8,8	16,8%
Share of production in the whole country	60,3%	61,1%	61,2%	57,6%	58,0%	61,1%	0,8	-
Whole country	87,1	94,9	100,8	93,5	96,1	101,5	13,3	15,3%

Of the laying hens in Finland more than two-thirds are in area AB. In 2011 about 78% of the almost 3.3 million laying hens in the whole country were in area AB, which is over 110 000 hens more than in 2006 (Table 2.9). During this period the share of laying hens in area AB of their total number in Finland has stayed about the same, and the number of laying hens has increased by almost 5%.

Table 2.9. Number of laying hens (1000) in area AB and in the whole country in 2006–2011 (Tike).

	2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Area AB	2 438	2 501	2 454	2 278	2 595	2 551	113	4,6%
Share of production in the whole country	78,2%	79,7%	74,5%	78,3%	76,2%	77,9%	-0,3	-
Whole country	3 117	3 140	3 292	2 908	3 405	3 275	157	5,0%

Egg production grew in area AB in 2006–2011 (Figure 2.10). In 2011 egg production in the area totalled 48.5 million kg, which is 6.1% more than in 2006. The share of egg production in area AB of the production in the whole country has stayed about the same during this period. In 2006 almost four-fifths of the eggs produced in Finland came from area AB.

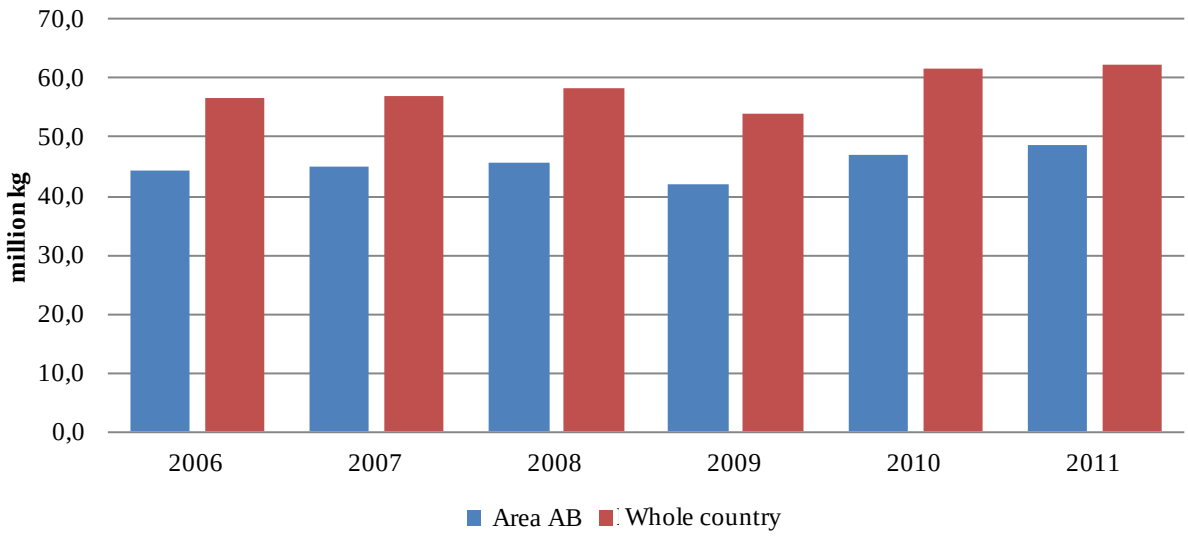


Figure 2.10. Egg production (million kg) in area AB and in the whole country in 2006–2011 (Tike).

2.2.5 Horticulture

Greenhouse production

Greenhouse production has decreased in area AB, with a fall of more than 97 000 square metres in the surface area of greenhouses that produce 2–7 months a year. In support area C, however, the greenhouse area has grown so that in the whole country the area has decreased less than the reduction in area AB, by about 92 000 square metres (Table 2.10).

Table 2.10. Greenhouse production area approved in the context of support application (1 000 m2) in area AB and in the whole country in 2006–2011 in short-term cultivation (2–7 months), long-term cultivation (over 7months) and in short and long-term cultivation in total (Tike).

		2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Short term (2-7 months)	Area AB	505	495	444	423	418	408	-97	-19,2 %
	Share of production in the whole country	52,6 %	52,4 %	49,4 %	49,3 %	46,5 %	47,0 %	-5,6	-
	Whole country	961	944	899	859	898	869	-92	-9,6 %
Long term (over 7 months)	Area AB	1 436	1 425	1 373	1 282	1 256	1 197	-239	-16,6 %
	Share of production in the whole country	46,7 %	46,7 %	45,5 %	43,9 %	44,1 %	43,4 %	-3,3	-
	Whole country	3 076	3 054	3 019	2 923	2 849	2 761	-315	-10,2 %
Short and long term in total	Area AB	1 942	1 920	1 839	1 703	1 674	1 605	-337	-17,4 %
	Share of production in the whole country	48,1 %	48,0 %	46,5 %	45,1 %	44,7 %	44,2 %	-3,9	-
	Whole country	4 037	3 997	3 951	3 780	3 748	3 630	-407	-10,1 %

The greenhouse area that were in production for 2–7 months in area AB in 2011 was 19.2% smaller than in 2006. During the same period the greenhouse area in the whole country decreased by only 9.6%. In 2006 almost 52% of the greenhouse area in production for 2–7 month was in area AB, but by 2011 this share had fallen to 47% (Table 2.10).

The surface area of greenhouses that are in production for more than 7 months has decreased by over 239 000 square metres. The area has decreased in the whole country, but the greatest fall has taken place in area AB, and the share of area AB of the production in the whole country has also decreased. In 2006 almost 47% of the greenhouse area in production for more than 7 months was in area AB, while by 2011 its share had fallen to about 43% (Table 2.10).

As regards the trend in the surface area of greenhouse production in total, the area has decreased more in area AB than in the whole country on average: in area AB the area fell by about 17% from 2006, while in the whole country the decrease was about 10% (Table 2.10).

The share of the area under greenhouse vegetables in the production area in the whole country has decreased. The share of area in short cultivation of the area in the whole country decreased by 8.7% and the share of the area in long cultivation fell by 1.3%. In total the share of the area under greenhouse vegetables in area AB decreased by 2.9%. In area AB the area decreased by 126 000 square metres and in the whole country by 147 000 square metres. This means that by far most of the reduction in the area under greenhouse vegetables in Finland took place in area AB (Table 2.11).

Table 2.11. Area under greenhouse vegetables approved in the context of support application (1 000 m2) in area AB and in the whole country in 2006–2011 in short-term cultivation (2–7 months), long-term cultivation (over 7months) and in short and long-term cultivation in total (Tike).

		2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Short term (2-7 months)	Area AB	224	208	184	154	154	147	-77	-34,3 %
	Share of production in the whole country	62,1 %	62,1 %	55,7 %	56,2 %	50,3 %	53,4 %	-8,7	-
	Whole country	361	335	331	274	305	275	-85	-23,7 %
Long term (over 7 months)	Area AB	739	762	747	713	709	690	-49	-6,6 %
	Share of production in the whole country	36,0 %	36,8 %	35,9 %	34,8 %	35,1 %	34,7 %	-1,3	-
	Whole country	2 050	2 071	2 081	2 048	2 020	1 987	-63	-3,1 %
Short and long term in total	Area AB	963	970	931	867	862	837	-126	-13,1 %
	Share of production in the whole country	39,9 %	40,3 %	38,6 %	37,3 %	37,1 %	37,0 %	-2,9	-
	Whole country	2 410	2 405	2 411	2 323	2 325	2 263	-147	-6,1 %

The area under short-term cultivation of ornamental plants fell by 24 000 square metres in area AB, while in the whole country the area in short-term cultivation decreased by 14 000 square metres. This means that the area has grown outside area AB, which is also seen in the reduction of the share of area AB of the cultivation area in the whole country. In total the area under ornamental plants in area AB fell by 214 000 square metres, while in the whole country the reduction was 250 000 square metres. However, area AB still accounts for more than half of the cultivation area of ornamental plants, in spite of the decrease in the share from 60.5% in 2006 to 56.3% in 2011.

Table 2.12. Areas eligible for support for greenhouse production of ornamental plants (1 000 m2) in area AB and in the whole country in 2006–2011 in short-term (2–7 months) and long-term cultivation (over 7 months) (Tike).

		2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Short term (2-7 months)	Area AB	277	285	278	266	258	253	-24	-8,7 %
	Share of production in the whole country	46,7 %	47,2 %	46,7 %	46,0 %	44,3 %	43,8 %	-2,9	-
	Whole country	593	603	596	578	582	579	-14	-2,4 %
Long term (over 7 months)	Area AB	695	655	614	567	536	505	-190	-27,3 %
	Share of production in the whole country	68,5 %	67,5 %	66,4 %	65,4 %	65,7 %	65,7 %	-2,8	-
	Whole country	1 014	970	925	866	816	769	-245	-24,2 %
Short and long term in total	Area AB	972	939	893	833	794	758	-214	-22,0 %
	Share of production in the whole country	60,5 %	59,7 %	58,7 %	57,7 %	56,8 %	56,3 %	-4,2	-
	Whole country	1 606	1 573	1 521	1 444	1 398	1 347	-259	-16,1 %

The number of farms engaged in greenhouse vegetable production decreased less in area AB than in the whole country (Figure 2.11). In the whole country the number of enterprises producing greenhouse vegetables decreased by 28% from 2006 to 2011 but in area AB this fell by 20%. Instead, the decrease in the cultivation area was smaller in the whole country than in area AB, which means that the average cultivation area has increased more rapidly in the whole country than in area AB.

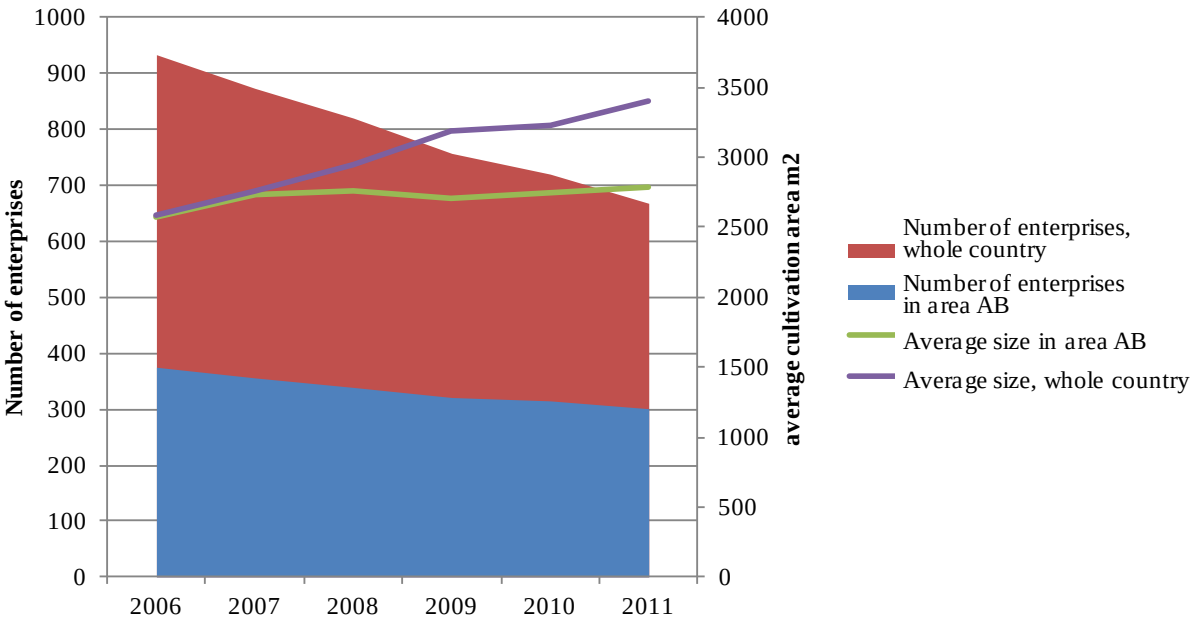


Figure 2.11. Trends in the number of farms engaged in greenhouse vegetable production and average cultivation area in area AB and in the whole country in 2006–2011 (Sources: Mavi, Tike).

Between 2006 and 2011 the number of enterprises producing cut flowers decreased very strongly, by more than 50%, both in area AB and in the whole country. Of the enterprises producing cut flowers 70% are in area AB. The number of enterprises producing potted and bedding plants fell by more than 10% in both area AB and in the whole country. About 55% of enterprises producing potted and bedding plants in Finland are in area AB (Figure 2.12).

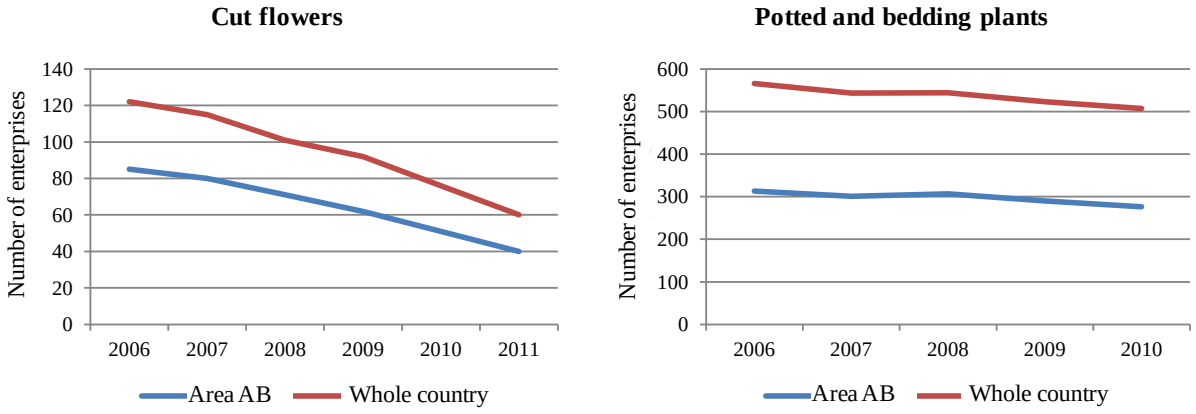


Figure 2.12. Number of enterprises producing cut flowers and potted and bedding plants in area AB and in the whole country in 2006–2011 (Sources. Mavi, Tike). NB. Does not included farms which have given combinations of Potted and bedding plants and cut flowers as their support code.

The average yields of the most important greenhouse vegetables are smaller in area AB than in the whole country. For cucumber and tomato, in particular, this is due to the production practice, i.e. whether we are concerned with year-round or summer cultivation. In area AB the share of cultivation period of over 7 months is only 35%, which means that year-round cultivation is less common in area AB than in the other parts of the country. This, in turn, is reflected as lower yields per square metre for greenhouses. Among individual products, the average yield of tomato differs the most between area AB and the rest of the country. The average yield per cultivation area of cucumber has grown more rapidly in the other parts of Finland than in area AB, while in the reference year 2006 the average yields were still almost the same. Instead, for potted and bedding plants the average yields are higher in area AB than in the other parts of the country.

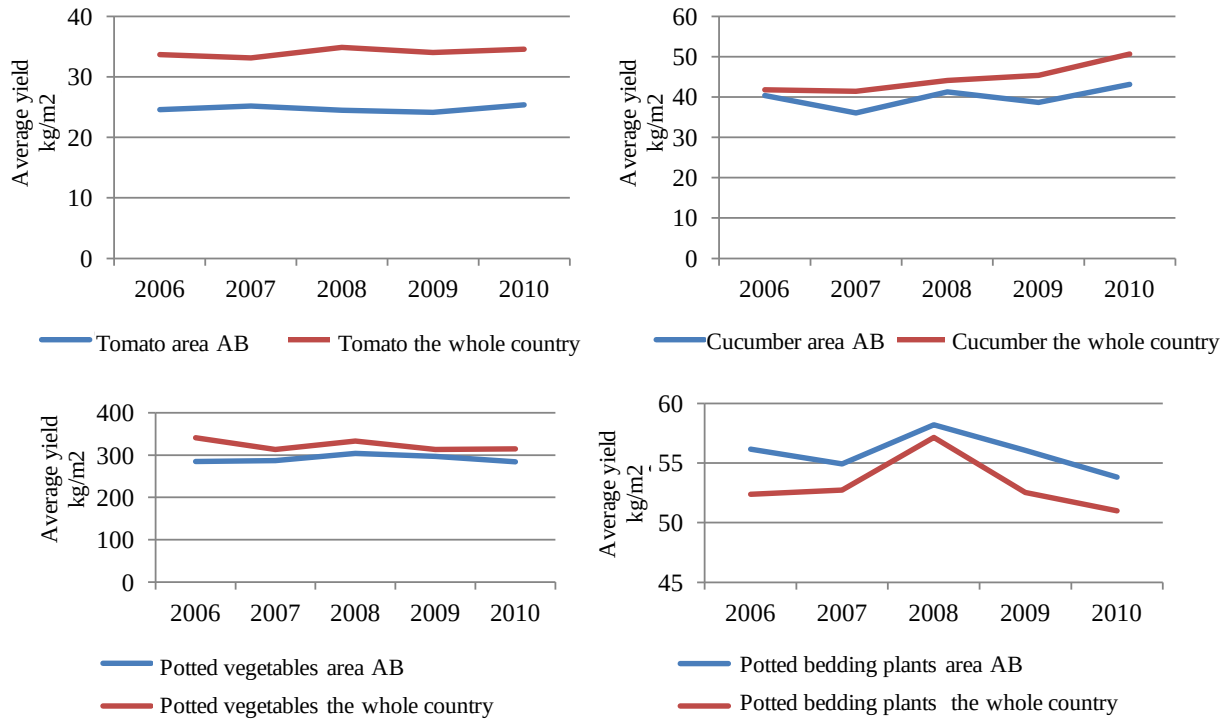


Figure 2.13. Average yield of tomato, greenhouse cucumber, potted vegetables and potted and group bedding plants in area AB and in the whole country.

The significance of the aid for greenhouses should also be considered in monetary terms. Table 2.13 shows the total return on vegetables and ornamental plants produced in greenhouses, which means the market return at producer price for the crop produced in a certain year. In 2011 the aid for greenhouses paid in the whole country represented about 15% of the total return on horticultural production. In area AB the share of the aid for greenhouses was about 7% of the total return in the whole country.

Table 2.13. Total return on ornamental plants and greenhouse vegetables in the whole country and the amount of aid for greenhouses paid in area AB and in the whole country (MTT, Tike).

	Total return on ornamental plants, € million	Total return on greenhouse vegetables, € million	Aid for greenhouses in the whole country, € million	Aid under Article 141 for greenhouses in area AB, € million
2006	93,8	140,8	39,1	18,4
2007	98,7	135,9	38,2	18,0
2008	99,0	147,7	37,3	16,8
2009	97,5	150,4	36,5	16,4
2010	88,1	151,9	36,5	15,8
2011e	82,8	176,1	35,6	15,3

Production in the open

Area AB is a significant production area for vegetables grown in the open, with 78% of the production area of outdoor vegetables and 40% of the fruit, berry and nursery production area in Finland. For vegetable production in the open in southern Finland two types of national aid are applicable: southern aid for special crops and storage aid for horticulture products. The aid for special crops is applicable to outdoor vegetables intended for human consumption and garden pea harvested while still unripe.

The storage aid for horticulture products is determined on the basis of the quantity of eligible horticulture products in storage (m^3) and the type of storage (mechanically cooled or other facility). The eligible prod-

ucts are Chinese cabbage, kohlrabi, swede, celeriac, turnip, apple, parsnips, carrot, beetroot, red cabbage, leek, Brussels sprouts, Savoy cabbage, onion and white cabbage. The storage aid is calculated from the average storage volume of horticulture products in use in October, November and December of each aid year.

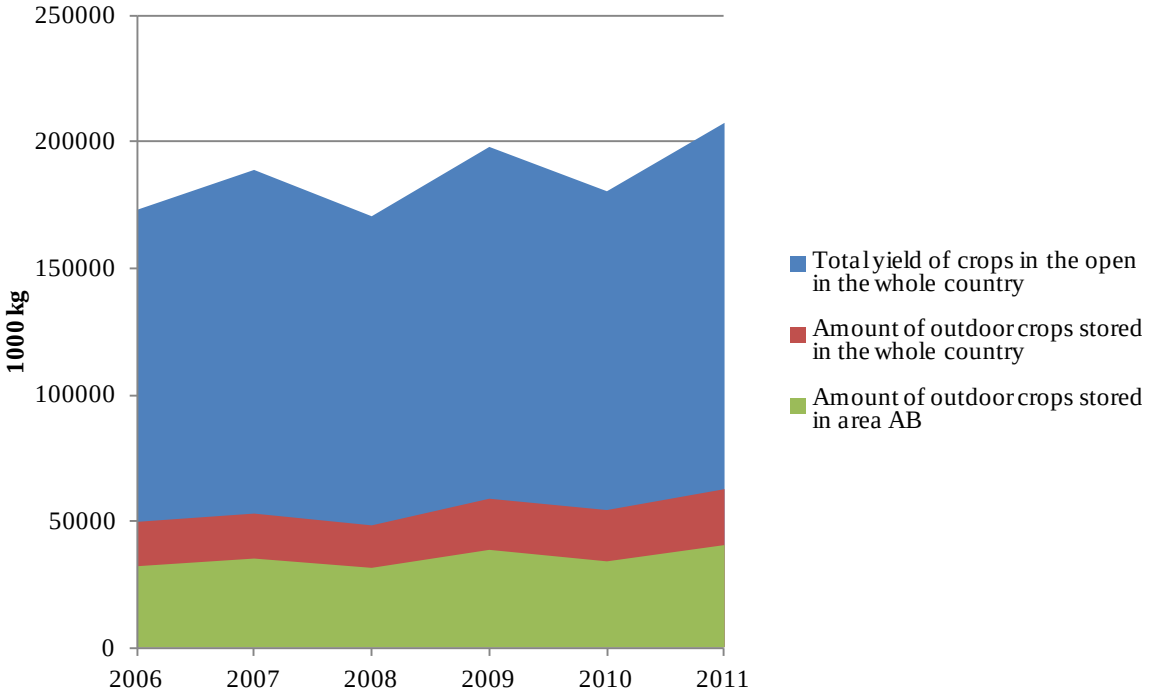


Figure 2.14. Total yield of crops in the open in the whole country and the amount of outdoor crops eligible for the storage aid (1000 kg) in the whole country and in area AB (Tike).

Certain plants cultivated in the open are not suitable to be stored, and thus they are also not covered by the storage aid scheme. These include berry plants as well as highly perishable vegetables, such as lettuce. The share of the crop that is eligible for the storage aid of the total outdoor vegetable crop measured in kilograms is about 30%. The share of area AB of the total crop that is eligible for the storage aid of the total crop produced in Finland is about 20% (Figure 2.14). The share of crops that are eligible for the storage aid is about a third of the total production area of crops grown in the open in Finland (Figure 2.15).

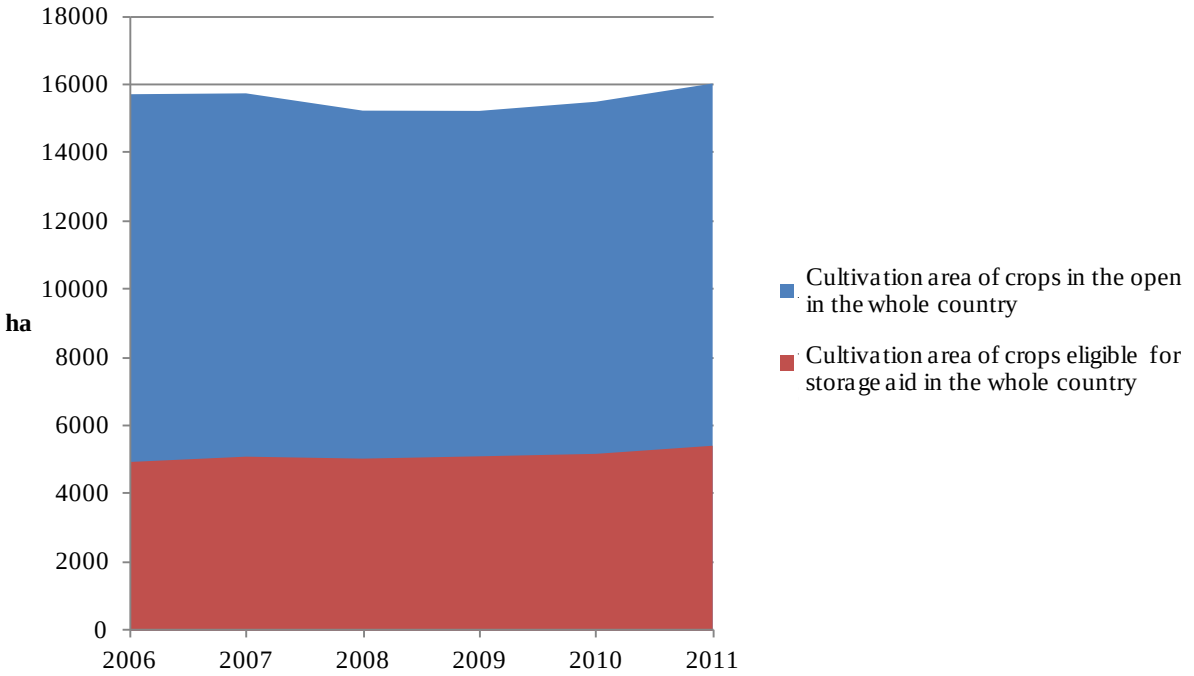


Figure 2.15. Cultivation area of crops in the open and cultivation area of crops eligible for the storage aid in the whole country (Tike).

The volumes of the products that are eligible for the storage aid have grown in both area AB and in the whole country (Table 2.14). This is partly due to the growth in the production volumes of vegetables and fruit to be stored (Figure 2.16). The amount of products to be stored has grown more in area AB than in the whole country on average, partly because most of the commercial cultivation of vegetables grown in the open takes place in area AB. Almost all of the production area of commercial fruit production is located in area AB. The share of products in mechanically cooled facilities is greater in area AB than in the whole country on average, while the share of other types of storage facilities decreased in area AB in 2006–2011.

Table 2.14. Volumes of products eligible for the storage aid (m^3) in area AB and in the whole country in 2006–2011 (Tike).

		2006	2007	2008	2009	2010	2011	Change 2006–2011	Change %
Mechanically cooled facility	Area AB	81 412	87 667	82 261	101 746	92 134	105 132	23 720	29,1 %
	Share of production in the whole country	61 %	63 %	63 %	63 %	61 %	63 %	2	-
	Whole country	132 894	139 639	131 613	160 906	150 014	167 173	34 279	25,8 %
Other facility	Area AB	18 071	21 372	15 183	17 794	13 712	19 938	1 867	10,3 %
	Share of production in the whole country	85 %	87 %	84 %	83 %	73 %	75 %	-10	-
	Whole country	21 233	24 651	18 009	21 448	18 844	26 679	5 446	25,6 %

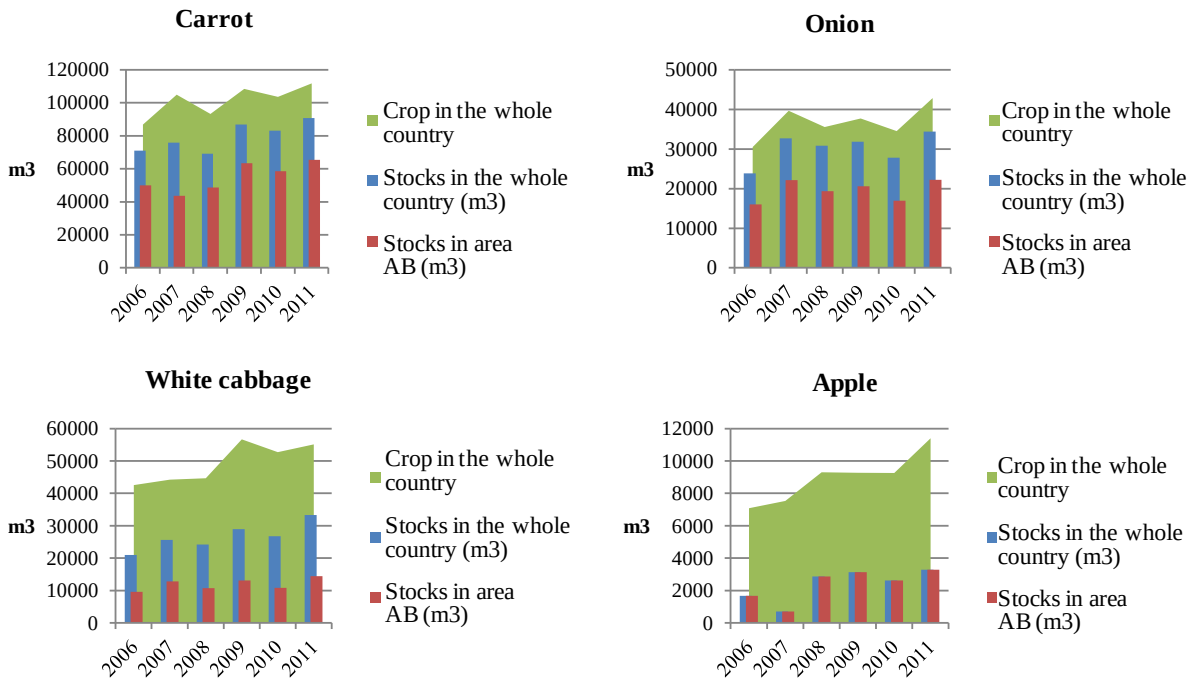


Figure 2.16. Total production of certain products eligible for the storage aid (m^3), and quantities stored used as the grounds for the storage aid in the whole country and in area AB (m^3).

The significance of the storage aid should also be considered in monetary terms. Table 2.15 shows the total return on vegetables grown in the open and berries and fruits, which means the market return at producer price for the crop produced in a certain year. In 2010 the storage aid paid in the whole country represented about 1.3% of the total return on vegetables grown in the open, and the share of the storage aid paid in area AB was about 0.8% of the total return in the whole country.

Table 2.15. Total return on vegetables grown in the open in the whole country and the amount of storage aid paid in area AB and in the whole country (MTT, Tike).

	Total return on vegetables in the open, € million	Total return on berries and fruits, € million	Storage aid paid in the whole country, € million	Storage aid paid in area AB, € million
2006	82,1	37,0	1,9	1,1
2007	99,7	46,7	1,8	1,1
2008	96,6	55,4	2,0	1,2
2009	102,2	54,2	2,1	1,2
2010	106,9	48,1	2,1	1,2
2011e	130,8	66,1	1,9	1,2

2.3 Structural development of agriculture in area AB compared to other EU countries

The number of farms has decreased rapidly in area AB in southern Finland since Finland joined the EU in 1995. About a third of the farms in the area quit production between 1995 and 2007. The development has been much more rapid in area AB in Finland than in the EU-15 on average, where the number of farms fell by about 23% during the same period (Table 2.16). In Sweden, which became an EU member at the same time as Finland, the number of farms has decreased less than in the EU-15: in Sweden about 18% of farms quit production in 1995–2007. In Austria the number of farms has fallen by less than a fifth since the country joined the EU in 1995. Instead, the trend in the number of farms does not differ markedly from that in Denmark and Germany, where the number of farms has decreased a little more rapidly than in area AB in Finland.

Table 2.16. Number of farms in certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Country	1995	2000	2003	2005	2007	Change 1995–2007	Change %
Denmark	68 770	57 830	48 610	51 680	44 620	-24 150	-35,1 %
Sweden	88 830	81 410	67 890	75 810	72 610	-16 220	-18,3 %
Austria	221 750	199 470	173 770	170 640	165 420	-56 330	-25,4 %
Germany	566 910	471 960	412 300	389 880	370 480	-196 430	-34,6 %
EU-15	7 370 040	6 770 690	6 238 950	5 846 470	5 662 410	-1 707 630	-23,2 %
Area AB	42 178	33 829	31 256	29 421	28 205	-13 973	-33,1 %

Figure 2.17 shows the average arable area of farms in area AB in Finland and in Denmark, Germany, Austria and Sweden. In 1995 the average arable area of farms in area AB was about 25 ha. This was a little larger than in Austria, which joined the EU at the same time with Finland, but smaller than in the other reference countries. In Denmark the average arable area of farms in 1995 was about 40 ha. The average arable area of farms in area AB has grown, but by 2007 it had not yet reached 40 ha. As can be seen in Figure 2.18, of the reference countries in Denmark and Germany the growth in the arable area has been equally rapid as in area AB Finland.

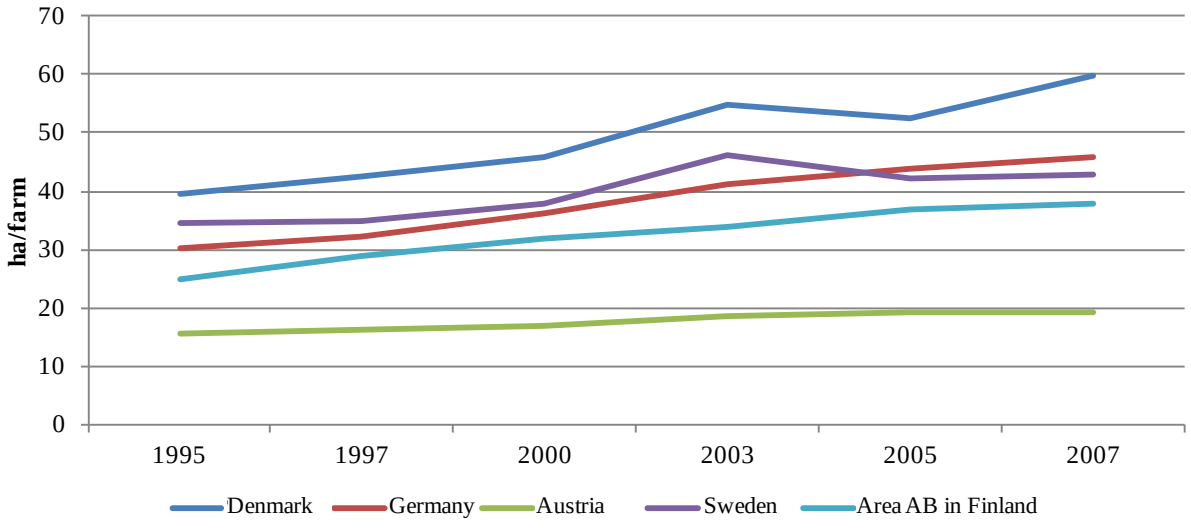


Figure 2.17. Average arable area of farms in certain EU countries and in area AB in Finland in 1995–2007. (Eurostat; Tike).

Dairy husbandry

The number of dairy farms has decreased rapidly in the whole EU. In area AB in Finland the number of dairy farms has fallen almost as rapidly as in the reference countries: about 62% of dairy farms in area AB quit production in 1995–2007 (Table 2.17). During the same period two-thirds of the dairy farms in Denmark, 60% in Sweden and about 45% in Austria gave up milk production. In the other EU countries the trend has not been quite as rapid, and in the EU-15 about 39% of the dairy farms quit production in1995–2007.

The average dairy herd size in area AB in Finland is much smaller than in Denmark, Sweden and Germany (Figure 2.18). In 2007 the average number of dairy cows on farms in area AB was 23. Of the reference countries the herd size was the largest in Denmark, with more than 100 dairy cows per farm. In Sweden the average dairy herd size was about 50 cows and in Germany it was 40. In Austria the average number of dairy cows per farm was much smaller, only 11 cows, and in Austria the structural development has been the slowest among the reference countries. The average size of dairy farms has grown the most in Denmark.

Table 2.17. Number of dairy farms in certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Country	1995	2000	2003	2005	2007	Change 1995–2007	Change %
Denmark	15 960	11 160	7 950	6 630	5 380	-10 580	-66,3 %
Sweden	17 640	13 960	9 720	8 550	7 100	-10 540	-59,8 %
Austria	90 080	77 470	65 130	54 580	49 450	-40 630	-45,1 %
Germany	-	152 650	121 820	110 370	101 070	-	-
EU-15	783 270	730 100	593 640	519 780	480 490	-302 780	-38,7 %
Area AB	7 934	5 533	4 355	3 752	3 037	-4 897	-61,7 %

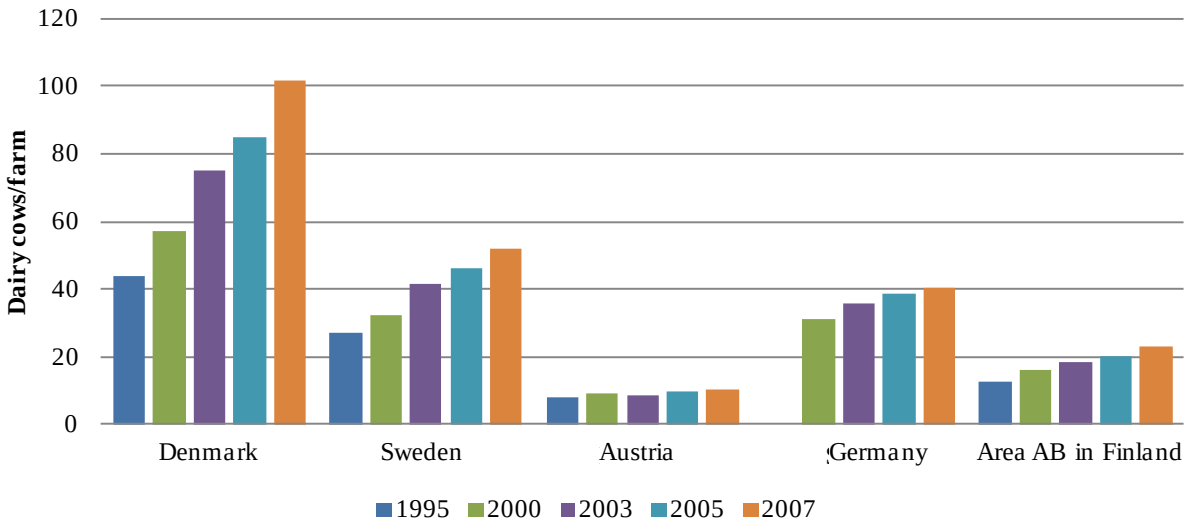


Figure 2.18. Average size of dairy farms (dairy cows/farm) in certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Proportionally the total number of dairy cows has decreased more rapidly in area AB in Finland than in the reference countries (Table 2.18). By 2011 the number of dairy cows in area AB had decreased by almost a quarter, while in Denmark and Germany the total number of dairy cows fell by less than 10% during the same period. In Austria the number of dairy cows decreased by about 12% in 2001–2011 and

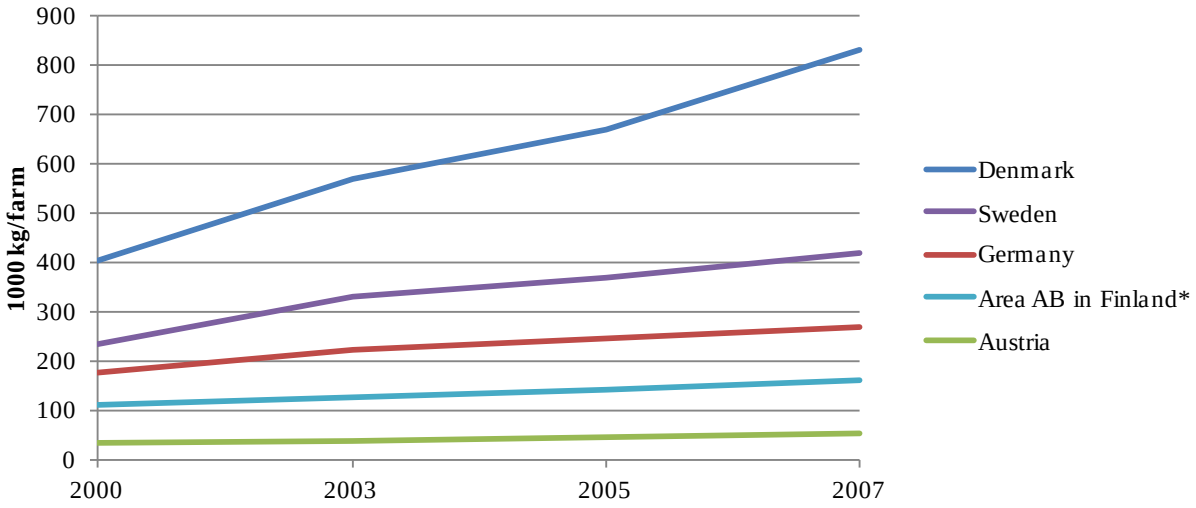
in Sweden the decrease was a little more than 18%, which is 6.5 percent point less than in area AB in Finland.

Table 2.18. Number of dairy cows (1000 animals) in certain EU countries and in area AB in Finland in 2001, 2003, 2005, 2007, 2009 and 2011 (Eurostat; Tike).

Country	2001	2003	2005	2007	2009	2011	Change 2001–2011	Change %
Denmark	628	589	558	551	574	579	-49	-7,8 %
Sweden	425	404	391	366	354	348	-78	-18,3 %
Austria	598	558	534	525	533	527	-71	-11,8 %
Germany	4 475	4 338	4 164	4 087	4 169	4 190	-285	-6,4 %
EU-15	20 002	19 258	18 375	17 892	17 692	-	-2 311*	-11,6 %*
Area AB	84	80	74	68	65	63	-21	-24,8 %

* Change 2001–2010

The average yield of dairy farms has grown both in the reference countries and in area AB in Finland (Figure 2.19). The growth has been the most rapid in Denmark, where the average yield per farm exceeded 800 000 tonnes in 2007. In Sweden the average yield of dairy farms has also increased more rapidly than in area AB in Finland, and in 2007 it was more than 250 00 tonnes higher than in area AB in Finland. The growth in the yield per farms in Germany has also been slightly more rapid than in Finland so that the difference in the average yield between area AB in Finland Germany grew by 40 000 tonnes during the period 2000–2007.



* Amount of milk delivered to dairies 1000 litres.

Figure 2.19. Average annual yield of dairy farms (tonnes) in certain EU countries and in area AB in Finland in 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Other cattle husbandry

The proportional decrease in the number of other cattle farms 1995–2007 was much more rapid in area AB in Finland than in, for example, Denmark and Sweden (Table 2.19). In area AB about half of the other cattle farms gave up production in 1995–2007, while during the same period about 28% of the other cattle farms in Denmark and about 30% in Sweden quit production. In Austria the trend in the number of other cattle farms has been quite the opposite to that in other countries as their number grew by 7% in 1995–2007. In the EU-15 about every fifth other cattle farm quit production during this period.

Table 2.19. Number of other cattle farms certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Country	1995	2000	2003	2005	2007	Change 1995–2007	Change %
Denmark	14 290	13 030	11 380	10 250	10 230	-4 060	-28,4 %
Sweden	24 080	20 020	18 190	17 630	16 780	-7 300	-30,3 %
Austria	25 500	23 190	22 290	27 490	27 280	1 780	7,0 %
Germany	-	85 310	74 730	73 000	68 620	-	-
EU-15	832 570	798 480	718 760	704 100	656 460	-176 110	-21,2 %
Area AB	2 377	1 538	1 370	1 245	1 180	-1 197	-50,4 %

Pig and poultry husbandry

The number of pig farms fell to a half in 1995–2007. The fall was almost equally rapid as in the EU-15 on average, where 47.5% of the pig farms quit production during the same period (Table 2.20). In Finland, however, the decrease in the number of pig farms has been somewhat slower than in Denmark, Sweden and Austria: in Sweden almost four out of five pig farms and in Denmark two out of three quit production during this period. In Austria about 57% of pig farms gave up production in 1995–2007.

Table 2.20. Number of pig farms in certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Country	1995	2000	2003	2005	2007	Change 1995–2007	Change %
Denmark	21 420	15 480	11 110	9 020	7 210	-14 210	-66,3 %
Sweden	10 650	6 020	3 680	2 790	2 290	-8 360	-78,5 %
Austria	106 430	82 200	61 000	52 350	45 490	-60 940	-57,3 %
Germany	-	141 450	102 170	88 680	79 420	-	-
EU-15	972 230	885 470	665 670	573 410	510 470	-461 760	-47,5 %
Area AB	2 841	2 273	1 915	1 623	1 403	-1 438	-50,6 %

In area AB in Finland the number of sows fell by about 15% in 2001–2011. In Sweden and Austria the number of sows decreased more than this, in Sweden by about 29% and in Austria by about 20% (Table 2.21). Instead, in Denmark the number of sows fell less than 10% and in Germany by about 13%. In the EU-15 the number of sows fell by only about 9%.

Table 2.21. Number of sows (1000 animals) in certain EU countries and in area AB in Finland in 2001, 2003, 2005, 2007, 2009 and 2011 (Eurostat; Tike).

Country	2001	2003	2005	2007	2009	2011	Change 2001–2011	Change %
Denmark	1 348	1 424	1 340	1 353	1 346	1 239	-109	-8,1 %
Sweden	214	204	192	175	159	152	-63	-29,2 %
Austria	339	326	308	311	288	270	-69	-20,4 %
Germany	2 523	2 564	2 504	2 418	2 236	2 194	-330	-13,1 %
EU-15	12 369	12 218	11 924	11 831	11 230	-	-1 139*	-9,2 %
Area AB	93	99	97	93	77	79	-14	-15,5 %

*Change 2001–2010

The number of poultry farms has decreased very strongly in many EU Member States since 1995 (Table 2.22). In Denmark more than half and in Germany and Sweden about a third of the poultry farms quit production in 2000–2007. In Austria and area AB in Finland a little over a quarter of the poultry farms quit production during this period.

Table 2.22. Number of poultry farms in certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Country	1995	2000	2003	2005	2007	Change 2000–2007	Change %
Denmark	9 720	6 750	4 240	3 600	3 210	-3 540	-52,4 %
Sweden	-	6 660	5 850	5 310	4 500	-2 160	-32,4 %
Austria	99 300	82 910	69 110	65 500	59 640	-23 270	-28,1 %
Germany	-	120 330	93 320	83 400	77 700	-42 630	-35,4 %
Area AB	-	745	634	593	541	-204	-27,4 %

The number of laying hens decreased in all reference countries in 1995–2007 (Table 2.23). In Denmark the number of laying hens decreased by about 31% and in Sweden and Austria the fall was about 10%. The trend in area AB in Finland has been the opposite to that in the reference countries as the number of laying hens increased by about 40% between 1995 and 2007.

Table 2.23. Number of laying hens (1000 animals) in certain EU countries and in area AB in Finland in 1995, 2000, 2003, 2005 and 2007 (Eurostat; Tike).

Country	1995	2000	2003	2005	2007	Change 1995–2007	Change %
Denmark	6 020	5 010	4 900	5 120	4 160	-1 860	-30,9 %
Sweden	7 900	7 850	6 010	6 760	7 080	-820	-10,4 %
Austria	7 730	6 630	6 050	5 730	6 700	-1 030	-13,3 %
Germany	-	58 330	55 690	50 500	51 430	-	-
Area AB	1 789	2 273	2 332	2 434	2 501	712	39,8 %

Horticulture

The numbers of horticulture enterprises are not recorded in the statistics as systematically as those in most agricultural production sectors. This is why the structural development of horticulture is presented using somewhat deficient time series, depending on the time when the structural statistics have been completed.

In Finland the average greenhouse area per enterprise was 0.25 ha, i.e. 2 500 m^2, in 2008 (Figure 2.20). The area is about the same in Norway 0.27 ha/enterprise, in Sweden it is a little larger, 0.34 ha, and in the Netherlands it is 1.50 ha. In the Netherlands the average size of greenhouse enterprises has also grown more rapidly than in the other countries.

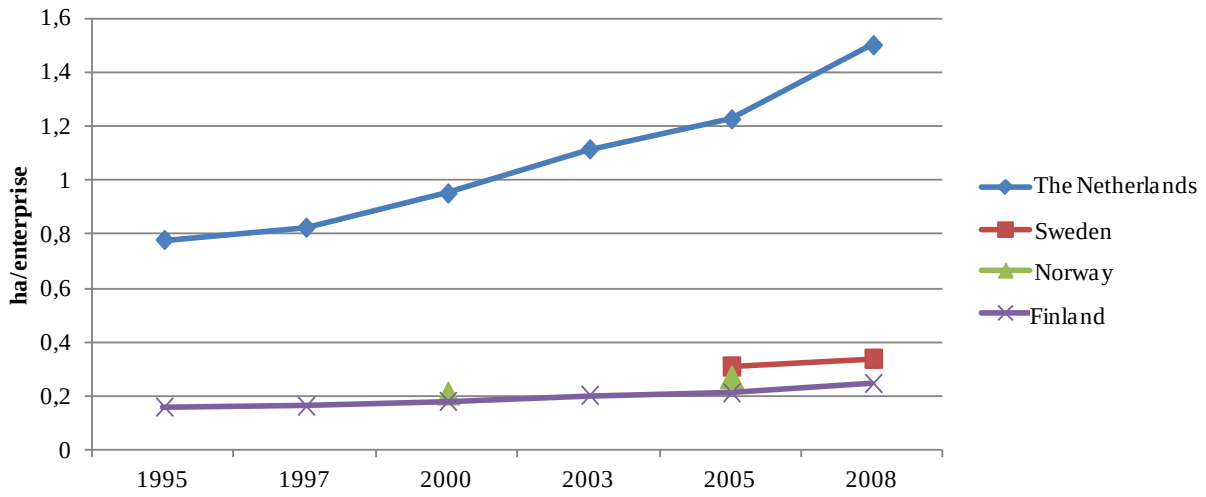


Figure 2.20. Average greenhouse area per enterprise in certain countries.

The number of greenhouse vegetable farms has decreased at about the same pace in Finland and Sweden, by about 40% between 1995 and 2008. In Norway the number of greenhouse vegetable farms has decreased less than in Finland, while in the Netherlands the volume of greenhouse production has fallen much more than in Finland and the number of greenhouse vegetable farms decreased by more than a half from 1995 until 2008 (Table 2.24).

In the Netherlands the average size of greenhouse vegetable enterprises has grown 2.5 fold from 1995 until 2008. In Finland the average size of greenhouse vegetable enterprises grew by 68%. In Finland and Norway the average size of greenhouse vegetable enterprises was almost the same in 2008, 0.27 ha, in Sweden it was a little larger, 0.39 ha and in the Netherlands it was 2.30 ha (Figure 2.21).

Table 2.24. Number of greenhouse vegetable enterprises in certain countries and in Finland in 1995, 1997, 2000, 2003, 2005 and 2008.

Country	1995	1997	2000	2003	2005	2008	Change 1995–2008	Change %
Netherlands	4 686	4 194	3 433	2 825	2 547	2 022	-2 664	-56,9 %
Sweden		517(1996)	462(1999)	429(2002)	351	309	-208	-40,2 %
Norway		358 (1998)			266(2006)		-92	-25,7 %
Finland	1 647	1 573	1 370	1 220	1 112	936	-711	-43,2 %

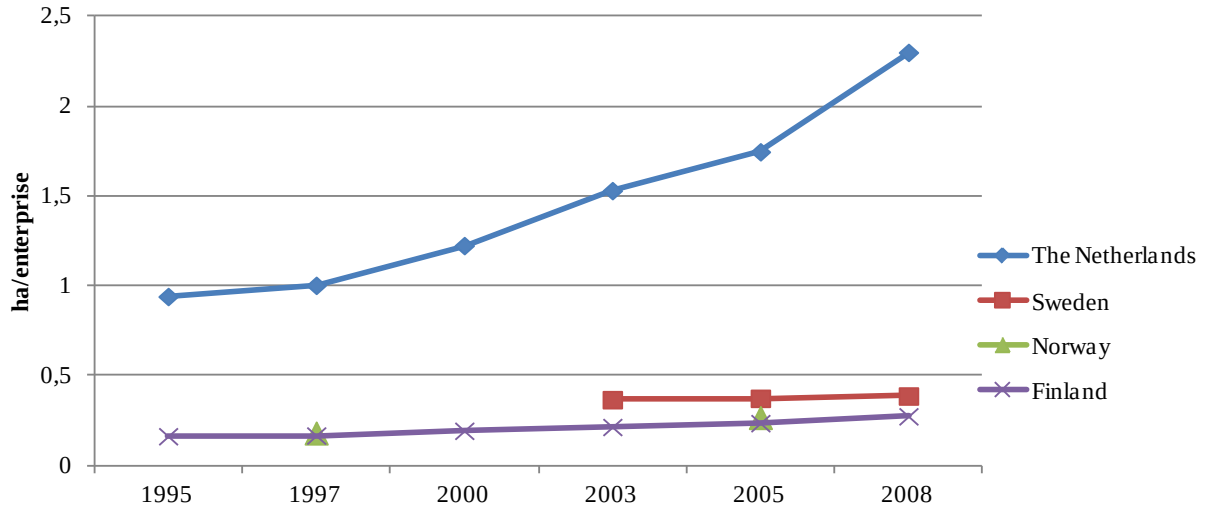


Figure 2.21. Average size of greenhouse vegetable enterprises in certain countries.

The intensity of greenhouse vegetable production between different countries can also be compared by looking at the average yields (Figure 2.22). In the Netherlands the average yields of both tomato and cucumber are higher than in the other countries.

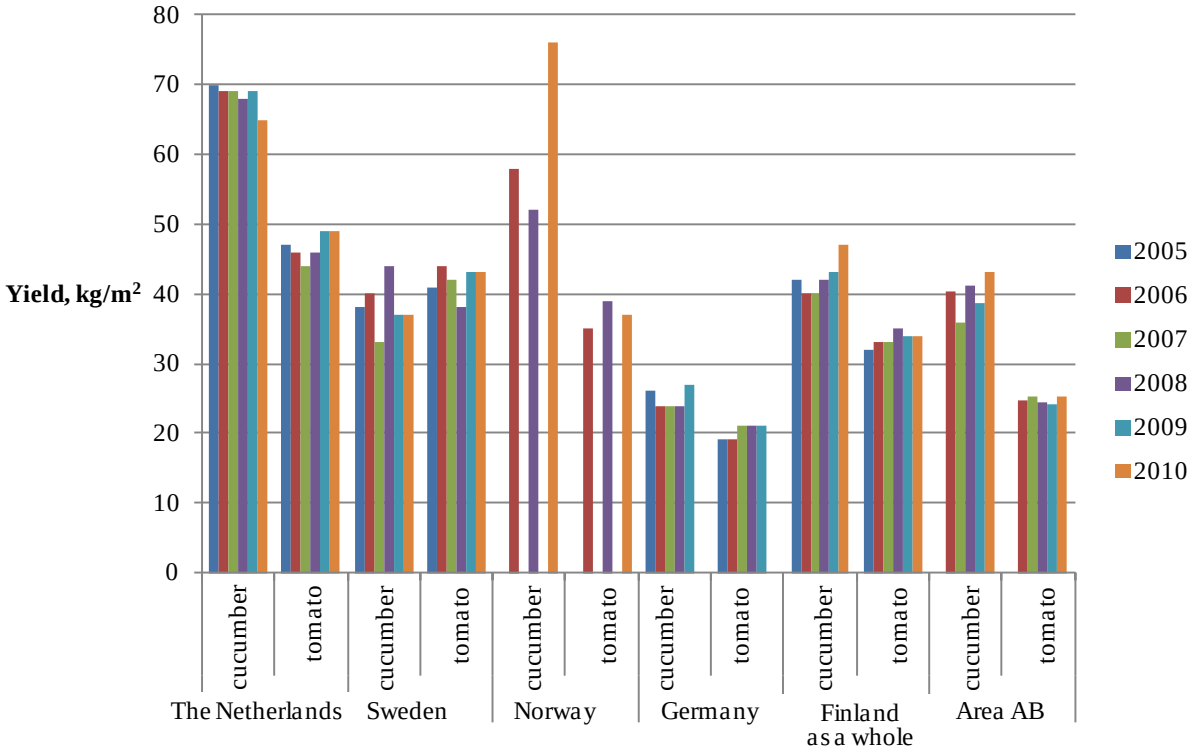


Figure 2.22. Trend in the average annual yield of greenhouse cucumber and tomato in certain countries, Finland as a whole and area AB in 2005–2010.

Enterprises producing ornamental plants are smaller in size than vegetable enterprises, both in Finland and in the Netherlands. In 2008 the average size of greenhouse enterprises producing ornamental plants in Finland was 0.22 ha and that in the Netherlands was 1.26 ha (Figure 2.23).

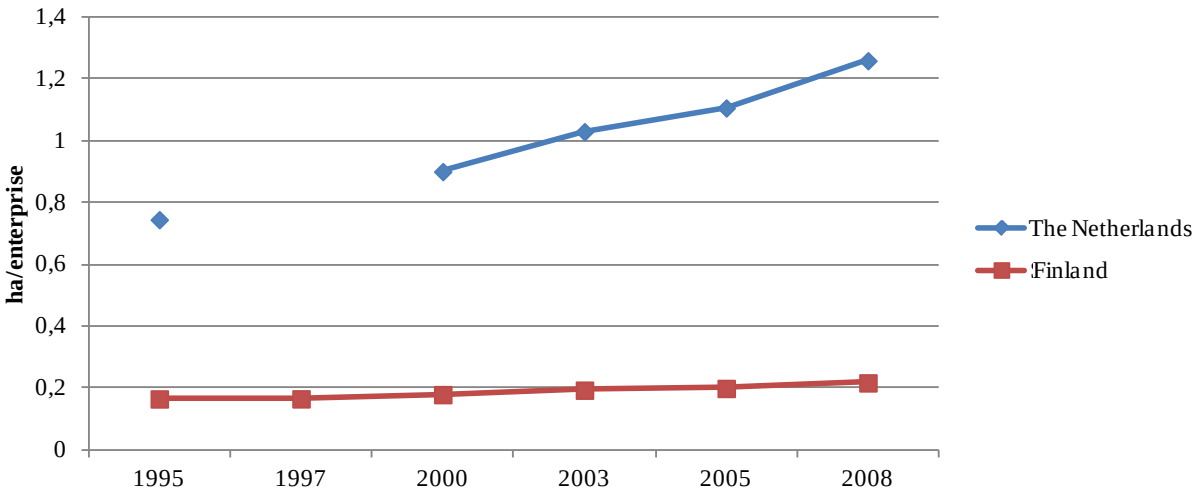


Figure 2.23. Average size of enterprises producing ornamental plants in Finland and the Netherlands.

The decrease in the number of producers of cut flowers under glass was been about the same in Finland and Sweden (Table 2.25). Between 1995 and 2008 their number fell by about two-thirds in both countries. In Norway the number of producers of cut flowers has decreased much less.

Table 2.25. Number of producers of cut flowers under glass in certain countries in 1995, 1997, 2000, 2003, 2005 and 2008.

Country	1995	1997	2000	2003	2005	2008	Change 1995–2008	Change %
Sweden			90(1999)	64(2002)	45	31	-59*	-65,6 %
Norway		197(1998)			120(2006)		-77**	-39,1 %
Finland	450	384	303	243	199	150	-300	-66,7 %

*1999–2008, **1998–2006

Among the reference countries the number of producers of flowering potted plants under glass decreased the most in Finland, where the number of these greenhouse enterprises fell by about 46% from 1995 until 2008. In Sweden the number of enterprises producing flowering potted plants decreased by less than 40% and in Norway their number decreased the least.

Table 2.26. Number of producers of flowering potted plants under glass in certain countries in 1995, 1997, 2000, 2003, 2005 and 2008.

Country	1995	1997	2000	2003	2005	2008	Change 1995–2008	Change %
Sweden			608(1999)	619(2002)	514	389	-219*	-36,0 %
Norway		445(1998)			349(2006)		-96**	-21,6 %
Finland	738	623	538	502	466	400	-338	-45,8 %

*1999–2008, **1998–2006

The number of farms producing vegetables in the open decreased less in Finland than in the Netherlands (Table 2.27). In the Netherlands their number fell by 70% and in Finland by 62% in 1995–2008. In Sweden the number of outdoor vegetable farms decreased much less than in Finland.

Table 2.27. Number of farms producing vegetables in the open in certain countries and in Finland in 1995, 1997, 2000, 2003, 2005 and 2008.

Country	1995	1997	2000	2003	2005	2008	Change 1995–2008	Change %
Netherlands	10 243		7 597	6 598	5 618	3 051	-7 192	-70,2 %
Sweden		1425 (1996)	1158(1999)	1045(2002)	987	901	-524*	-36,8 %
Norway			1680(1999)					
Finland	4 643	4 037	3 419	2 704	2 322	1 758	-2 885	-62,1 %

*1996–2008

2.4 Summary

In 2011 there were a total of 26 562 farms in area AB, which is 43% of all Finnish farms. Since 2006 the number of farms had fallen by about 11%. However, the utilised agricultural area has not decreased very much as the average arable area of the remaining farms continues to grow. In 2011 the average agricultural area in cultivation on farms in area AB was 40.4 ha, while in the whole country it was 37.4 ha.

The number of dairy farms delivering milk to dairies in area AB was 2 200 in 2011. About 21% of all Finnish dairy farms are in area AB. Since 2000 the number of dairy cows in area AB has fallen to a half, but milk production has fallen by only 15% as the average milk yield of dairy farms has grown. In 2011 the average annual milk yield per farm was more than 200 000 litres.

The number of other cattle farms in area AB was 1 015, which is about 27% of all other cattle farms in Finland. The number of cattle farms fell by about 15% between 2006 and 2011. Since 2006 beef production in area AB has fallen by about 10%, while in the whole country the decrease has been less than 3%.

In 2011 there were 969 pig farms in area AB, which is about half of all pig farms in Finland. In area AB the number of pig farms had decreased by about a third from 2006, and the number of sows in 2011 was more than 16% smaller than in 2006. During the same period the number of sows in the whole country decreased by 19%. In spite of this, pigmeat production has decreased more in area AB than in the whole country on average. In 2011 the amount of pigmeat produced in area AB was almost 7% smaller than in 2006, while in the whole country the production had fallen by 3%.

In 2011 the number of poultry farms in area AB was 436. Of the Finnish poultry farms about 62% are in area AB. From 2006 until 2011 the number of poultry farms had fallen by about 23%. Of the egg production in the whole country about three-fourths and about 61% of the production of broiler and turkey meat takes place in area AB. The production of broiler and turkey meat has grown in the area since 2006, in spite of the fall in 2009 caused by the global avian influenza epidemic. In 2006–2011 egg production in area AB grew by about 6%.

Of the total greenhouse area in Finland about 44% was located in area AB in 2011. In short-term cultivation the share of area AB was 47% and in long-term cultivation it was 43%. Greenhouse production area of greenhouses that produce for 2–7 months in area AB decreased by 19%, more than 97 000 square metres, and the area of greenhouses that produce over 7 months fell by 239 000 square metres, 17%, in 2006–2011. In total the greenhouse production area in area AB decreased by about 17% in 2006–2011.

Despite the quite rapid structural development of agriculture in area AB, the average farm size in the area is still small compared to many other EU countries. The number of farms has fallen more rapidly in area AB in Finland than in the EU-15 on average. However, the trend in the number of farms in area AB does not differ very much from that in Denmark and Germany. Instead, in Sweden and Austria, which joined the EU at the same time as Finland in 1995, the number of farms has decreased more slowly than in area AB in Finland.

The decrease in number of dairy farms has been almost equally rapid in the reference countries as in area AB in Finland, while the number of other cattle farms has decreased more in area AB than in Denmark and Sweden. The trend in the number of pig farms in area AB is close to the average of the EU-15. Proportionally the decrease in number of greenhouse enterprises has been about the same in Finland and Sweden, while in the Netherlands the number of enterprises has decreased more than in Finland. The decrease in the number of farms producing vegetables in the open has been slower in Finland than in the Netherlands but more rapid than in our neighbouring country Sweden.

3 Price, income and profitability development of agriculture in area AB

The decrease in the production volumes of agricultural products in southern Finland (see Chapter 2) means that the growth in the average size of farms and the consequent increase in the production volumes per farm have not been enough to compensate for the decrease in the production caused by the decrease in the number of farms. It is possible to maintain the total return of agriculture at the same level as earlier in spite of the decrease in the volumes, provided that the trend in the product prices has been favourable.

3.1 Producer and input prices

In the first years of the period 2000–2010 the prices of livestock products stayed about the same, but towards the end of the period they started to rise. The producer prices of spring cereals fell until 2005, rose to peak levels in 2007 and 2008, fell to the earlier level in 2009, but in 2010 and 2011 again rose to the same level as in 2008.

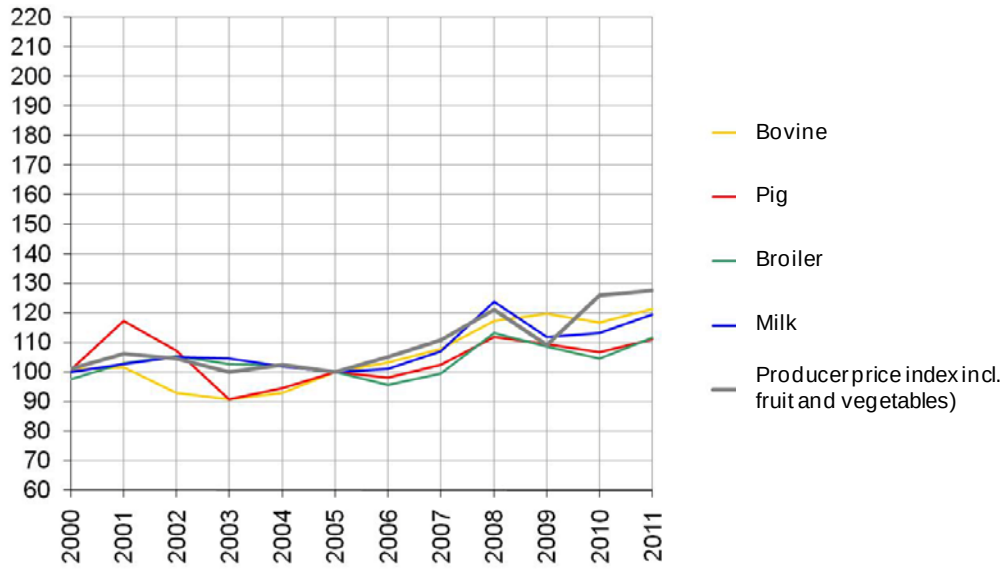


Figure 3.1. Trends in the producer prices of livestock products in 2000–2011. (Year 2005=100) (Statistics Finland)

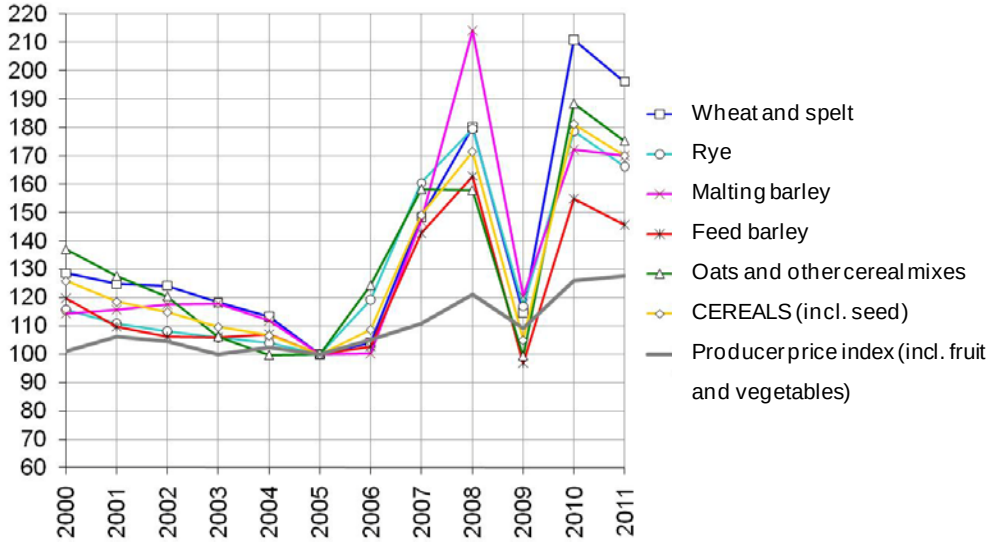


Figure 3.2. Trend in the producer prices of cereals in 2000–2011. (Year 2005=100) (Statistics Finland).

The prices of the production inputs of agriculture rose quite steadily until 2007, and the rising trend has continued since then, but with strong variations especially in the prices of fertilisers and fuel. Towards the end of the period the rise in the prices of production inputs corresponded quite closely to the rise in the livestock product prices, but the rise in the input prices was slower than that of the prices of plant products.

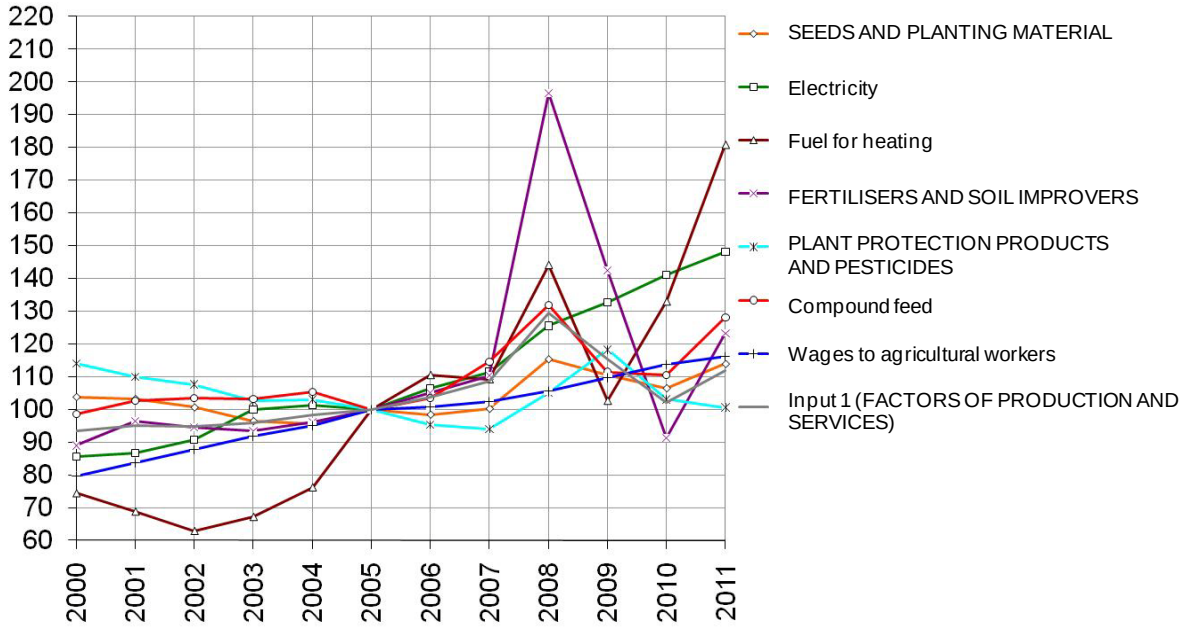


Figure 3.3. Trend in the production input prices of agriculture in 2000–2011. (Year 2005=100) (Statistics Finland). The trend in fertiliser prices until 2009 is based on data of Tike and after that on an index calculated from the prices of each year.

Study of the transmission of prices from the other EU Member States to the Finnish market gives indications of how well the Finnish markets have integrated into the internal market of the EU in agricultural product trade. This also gives us proof of how the Finnish agricultural market has adapted to the difficulties for the agriculture sector caused by the accession to the EU. Perfectly functioning market would require that the price changes would be transmitted without delay between the different countries operating on the EU market.

Because of the small size of the country Finland has to adapt to the price changes on the EU market, which means that any actions taken by Finland and production volumes here have no impact on the mar-

ket prices on the EU's internal market. In order for the Finnish market to be fully integrated into the EU market, the transmission of prices from the other EU Member States should take place without delay. Studies have shown, however, that there is a delay in the changes of agricultural product prices to be transmitted to Finland. Liu (2011) studied the transmission of pigmeat and beef prices from the Danish and German markets to Finland. The changes in pigmeat prices were transmitted from Germany to the Finnish market, but for beef such transmission did not seem to take place. No connection was also observed between the Danish and Finnish beef market, but the price changes on the pigmeat market were transmitted from Denmark to Finland. Liu (2011) also points out that the transmission of prices from Germany and Denmark to the Finnish market was slow compared to the transmission of prices between the Danish and German markets

Liu (2008) examined the integration of the Finnish broiler meat market into the markets of different EU Member States. Liu found no significant impact of the EU markets on the Finnish, quite stable market. As reasons for this Liu suggest the high degree of self-sufficiency and strict quality standards set for the products in Finland.

Trends in agricultural product prices in reference countries

Figures 3a–3f in Annex 3 present the trend in the price index of agricultural products in Finland and certain reference countries in 2005–2011. The nominal price level of cereals in Finland was below the average in EU-27 as well as that of the reference countries during the whole period. The trends in wheat and barley prices show that there was a delay in the transmission of the rise in cereal prices to the Finnish market. At no point does the price level in Finland reach that in the other parts of Europe. Instead, when the price fall on the EU market a similar decrease takes place in Finland quite rapidly from the already lower price level. The nominal prices of beef, pigmeat and poultry meat have been more stable in Finland than in the EU-27 on average and in the reference countries. The price level of beef and pigmeat does not differ markedly from the price level in the reference countries. In 2009 the milk prices did not fall as much in Finland as they did in the reference countries. Instead, the price of poultry meat Finland was below the price level in Denmark, Germany and Sweden.

Figure 3.4 presents the variation in the producer price index of agriculture in the EU-27 and the reference countries in 2005–2011. During this period the producer prices were the highest in 2008 and 2011. The prices in Finland have followed quite closely the trend in the other EU countries. In Sweden the nominal producer price was higher than the price level in Finland in almost all years, but the Finnish producer prices have been quite close to the trend in the average producer prices in the EU-27. In several years the producer price level was the lowest in Denmark.

Figure 3.4. Producer price index of agriculture in Finland, EU-27 and the reference countries in 2005–2011 (Year 2005=100) (Eurostat).

The trend in the price index of the production inputs of agriculture in different EU countries in 2005–2011 is shown in Figure 3.5. During this period the input price index of agriculture was the highest in 2008 and 2011. The input price index in Finland does not differ markedly from the price indices in the other EU countries. In 2009, however, the input price index was below the EU average. Among the reference countries the nominal prices in 2005–2011 were the highest in Estonia. The rise in the input prices stopped in 2009 and the prices started to fall, but since 2010 the input prices have again been rising.

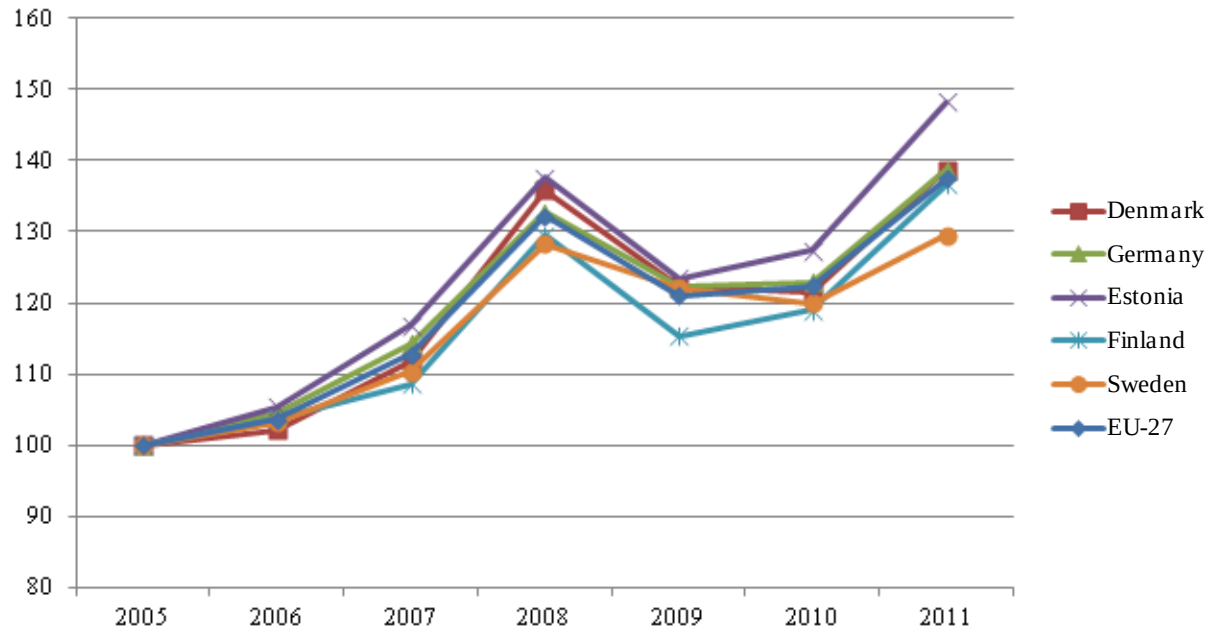


Figure 3.5. Input price index of agriculture in Finland, EU-27 and in the reference countries in 2005–2011 (Year 2005=100) (Eurostat).

3.2 Productivity

Weakening price relations between the product and input prices reduce the profitability of farms, which may try to compensate for the weaker profitability by improving the productivity of agriculture. The trend in the productivity of agriculture is examined on the basis of bookkeeping/FADN -data of Agrifood Research Finland MTT. In 2010 there were a total of 405 profitability bookkeeping farms which exceeded the limit for the minimum economic size, standard output of 8 000 euros, in area AB. Their results have been weighted by production sectors types and economic size classes to reflect the results of all the 18 570 farms in area AB. As regards the production types, the focus is on sectors which receive significant amounts of national income aid under Article 141. The classification into production sectors has been made using the farm size classes based on the standard output (SO).

The relationship between the outputs and the inputs used for producing them, i.e. productivity, improves if a certain amount of input yields a higher output or a certain output level can be achieved by less input. The trend in the productivity has been studied using the Divisia index method, with about 90 individual product and 90 input groups taken into account in the calculation. The groups of inputs comprise all cost items of business activity. The results have been calculated from average values weighted by production types.

The productivity of agriculture in area AB has improved markedly during the 2000s. In 2000– 2010 the productivity of pig farms rose, on average, by 2.7% a year. The productivity grew the most in the early part of the period. On dairy farms the annual growth in productivity in 2000–2010 was about 4.5%. However, on farms which continued their production all through the period and invested strongly in the production the trend in productivity was not quite as favourable.

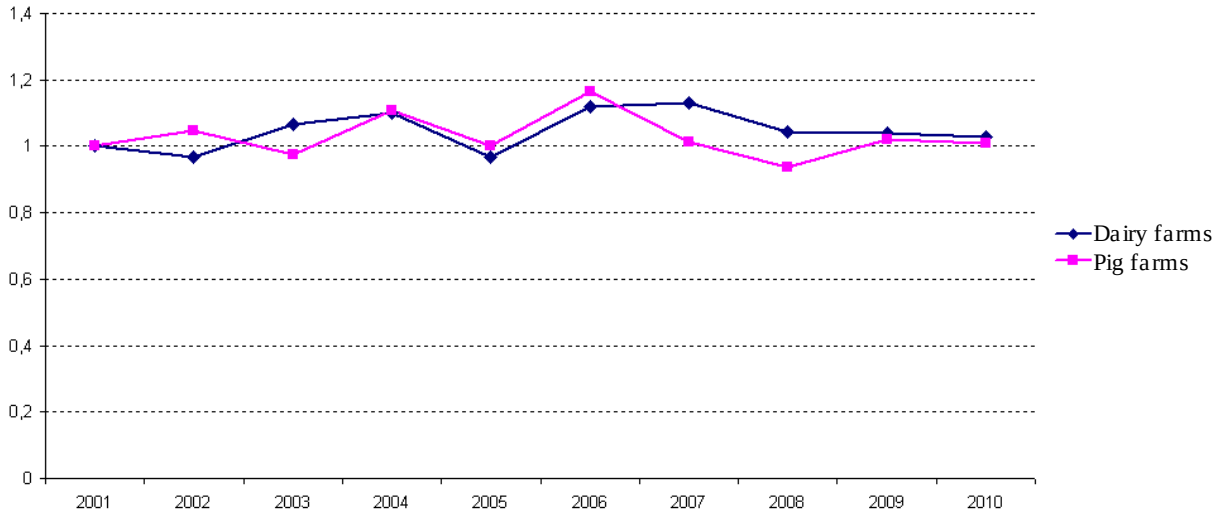


Figure 3.6. Trend in the productivity of dairy and pig farms in area AB in 2001–2010. 2001=1. (Profitability bookkeeping / FADN -data, productivity calculation of MTT's EconomyDoctor).

3.3 Returns, costs and profitability

According to the weighted results of the bookkeeping farms, the arable area of livestock farms has grown by 40% and the number of livestock units by 75%.

Table 3.7. Arable area of livestock farms in southern Finland (MTT bookkeeping/FADN data).

Arable area	2000	2007	2008	2009	2010	2011E	2012E
Dairy farms	38	51	53	53	58	59	63
Cattle farms	44	57	49	58	54	56	57
Pig husbandry	52	63	68	72	77	79	81
Poultry husbandry	58	38	34	45	49	52	51
Average	43	54	54	57	60	61	64

Table 3.8. Number of livestock units on livestock farms in southern Finland (MTT Profitability bookkeeping / FADN -data).

Livestock units	2000	2007	2008	2009	2010	2011E	2012E
Dairy farms	28	41	43	42	46	47	52
Cattle farms	35	49	46	46	43	44	46
Pig husbandry	91	152	186	200	220	228	236
Poultry husbandry	122	208	226	212	230	264	271
Average	46	69	77	75	80	84	86

Now the question is whether the positive development in the productivity and structure of agriculture have been enough to compensate for the impact of the weakening price relations on the results and profitability of farms.

The structural development of horticulture and livestock farms has been strong and the total return of farms has risen from one year to another also as a result of the growth in the size of enterprises. In the accounting year 2010 the total return of these production sectors that received significant amounts of aid under Article 141 was 205 000 euros. This comprises the market returns, income aid, value of products used on the farm, changes in stocks and investment subsidies allocated to the years of service. Of the total return about 70% is market return and 30% is comprised of EU support payments and national aid.

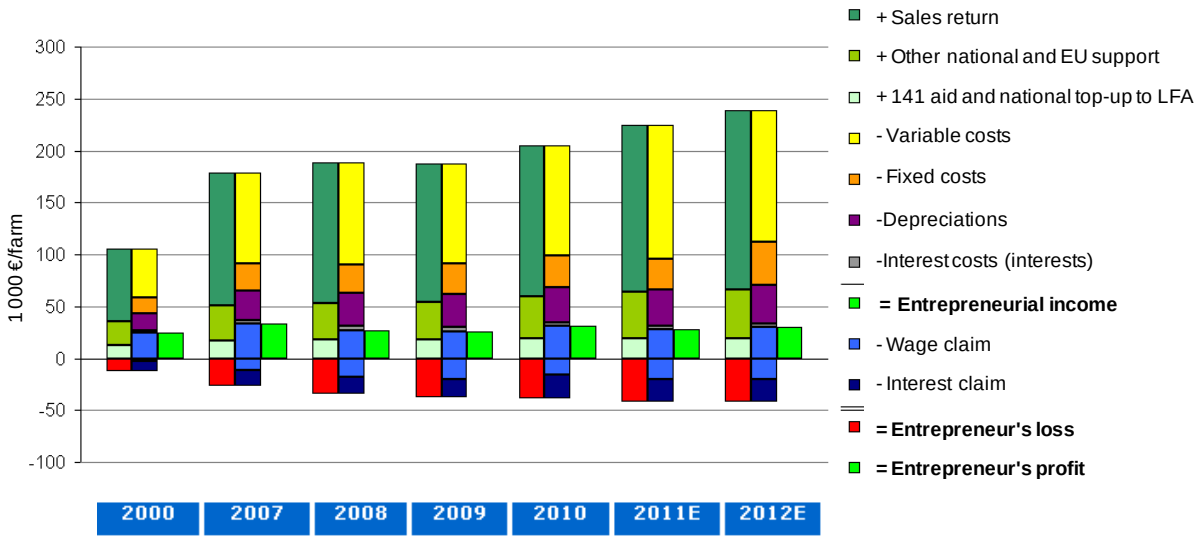


Figure 3.10. Average returns and costs of dairy, cattle, pig and poultry farms, enterprises producing vegetables in the open and greenhouse enterprises in area AB in 2000 and 2007–2012e (Profitability bookkeeping / FADN -data).

In spite of the growth in the economic size, the entrepreneurial income of horticulture and livestock farms has not risen during the period covered but it has stayed at the level of about 25 000 euros. Of the entrepreneurial income about 60–70% is comprised of the national income aid under Article 141 and the closely related national top-ups to the natural handicap payment (LFA). In 2010 the share of the income and under Article 141 alone was 45%, which means that the entrepreneurial income of farmers in the area would be cut by about a half if the income aid under Article 141 were to be abolished. Any cuts in the aid would thus considerably weaken the result and profitability of farms in the area.

When the wage claim of the farm family and the interest claim on equity are deducted from the entrepreneurial income, we arrive at the entrepreneur's profit. In each year of the period covered the entrepreneur's profit has been negative, meaning that the total return has not covered the production costs. The annual losses have been in the order of 40 000 euros.

Table 3.9. Economic result of agriculture on bookkeeping farms in area AB on average in 2000 and 2007–2012e (MTT profitability bookkeeping, EconomyDoctor analysis service).

Economic results	Area A *Area B Greenhouses *Outdoor vegetables *Dairy farms *Cattle farms *Sheep, goats and other grazing cattle *Pig husbandry *Poultry husbandry						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	10 900	7 500	6 900	6 350	6 200	5 990	5 630
Arable area	39,8	47,7	47,7	49,3	51	51,4	53
Livestock units	39,9	57	63	61,6	65,1	66,8	68,3
Aid under Article 141	12 100	13 200	14 100	13 800	14 100	14 200	13 700
National top-ups to LFA	0	4 140	4 170	4 470	4 500	4 740	4 900
Total return	**105 200**	**178 200**	**188 300**	**187 200**	**204 800**	**224 600**	**239 100**
Share of aid under Art 141 of total return %	12	7	7	7	7	6	6
Share of top-ups to LFA of total return %	0	2	2	2	2	2	2
Entrepreneurial income	**24 100**	**33 100**	**27 200**	**25 700**	**31 000**	**27 400**	**30 000**
Share of aid under Art 141 of entrepreneurial income %	50	40	52	54	45	52	46
Share of top-ups to LFA of entrepreneurial income %	0	13	15	17	14	17	16
Entrepreneur's profit	-12 900	-27 100	-35 000	-38 100	-39 400	-41 700	-42 500
Profitability ratio	**0,65**	**0,55**	**0,44**	**0,4**	**0,44**	**0,4**	**0,41**

The profitability ratio is calculated by dividing the entrepreneurial income by the sum of the wage and interest claims. In the accounting year 2010 the profitability ratio was 0.44, which shows that the farmer received 44% of the wages paid to an agricultural worker as compensation for own labour and the same 44% of the target interest of 6.3% set for equity. On farms in area AB the trend in the profitability ratio has been decreasing in the 2000s. The study shows that even if about 70% of the entrepreneurial income is now covered by the income aid under Article 141 and national top-ups to the natural handicap payment, the entrepreneurial income still remains very low relative to the costs of the labour input and equity of the farm family.

3.4 Development of economic result and profitability by production sector

3.4.1 Dairy farms

Structural change has been strong on dairy farms, resulting in growth in the total return and entrepreneurial income on these farms. However, relative to the total return the entrepreneurial income has decreased. The national income aid under Article 141 and top-ups to the LFA payment have represented about 30% of the entrepreneurial income and the share of aid under Article 141 alone has been about 20%. When the costs of own labour and equity are also taken into account, the entrepreneur's profit was negative, about -35 000 euros, during the whole period. The total return was not high enough to cover the production costs.

Of all dairy farms in area AB about 60% have quit production since 2000, but the consequent structural development and increase in the economic size of farms has not turned the profitability trend into a rise and the profitability ratio stayed at about 0.5–0.6 all through the past decade.

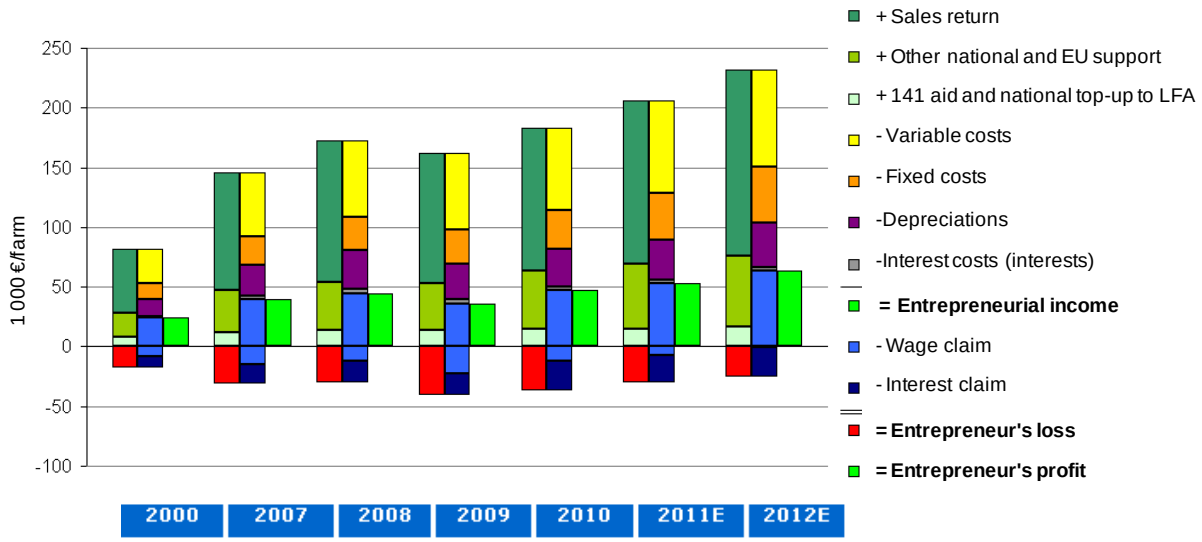


Figure 3.11. Returns and costs on dairy farms in area AB in 2000 and 2007–2012e (MTT Profitability bookkeeping / FADN -data).

Table 3.10. Economic result and profitability on dairy farms in area AB (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Economic results	Area A * Area B, Dairy farms						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	4 690	2 630	2 400	2 260	2 040	1 870	1 700
Arable area	37,6	50,5	53,5	53,4	58,1	59,1	63,3
Livestock units	27,6	40,5	43,1	41,9	45,6	47	51,6
Aid under Article 141	8 140	7 090	9 060	8 850	8 810	9 230	10 100
National top-ups to LFA	0	4 730	5 000	5 070	5 530	5 750	6 150
Total return	**81 300**	**145 800**	**172 500**	**161 600**	**182 600**	**205 600**	**231 600**
Share of aid under Art 141 of total return %	10	5	5	5	5	4	4
Share of top-ups to LFA of total return %	0	3	3	3	3	3	3
Entrepreneurial income	**24 100**	**40 000**	**44 800**	**36 200**	**47 300**	**53 200**	**63 900**
Share of aid under Art 141 of entrepreneurial income %	34	18	20	24	19	17	16
Share of top-ups to LFA of entrepreneurial income %	0	12	11	14	12	11	10
Entrepreneur's profit	-17 700	-30 700	-29 700	-41 000	-36 600	-30 200	-25 500
Profitability ratio	**0,58**	**0,57**	**0,6**	**0,47**	**0,56**	**0,64**	**0,71**

3.4.2 Cattle farms

Cattle farms include farms engaged in suckler cow production, farms producing beef, and combinations of the two. Structural development has been strong in these sectors as well, resulting in an increase in the total return and entrepreneurial income. In 2008 and 2009 the entrepreneurial income was comprised in full of the aid under Article 141 and national top-ups to the LFA payments. The share of the aid under Article 141 alone varied between 40 and 70%during the period covered. When the costs of own labour and equity are also taken into account the annual entrepreneur's profit was negative, about -40 000 euros a year. The total return was not high enough to cover the production costs. In recent years the profitability ratio has varied at the level of 0.3–0.4.

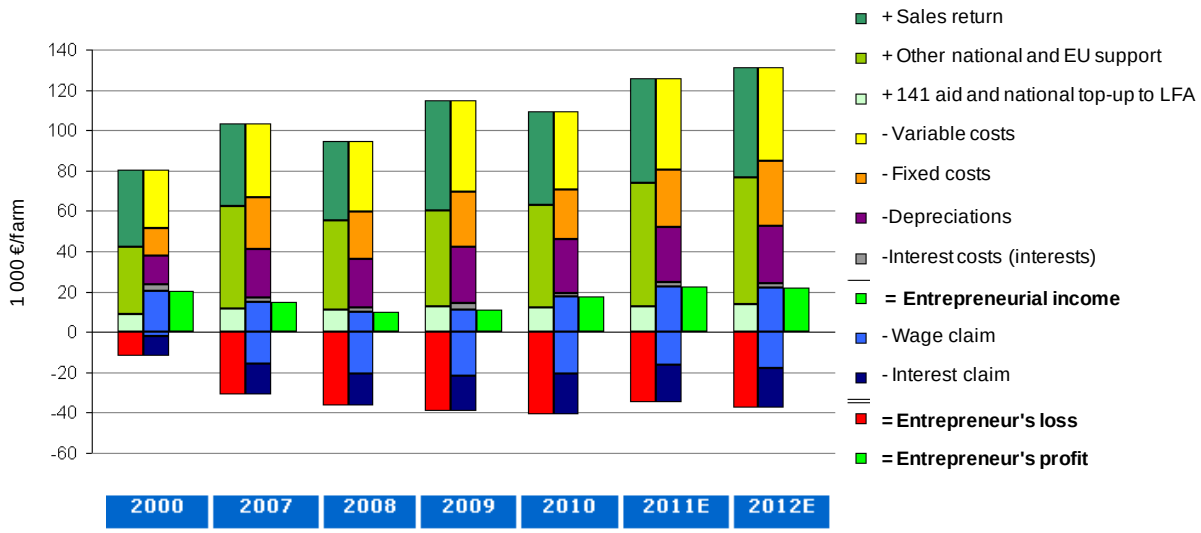


Figure 3.12. Returns and costs on cattle farms in area AB in 2000 and 2007–-2012e (MTT Profitability bookkeeping / FADN -data).

Table 3.11. Economic result and profitability on cattle farms in area AB (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Economic results	Area A * Area B Cattle farms						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	1 790	1 170	1 120	1 050	1 140	1 120	1 040
Arable area	43,6	56,5	49	57,7	54,1	55,5	57,5
Livestock units	35,3	48,6	46,2	45,7	43,1	44,3	45,8
Aid under Article 141	9 080	6 220	6 940	7 570	7 430	7 660	8 200
National top-ups to LFA	0	5 120	4 340	5 260	4 430	5 210	5 400
Total return	**80 400**	**103 400**	**94 700**	**114 700**	**109 200**	**125 900**	**131 100**
Share of aid under Art 141 of total return %	11	6	7	7	7	6	6
Share of top-ups to LFA of total return %	0	5	5	5	4	4	4
Entrepreneurial income	**20 500**	**15 100**	**10 000**	**11 000**	**17 400**	**22 600**	**22 000**
Share of aid under Art 141 of entrepreneurial income %	44	41	69	69	43	34	37
Share of top-ups to LFA of entrepreneurial income %	0	34	43	48	25	23	25
Entrepreneur's profit	-11 700	-31 000	-36 300	-39 200	-41 000	-35 000	-37 500
Profitability ratio	**0,64**	**0,33**	**0,22**	**0,22**	**0,3**	**0,39**	**0,37**
	44	75	113	117	68	57	62

3.4.3 Pig farms

Pig farms comprise piglet production farms, pork production farms and combined pig production farms. On these farms, too, the strong structural development has led to a steady increase in the total return from one year to another. In the period covered the share of the income aid under Article 141 and national top-ups to the LFA payment decreased from about 12% in 2007 to about 9% in 2011. At the same time the entrepreneurial income of pig farms has fallen and in 2011 it may collapse to an estimated 5,000 euros, which means that the entrepreneurial income would be comprised of support payments alone. When the costs of own labour and equity are also taken into account, the entrepreneur's profit would fall to -70,000, meaning heavy losses from the production. According to the forecast for 2011, the profitability ratio would be 0.06.

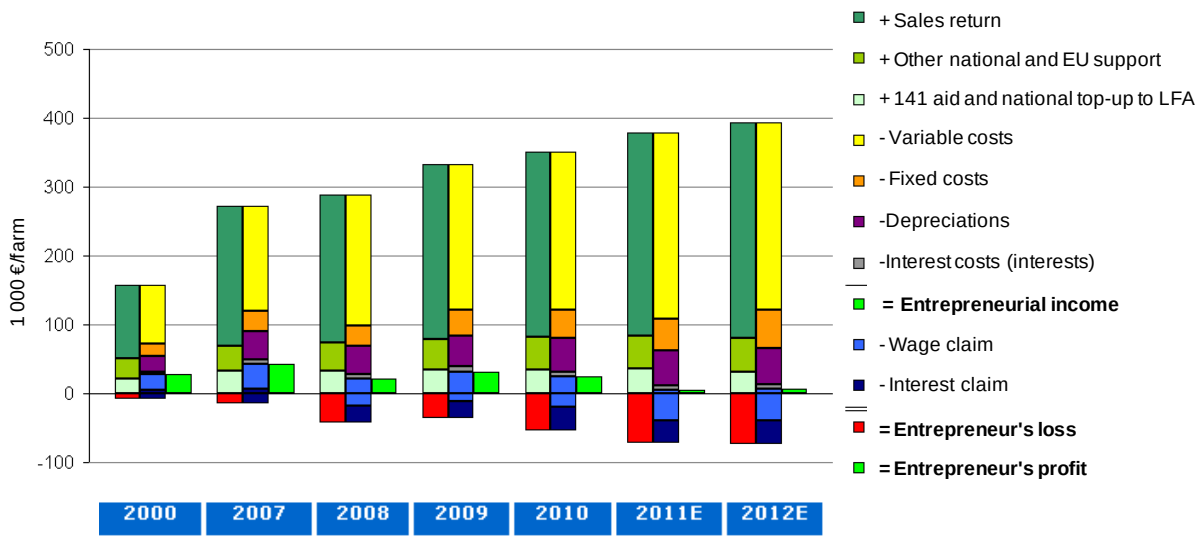


Figure 3.13. Returns and costs on pig farms in area AB in 2000 and 2007–-2012e (MTT Profitability bookkeeping / FADN -data).

In 2013 the decoupled support for pig and poultry husbandry at the total level decreases by about 37%, which means that both the entrepreneurial income and the profitability ratio indicating relative profitability are going to be negative. Of the pig farms in area AB 67% quit production between 2000 and 2011.

Table 3.12. Economic result and profitability on pig in area AB (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Economic results	Area A * Area B Pig husbandry						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	1 810	910	810	690	660	600	510
Arable area	52,3	63,3	67,6	72	77,1	78,9	80,5
Livestock units	90,9	152,4	185,9	200,2	219,6	228	235,6
Aid under Article 141	21 700	26 700	26 700	26 700	27 500	28 100	23 600
National top-ups to LFA	0	5 940	6 480	6 970	7 460	7 680	7 850
Total return	**157 400**	**271 700**	**288 600**	**332 100**	**351 000**	**379 000**	**393 200**
Share of aid under Art 141 of total return %	14	10	9	8	8	7	6
Share of top-ups to LFA of total return %	0	2	2	2	2	2	2
Entrepreneurial income	**27 300**	**42 900**	**20 800**	**31 200**	**24 100**	**4 630**	**6 360**
Share of aid under Art 141 of entrepreneurial income %	79	62	128	86	114	607	371
Share of top-ups to LFA of entrepreneurial income %	0	14	31	22	31	166	123
Entrepreneur's profit	-8 560	-15 500	-42 700	-35 700	-54 700	-72 600	-73 200
Profitability ratio	**0,76**	**0,73**	**0,33**	**0,47**	**0,31**	**0,06**	**0,08**

3.4.4 Poultry farms

Poultry farms comprise broiler farms, egg producing farms and farms engaged in both broiler and egg production. The total return of poultry farms has been growing but there are considerable variations between the years, partly due to the small number of farms. In 2008 the entrepreneurial income turned negative, while in 2010 a positive income of about 40 000 euros was reached. At that time, too, 87% of the entrepreneurial income was income aid under Article 141 and national top-ups to the LFA payment. The share of income aid under Article 141 alone was 75%. When the costs of own labour and equity are also taken into account, the entrepreneur's profit will be as low as -30,000 euros in 2012.

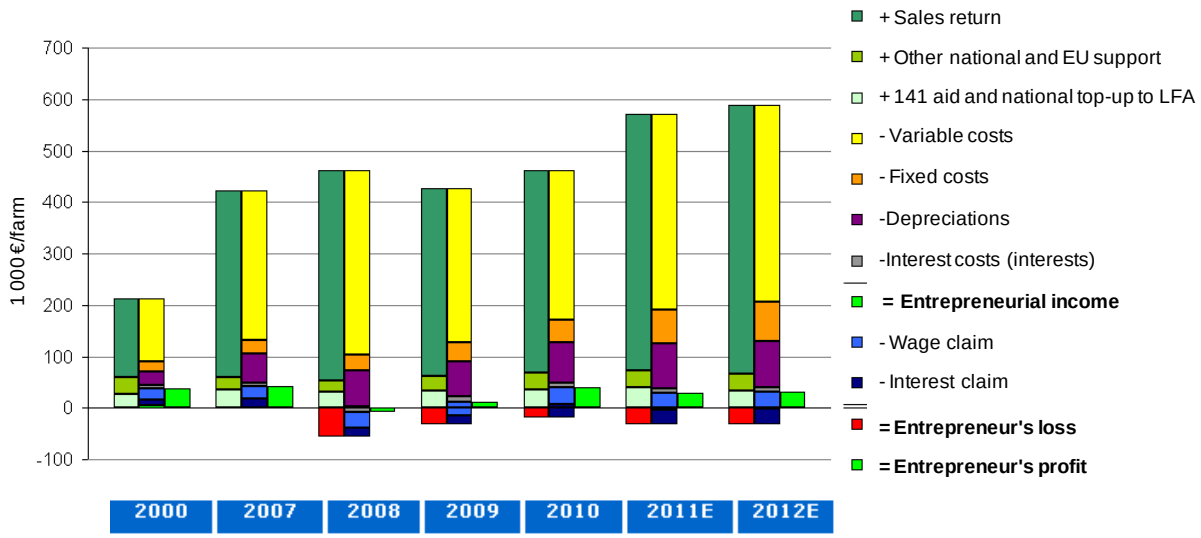


Figure 3.14. Returns and costs on poultry farms in area AB in 2000 and 2007–2012e (MTT Profitability bookkeeping / FADN -data).

The cuts in the decoupled support for pig and poultry husbandry in 2013 are going to reduce the average entrepreneurial income of the farms by an additional 30% from the level of 2011–2012. The profitability ratio would fall to about 0.35 from the estimated level of 0.5 in the preceding years.

Table 3.13. Economic result and profitability on poultry farms in area AB (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Economic results	Area A * Area B						
	Poultry husbandry						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	500	290	170	140	140	140	130
Arable area	58,2	37,6	34,1	44,6	49,3	51,6	51,3
Livestock units	121,6	208,4	225,9	211,8	229,7	264,1	270,6
Aid under Article 141	26 200	31 500	28 000	29 400	30 000	34 000	28 400
National top-ups to LFA	0	3 330	3 230	4 280	4 750	5 220	5 200
Total return	**213 500**	**421 400**	**462 000**	**426 200**	**461 500**	**570 700**	**589 500**
Share of aid under Art 141 of total return %	12	7	6	7	6	6	5
Share of top-ups to LFA of total return %	0	1	1	1	1	1	1
Entrepreneurial income	**38 600**	**42 500**	**-8 850**	**11 500**	**40 000**	**28 200**	**31 700**
Share of aid under Art 141 of entrepreneurial income %	68	74	-316	256	75	121	90
Share of top-ups to LFA of entrepreneurial income %	0	8	-36	37	12	19	16
Entrepreneur's profit	4 290	-1 190	-56 300	-32 600	-19 200	-32 700	-31 600
Profitability ratio	**1,13**	**0,97**	**-0,19**	**0,26**	**0,68**	**0,46**	**0,5**

3.4.5 Greenhouse production

Most of the farms classified as greenhouse enterprises by their main production sector grow greenhouse vegetables and flowers. The annual share of national income aid under Article 141 has been around 12%. Entrepreneurial income has, however, consisted solely of the national income aid under Article 141. In 2011 and 2012 the entrepreneurial income is forecast to turn negative, mainly due to the growth in variable costs (e.g. energy). This means that, besides the costs of own labour and equity, the interest costs and part of the depreciation costs will also not be covered. When the costs of own labour and equity are taken into account, the entrepreneur's profit falls to about -80 000 euros. The profitability ratio would also be negative, -0.4.

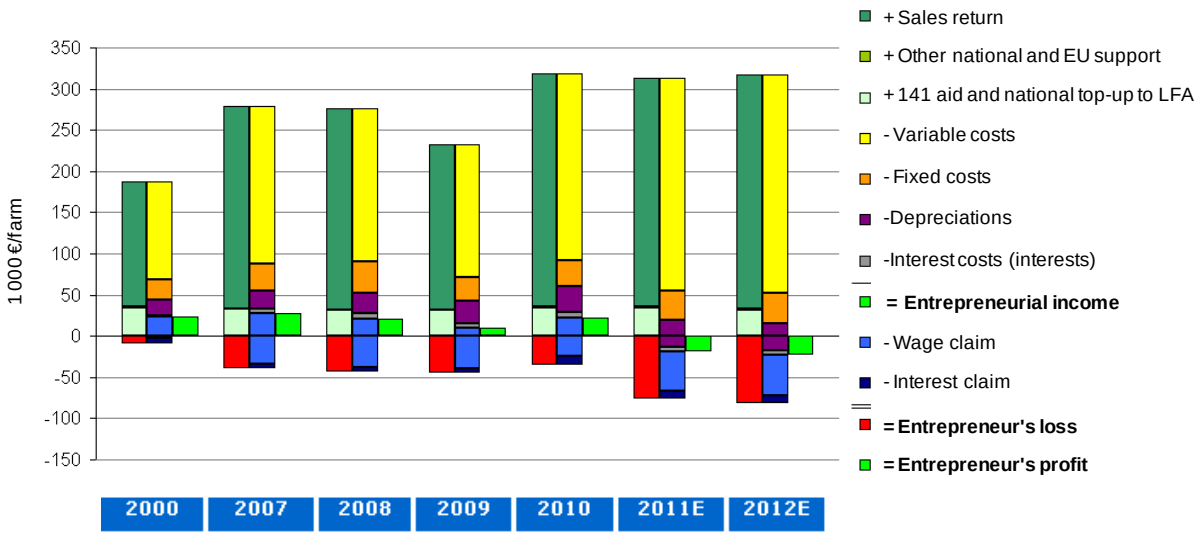


Figure 3.15. Returns and costs of greenhouse enterprises in area AB in 2000 and 2007–2012e (MTT Profitability bookkeeping / FADN -data).

Table 3.14. Economic result and profitability of greenhouse enterprises in area AB (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Economic results	Area A * Area B Greenhouses						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	410	620	600	580	530	530	530
Arable area	0,6	0,8	0,7	0,5	0,4	0,4	0,4
Livestock units	0	0	0	0	0	0	0
Aid under Article 141	35 000	32 700	31 900	31 600	35 000	35 100	31 600
National top-ups to LFA	0	0	0	0	0	10	10
Total return	**187 800**	**279 400**	**276 400**	**232 900**	**318 700**	**313 200**	**317 600**
Share of aid under Art 141 of total return %	19	12	12	14	11	11	10
Share of top-ups to LFA of total return %	0	0	0	0	0	0	0
Entrepreneurial income	**22 900**	**28 000**	**20 400**	**9 660**	**22 100**	**-19 100**	**-23 100**
Share of aid under Art 141 of entrepreneurial income %	153	117	156	327	158	-	-
Share of top-ups to LFA of entrepreneurial income %	0	0	0	0	0	0	0
Entrepreneur's profit	-8 730	-39 200	-43 400	-44 700	-35 400	-76 000	-81 500
Profitability ratio	**0,72**	**0,42**	**0,32**	**0,18**	**0,38**	**-0,34**	**-0,4**

3.4.6 Vegetable production in the open

In the production of vegetables in the open there has been considerable variation in entrepreneurial income between the years. Partly this may be due to the small number of outdoor vegetable farms in the bookkeeping data. The share of national income aid under Article 141 in the total return has been about 4%, but during the period covered its share in the entrepreneurial income has varied between 20 and 80%. The strong variation in the share has been due to the great variation in entrepreneurial income between the years. When the costs of own labour and equity are also taken into account, the entrepreneur's profit has been negative, about -20 000 – -40 000 euros. Because of the strong variation in the entrepreneurial income of vegetable production in the open the profitability ratio has also varied greatly, between 0.18 and 0.66.

According to the forecast for 2011 and 2012, the income aid under Article 141 would fall, but even in this case it would still account for about 17% of the entrepreneurial income in 2012.

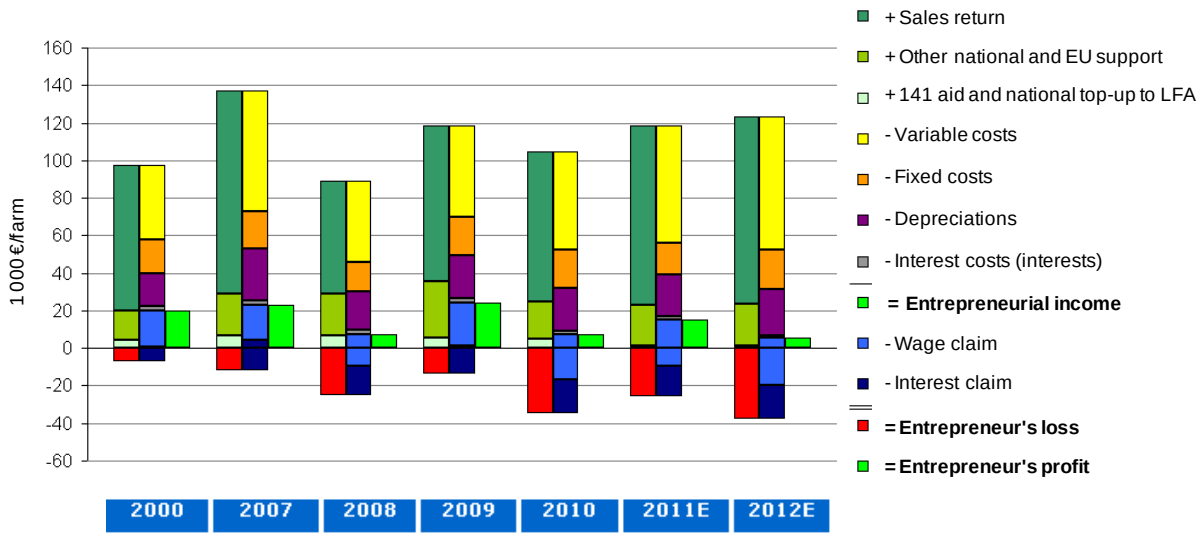


Figure 3.16. Returns and costs of enterprises producing vegetables in the open in area AB in 2000 and 2007–-2012e (MTT Profitability bookkeeping / FADN -data).

Table 3.15. Economic result and profitability of enterprises producing vegetables in the open in area AB (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Economic results	Area A * Area B Outdoor vegetables						
	2000	2007	2008	2009	2010	2011E	2012E
Number of farms represented	930	600	530	370	400	410	370
Arable area	30,4	45,7	44,9	36,7	30,8	30,2	31,2
Livestock units	0,1	0	4,8	7,6	0	0	0
Aid under Article 141	4 520	6 060	5 890	4 330	4 540	760	940
National top-ups to LFA	0	440	750	1 070	510	530	560
Total return	**97 500**	**137 400**	**89 400**	**118 400**	**104 700**	**118 800**	**123 500**
Share of aid under Art 141 of total return %	5	4	7	4	4	1	1
Share of top-ups to LFA of total return %	0	0	1	1	0	0	0
Entrepreneurial income	**19 800**	**22 800**	**7 440**	**24 100**	**7 410**	**15 200**	**5 400**
Share of aid under Art 141 of entrepreneurial income %	23	27	79	18	61	5	17
Share of top-ups to LFA of entrepreneurial income %	0	2	10	4	7	3	10
Entrepreneur's profit	-7 100	-12 200	-25 400	-14 300	-36 200	-27 000	-39 100
Profitability ratio	**0,74**	**0,66**	**0,23**	**0,64**	**0,18**	**0,37**	**0,13**

3.5 Impact of different types of support on the economy of farms in area AB

The total return and profitability of farms is increased by both coupled and decoupled support payments. Of the two, coupled payments offer a better incentive to increase the farm size. Even more efficient incentive to expansion is provided by the investment aid or subsidies, which are often a precondition for launching the investment in the first place.

3.5.1 Impact of investment aid on the profitability of farms

In the profitability and production cost calculation costs arise from both equity and external capital. In the EU's FADN calculations as well as in calculations made in Finland investment subsidies are included in equity and an interest cost arises from all equity as well as external capital. This means that investment subsidy leads to direct profitability improvement only if the calculated interest rate percentage for the investment subsidy is lower than the interest rate percentage for the debt. Equity is risk capital invested in

one's own enterprise which in case of bankruptcy can be cashed from the enterprise only after all other financers have got their share. This is why the cost of equity is almost always determined using an interest rate raised by the amount of the risk premium from the interest-rate on debt. This means that investment subsidies do not necessarily lead to direct improvement in the profitability of enterprises.

If investment aid is paid as subsidised interest rate, the decrease in the interest costs for the entrepreneur contributes to better profitability. However, the most significant improvement in profitability through investment subsidies can be achieved if the expansion investment improves the possibilities to take advantage of economies of scale. The profitability is the higher and production costs per unit, for example, are the lower the larger the farm is.

3.5.2 Impact of investment aid on the liquidity and solvency of farms

Investment subsidies do not lead to cash-based interest costs and they are not repaid, which means that there are no loan instalments to be paid. Through this investment subsidies improve the liquidity of enterprises. This can be analysed using the liability pay-back period to show how many years the repayments of the debts of an enterprise would take if the financial result left for investments would in full be used for loan instalments.

In area AB the liability pay-back period in 2010 varied by production sectors. For example, in the group of cattle farms the liability pay-back period was 138 years. This is not directly due to a high amount of debt in absolute terms but, rather, to the small financial result. The liability pay-back period was the shortest on poultry farms, six years, which according to the guidelines for analysing financial statements of the Company Analysis Advisory Board is also to be considered only passable. In all other production sectors covered the pay-back period was more than 10 years, which in the Board's guidelines is considered a weak level.

In the calculations it is assumed that no additional debt is taken out and all of the financial result can be used for loan instalments. In practice, however, before long the financial result must also be used for replacement investments in order that the production activity can be continued, which means that often more debt needs to be taken out and in reality the pay-back period is longer than that based on the simple calculation. In the most heavily indebted farms and production sectors managing the debt means cutting down on private consumption and financing the liability pay-back also by funds outside the agricultural activity.

Table 3.16. Liability pay-back period in production sectors in area AB and equity ratio on average and in case no investment subsidies had been granted (MTT bookkeeping data, EconomyDoctor analysis service).

Impact of investment aid on liquidity and solvency	Area A * Area B 2010				
	Greenhouses	Dairy farms	Cattle farms	Pigs	Poultry
Liability pay-back period					
Liability	269.459	136.862	93.483	224.718	495.813
Financial result	3.206	10.761	679	19.745	79.152
Liability pay-back period	**84**	**13**	**138**	**11**	**6**
Liability + investment subsidy	284.951	150.814	108.131	241.689	555.392
Financial result after additional interest costs	2831	10437	307	19141	77757
Pay-back period without subsidy	**101**	**14**	**352**	**13**	**7**
Liability increase without subsidy, %	6	10	16	8	12
Solvency					
Equity and liability in total	412.024	541.339	432.532	795.816	922.049
Equity	142.564	404.476	339.049	571.099	426.236
Equity ratio, %	**35**	**75**	**78**	**72**	**46**
Equity without investment subsidy	127.072	390.524	324.401	554.128	366.657
Equity ratio without subsidy, %	**31**	**72**	**75**	**70**	**40**

If the farms which have developed their structure had taken out the same amount of debt as they received as investment subsidy, the total amount of debt would be higher and, due to the additional interest costs from the additional debt, the financial result available to be used for pay-back would be smaller than in the calculation. This would further lengthen the liability pay-back period in all production sectors.

In the balance sheet of an enterprise investment subsidy is included in equity, because it is not repaid. Thus investment subsidy directly improves the solvency of an enterprise. The solvency of an enterprise is measured by the equity ratio, i.e. the share of equity of the total capital of an enterprise. In 2010 the equity ratio in area AB varied from 35 in greenhouse enterprises to 78 on cattle farms. Investment subsidy has lowered the indebtedness and clearly improved the solvency of enterprises. If there had been no investment subsidies, the average amount of debt would be 10% higher and, in consequence, equity ratio an average of 4% lower.

3.6 Summary

The significance of the national aid under Article 141 on farms in area AB was analysed based on the Profitability bookkeeping / FADN -data of Agrifood Research Finland MTT. In 2010 there were a total of 405 bookkeeping farms with the economic size based on standard output exceeding the limit of 8 000 euros used in the FADN. The results were weighted to obtain the average results by production sectors and standard output classes to describe the results of all the 18 570 farms in the area. To have a clear picture of the role of aid under Article 141, the analysis focused on production sectors where this aid is particularly important.

From the perspective of farmers the trends in the product and input price ratio have been unfavourable: input prices have risen much more rapidly than product prices, especially in livestock sectors. Farmers have tried to compensate for the weakening price relations through structural development and higher productivity.

In 2001–2010 the productivity of dairy farms in area AB increased by an average of 4.5% and that of pig farms by 2.7% a year. However, the productivity of farms that continue in production and have invested in expansion the productivity has grown less than this.

Structural development has been strong in area AB. According to the weighted results of the profitability bookkeeping farms, the arable area of livestock farms has grown by 40% and the number of livestock units by 75% over the past ten years. During the same period almost 45% of all livestock farms and greenhouse enterprises, representing all economic size classes, have quit production.

Even this quite significant structural development and productivity improvement has not been enough to maintain the economic situation of farms at the same level as before. In horticulture and livestock production the entrepreneurial income, i.e. the compensation for farmer's labour input and equity, has not grown even in nominal terms. At the same time the amount of equity committed to the production activity, often from outside the agriculture and horticulture sector, has almost doubled since 2000, which means that the compensation left for equity has weakened. The debts of enterprises have tripled, meaning that the consequent increase in interest costs also push down the entrepreneurial income.

Table 3.17 shows the profitability ratios by production sectors, which indicate the share of the compensations for farmer's own labour and equity set as the target that is covered by the entrepreneurial income. In 2010 entrepreneurial income gave the farmer about 44% of the hourly wages of agricultural workers (14.1 euros) and 44% of the 6.3% target return on equity in these production sectors. This means that the hourly pay to farmers was 6.2 euros and they received 2.8% interest on equity.

Table 3.17. Profitability ratio by production sectors types (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service.

Profitability ratio	Area A * Area B						
	2000	2007	2008	2009	2010	2011E	2012E
Greenhouses	0,72	0,42	0,32	0,18	0,38	-0,34	-0,4
Horticulture in the open	0,74	0,66	0,23	0,64	0,18	0,37	0,13
Dairy farms	0,58	0,57	0,6	0,47	0,56	0,64	0,71
Cattle farms	0,64	0,33	0,22	0,22	0,3	0,39	0,37
Pig husbandry	0,76	0,73	0,33	0,47	0,31	0,06	0,08
Poultry husbandry	1,13	0,97	-0,19	0,26	0,68	0,46	0,5

At present the entrepreneurial income is so low that it does not provide a reasonable compensation for farmers' own labour and equity. In 2010 aid under Article 141 accounted for 45% of entrepreneurial income, which means that abolition of the income aid under Article 141 would cut almost half of the already too low entrepreneurial income of farmers in the area. Table 3.18 presents the share of income aid under Article 141 of entrepreneurial income by production types. These figures also show how big a cut the abolition of the aid would cause in entrepreneurial income. The impact of cutting the aid under Article 141 on farmers' income would be catastrophic.

Table 3.18. Share of national aid under Article 141 of entrepreneurial income by production sectors types (MTT Profitability bookkeeping / FADN -data, EconomyDoctor analysis service).

Aid under Art. 141, % of entrepreneurial income	Area A * Area B						
	2000	2007	2008	2009	2010	2011E	2012E
Greenhouses	104	78	92	98	87	194	203
Horticulture in the open	14	27	19	17	59	5	16
Dairy farms	30	15	17	19	17	16	15
Cattle farms	41	29	32	33	25	20	21
Pig husbandry	67	54	71	72	59	67	53
Poultry husbandry	63	63	57	66	63	87	63

The analysis shows that investment subsidies have improved the solvency and liquidity of farms. Without investment subsidies horticulture enterprises and livestock farms would have 10% more debt than they have at present. The additional interest costs due to the higher amount of debt would in turn reduce the financial result available to be used for loan repayment, resulting in an about five years longer liability

pay-back period. This means that investment subsidies have made a significant contribution to maintaining the possibilities for structural development and profitability and productivity improvements on farms in area AB.

4 Role of aid under Article 141 in agricultural production and regional economy in area AB

Chapter 4.1 analyses the significance of income aid under Article 141 for the total agricultural production in area AB by production sectors and for agricultural income. The analysis is made using counterfactual impact assessment, where the realised development, so-called base, is compared to the development which would have taken place in 2008–2011 and would take place in 2012–2020 without the measure to be assessed, in this case the aid under Article 141. The time period of the analysis has been extended until 2020 because agriculture is slow to react to changes due to the long time span of investments and delays in the production caused by biological factors, which is why the impacts will not appear to their full extent immediately or after only a year or two. The research method is the economic sector model DREMFIA, which by means of updates of the farm-level data and certain parameters has been calibrated to correspond to the realised development in production and prices in the whole country as well as in area AB. The model used does not include horticulture and sheep and horse husbandry, which is why Chapter 4.1.7 presents a qualitative assessment of the significance of income aid under Article 141 for horticulture based on expert views. The significance and impact of income aid under Article 141 as regards agricultural income in area AB is presented in Chapter 4.1.8. These results are used to also calculate the direct and indirect impacts on the regional economy by means of the input-output-analysis, as presented in Chapter 4.2. The main findings are summarised in Chapter 4.3.

4.1 Role of aid under Article 141 in agricultural production in area AB

4.1.1 Objectives and principles of the regional evaluation

Above the impacts of aid under Article 141 paid in area AB on the income of farms have been evaluated in the light of static result calculations. The calculations made show very clearly the economic significance of aid under Article 141 in different production sectors based on farm-level data. In the calculations the production and costs of the farms as well as support payments other than those under Article 141 were kept separate. The calculations were based on accurate and the most recent available data on the economic situation of farms. In view of the fact that agriculture functions on competitive markets and is in constant change as regards its production structure and economic size class distribution, the following chapters evaluate the significance of income aid under Article 141 in terms of the development of the total production of agriculture and agricultural income in area AB. This is needed because the calculated direct impacts of income aid under Article 141 do not give a full picture of the contribution made by the aid under Article 141 to the development of agricultural production in area AB and the direction in which the development is now going because of the aid. To see the full impact of agricultural support payments on the production also requires a longer time span than just a few years, mainly because of the long use life of investments and delays in the production.

Below we will discuss to what extent the development of the total agricultural production and agricultural income in area AB by production sectors is dependent on the income aid under Article 141 in the future. The payment of any type of agricultural support has impacts on the profitability of investments, productivity development and incomes. In this chapter the evaluation of the significance of the income aid under Article 141 takes account of the changes that took place in other support payments to agriculture during the period 2008–2013 (CAP, LFA and environmental payments) as well as the realised and expected changes in the agricultural product prices relative to input prices. The significance of the income aid under Article 141 on the development of agricultural production in area AB is estimated for the period 2008–2013 as well as in a longer term, until 2020.

The impacts of support payments to agriculture on the production and income can be divided into three categories (OECD 2001):

(1) Direct impacts on price relations on the product level. These arise when agricultural support is targeted to a certain agricultural product or operations that produce it, e.g. litre of milk, bovine animal or cultivation area of certain plants. This kind of support gives an incentive to produce more than would be economically feasible on the grounds of the input and product prices on the market alone.

(2) Impacts on risk and wealth, which arise when the agricultural support paid increases the income of producers as well as risk-free return that is not dependent on fluctuations on the market. For example, support paid per hectare or animal increases the returns per hectare of arable land or livestock unit while reducing the share of uncertain returns that depend on the market prices in the income. This means that the total risk to a farmer decreases (grows) when the support is increased (decreased).

(3) Dynamic impacts, which arise when the above-mentioned impacts of agricultural support change the returns and risks of investments, as well as the expected future returns and risks, which results in the growth (decrease) in the capital stock, i.e. production capacity, when agricultural support is increased (decreased). These dynamic impacts depend on the farm, size class and productivity distribution by production sectors, i.e. the share of enterprises that in the new situation are capable of responding to changes in support policy through investments. Because of the long use life of investments and delays in production due to production factors in agriculture changes in the production capacity take time, meaning that the impacts do not appear immediately in the same way as those in points (1) and (2).

4.1.2 Evaluation of the role of the aid by means of support scenarios and economic modelling

The purpose of the base scenario of agricultural production, calculated using the DREMFIA sector model in accordance with the relevant market and agricultural policy assumptions, is to function as a ”business as usual” reference scenario for evaluating the significance of income aid under Article 141. The development of production in the income aid scenarios to be defined below is compared to the development of production in the base scenario. Even in the base scenario agriculture has to respond to the known changes in agricultural policy and anticipated changes in relative prices on the market. In the base scenario the future development of production is also influenced by the expectations concerning future prices and support payments.

Base scenario assumptions

Due to the abolition of milk quotas as from 2014 the EU price level of milk is expected to fall during 2011–2014 by about 15% from the price level in 2009–2010 (in 2009 the producer price of milk in Finland was 0.3974 EUR/l and in 2010 it was 0.3692 EUR/l). If this price reduction were transmitted directly to Finland, in 2014 the producer price level of milk in Finland would be about 35c/l. The decrease may be smaller in Finland than in the EU on average, but in any case it would lead to some reduction in the real prices for milk as the prices of the main inputs, such as energy, continue to rise. The average price inflation of inputs from outside agriculture was assumed to be 1.8%.

Table 4.1. Development of EU prices of agricultural products in the base scenario, euro/100 kg.

Product	2000	2005	2010	2015	2020
Wheat	136,9	112,7	120	151	151
Barley	116,0	100,9	110	138	138
Oats	117,7	85,8	94	133	133
Rye	136,9	117,7	126	151	151
Oilseed crops	218,6	201,8	286	330	330
Beef	206	205	250	240	240
Pigmeat	129	128	143	160	160
Poultry meat	111	114	125	131	131
Eggs	82	60	87	93	93
Milk (producer price)	35,0	35,22	39,0	35,0	35,0

The price changes transmitted from the world market to the internal market of the EU were expected to follow the price forecasts published by OECD-FAO in summer 2011 (www.agri-outlook.org). According to these, for example, the prices of feed grains would be 30–40% higher than in 2000–2005, a little less than 140 EUR/tonne in 2015–2020. However, as the agricultural input prices will be rising as well, the real prices of cereals will rise only little, if at all. On the global scale the real prices of milk products would be quite stable, i.e. the rise in the prices would largely follow the increase in input prices.

Instead, in the OECD-FAO review the real price of beef is estimated to stay about 10–20 % higher than in 2005 (when the beef prices were still very low both in Finland and in the EU). Thus the high cereal prices would not significantly weaken the profitability of beef production. This is also forecast to be the case for the price of poultry meat despite the large share of cereals in the production cost, mainly due to the strong and growing demand. The real price of pigmeat is expected to decrease by about 10% by 2020 as, according to the OECD/FAO forecast, the demand for pigmeat is not strong enough to cause the pigmeat prices to rise as a result of the higher cereal prices. According to the OECD-FAO review, the differences in the development of the real prices of the main meat products, which in principle are substitutes for each other, are due to the fact that the developing economies are far better capable of responding to the growing demand for pig and poultry meat than to the demand for beef. One reason behind this is the large area of land needed for beef production and shortage of this, which does to restrict pigmeat and poultry meat production in the same way as beef production. Pigmeat and poultry meat production is also biologically more efficient than beef production, meaning that less feed is consumed per kilo of meat produced.

Assumptions concerning the decisions on agricultural policy that were known were also included in the base scenario. For example, the CAP dairy cow premium for area AB agreed in the context of the Health Check of the CAP in 2008 and the CAP premiums for bovines in areas AB and C, with relevant budgetary constraints, have been taken into account so that the amount of support per unit changes when the number of animal changes while the total amount of support stays the same. The assumptions concerning the national aid for milk were that in area AB the national aid totals about 17 million euros and in area C about 155 million euros. The assumptions concerning national aid for bovines included budgetary constraints. The national aid for pigs and poultry were decoupled from the production in 2009, and since then the aid has been paid as degressive aid for livestock farms. The CAP, LFA and environmental payments were assumed to be at the level of 2010. The known decisions on agricultural policy were taken into account in the base scenario and the EU support payments in the programming period starting in 2014 were assumed to be at the same level as in 2010.

In the base scenario it is assumed that income aid under Article 141 continues to be paid until 2020 at the level decided in 2007. In the DREMFIA sector model simulations this means that in 2007–2011 income aid under Article 141 is paid according to the known aid levels. As from 2012 it is assumed that degressive aid is paid for pig and poultry husbandry independent of the livestock numbers (Table 4.1.1), subject to the condition that the farm concerned continues to be considered a livestock farm (the minimum of 0.4 LU/ha or a total of 10 LU).

Table 4.2. Maximum amounts of income aid under Article 141 in 2007–2013 (million euros).

	2007	2008	2009	2010	2011	2012	2013
Ruminants	27,03	24,32	24,2	24,08	23,96	23,84	22,72
Pigs and poultry	47,69	40,72	37,87	35,22	32,75	25,22	16
Horticulture	19,28	18,17	17,63	17,1	16,59	15,59	13,66
Arable area-related aids		10,69	10,66	10,63	10,6	10,58	10,55
Aid per hectare for livestock farms		9,69	9,69	9,69	9,69	9,69	9,69
Aid for vegetables grown in the open and starch potato		1	0,97	0,94	0,91	0,89	0,86
TOTAL	94	93,9	90,36	87,03	83,9	75,23	62,93

Scenario where aid under Article 141 has been abolished

The significance of the income aid under Article 141 for the production and agricultural income in the long term of over 10 years was estimated by constructing a scenario where the aid under Article 141 has been abolished altogether in 2008. This means that in this scenario no aid under Article 141 is paid in 2008–2020. The other support payments, as well as the product and input prices, stay at the same level as in the base scenario. The assumption is that until 2008 aid under Article 141 was paid in the same way as in the base scenario.

Operating principles of the DREMFIA sector model

The calculations on the impacts on agriculture as a whole were made using the MTT's DREMFIA sector model, which comprises the main production sectors of Finnish agriculture and their foreign trade (Chart 4.1). The model does not include horticulture and sheep husbandry. The model contains 18 different production regions (Figure 4.1) and a detailed description of support policy (Lehtonen 2001). Changes in product and input prices influence the feeding of animals, output levels and use of arable land, which means that adaptation to changes in price relations takes place within agriculture. The DREMFIA model has also been used for assessing the impacts of CAP reforms, incl. abolition of milk quotas, on Finnish agriculture (Lehtonen, ed. 2007).

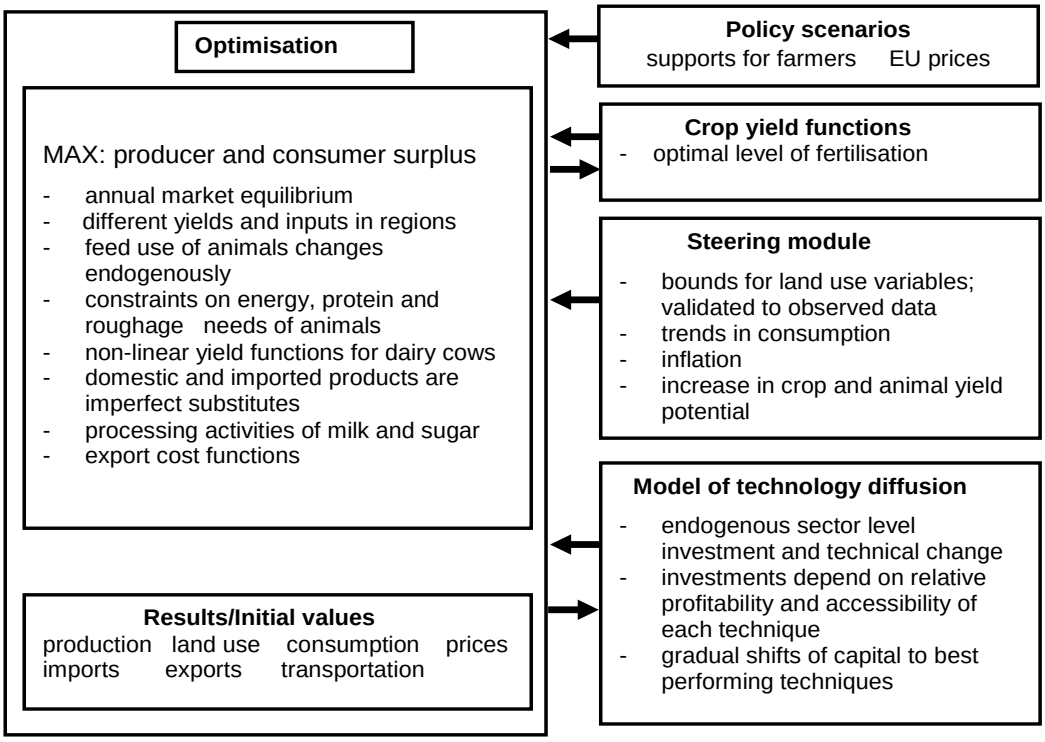


Chart 4.1. Basic structure of the DREMFIA sector model.

The DREMFIA sector model is based on the assumption that the producers maximise profit and the consumers maximise their utility when making production and consumption decisions. The model simulates the annual development of agricultural production in 1995–2020. The initial data used consist of return and cost calculations of agriculture available in general statistics, food consumption, import and export statistics, farm-level cost data and price and structural statistics on agriculture. By utilising the data and adjusting certain behaviour parameters (e.g. propensity to invest) the development path produced by the model can be validated to repeat the realised development path of the production by region. What is important here is that the realised development of agriculture by region can to a large extent be explained by the principle of comparative advantage in the traditional national economic theory, i.e. each region in Finland is already specialised or partly still in the process of becoming specialised in the production of

goods where they have a so-called comparative advantage. According to the main national economic theories, competitive markets lead to optimal use of resources on the total market level, also taking account of the different kinds of resources and public interventions such as agricultural support payments. This means that the markets steer the regional production structures in a way that maximises the total advantage of the agriculture sector. In such a case, for example, milk is not produced in areas with the best farmlands if better return on the resources, including land and labour, can be derived from other types of agricultural production. This in turn means that due to the regional resource limitations all production cannot move to areas where the conditions are the best but some of it will take place in the second, third, etc. best areas, as long as the products still find enough demand.

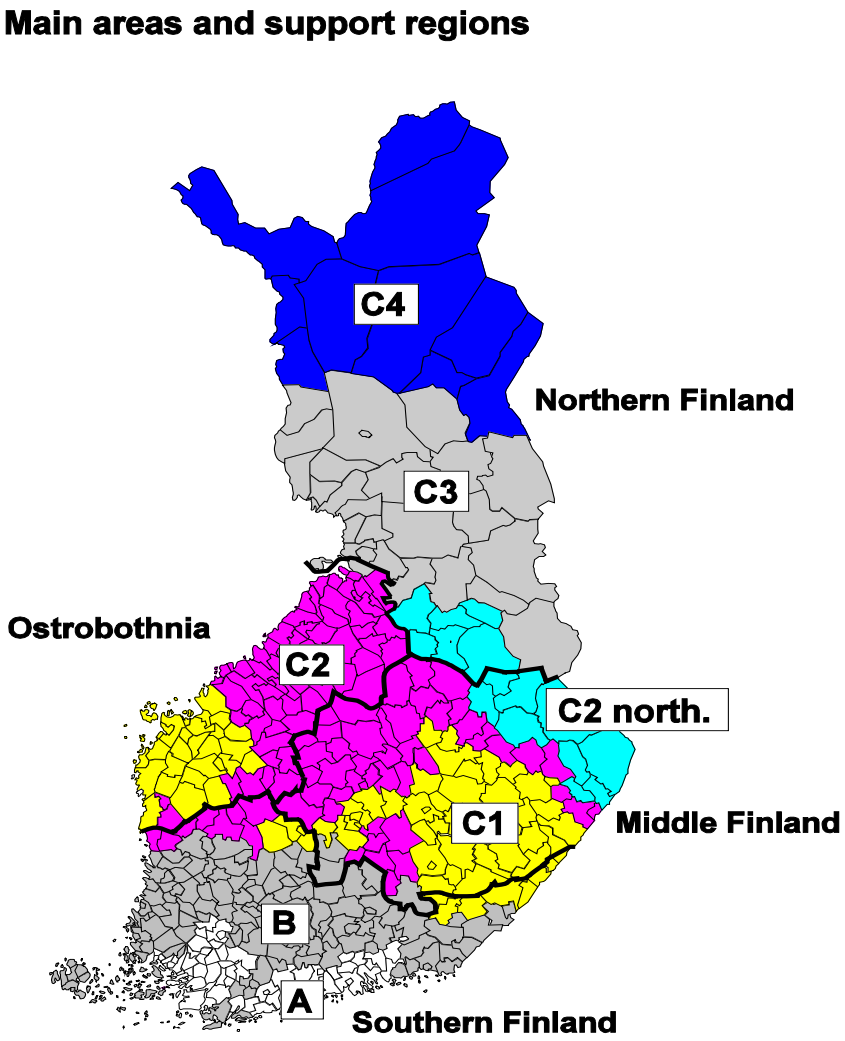


Figure 4.1. Regional division in the DREMFIA model.

Production costs and key production areas are also influenced by external parameters, such as the general level of earnings and costs (mainly determined by sectors outside agriculture). The price of labour has been differentiated for four main areas on the basis of the level of earnings calculated at the Statistics Finland. Based on these statistics the level of earnings in southern Finland were about 15% above the average of the whole country in 1995–2007 and, accordingly, in the DREMFIA model the price of labour in southern Finland was set at a 15% higher level than in the whole country on average. The assumption made concerning the price of labour is among the important factors through which dairy and other country husbandry in the results of the DREMFIA model decrease in southern Finland almost in line with the realised trend in 1995–2011 (Figure 4.1).

The DREMFIA model has been validated, i.e. adjusted to the realised development path of production and prices in 1995–2010, primarily based on the observed product prices, production volumes and livestock numbers, structural development on dairy farms (number of animals in different economic size classes) and milk quota prices. Besides the updates of statistical data certain parameters were used in the validation (e.g. substitution elasticities reflecting the reactions in foreign trade and rate of savings and propensity to invest indicating investment behaviour). By changing the values of the parameters the development of the basic path has been calibrated to correspond to the realised development in production and prices in the whole country and in area AB. Structural development has been modelled by the so-called technological diffusion model, with three distinct economic size classes: farms with under 20 cows, farms with 20–49 cows and farms with over 50 cows. The primary validation criterion was the real distribution of cows into these economic size classes in 1995–2011. The capital depreciation rate was assumed to be constant and the same for the two largest size classes, but the depreciation percentage of the smallest class had to be set at a higher level to be able to explain the rapid decrease of its relative share in the whole country. This is one of the factors which has led and will lead to a rapid growth in the number of dairy cows on farms with over 50 cows.

In the DREMFIA model the budget constraints for specific production sectors and animal species can be taken in to account so that if the amount of aid exceeds the set limit, the level of aid per unit decreases by a corresponding amount in the following year, while the level of unit aid also decreases from the previous year in proportion to the budget constraint. This practice has functioned well in all production sectors, i.e. budget constraints have only been exceeded in one or two years and even then by no more than a few percentages. The quite high price for cereal relative to the prices for livestock products has also contributed to this. The OECD-FAO price forecasts of summer 2011 have been used as forecasts for the EU prices (www.agri-outlook.org).

The national aid for pig and poultry husbandry was decoupled from the numbers of animals in support areas A, B and C in 2008–2009. In order to be eligible for the aid for pig and poultry husbandry under Article 141 the farm had to continue production as a livestock farm (the minimum of 10 livestock units or stocking density of 0.4 LU/ha), which means that the aid was decoupled almost completely. In the DREMFIA model this has been modelled so that the aid per livestock unit concerned is reduced by 90% and this lower share is paid on the grounds of the management of arable land (arable land either set aside or cultivated with an arable crop). The estimate that the payment of the aid for pig and poultry farms based on the livestock farm status only means about 10% to be coupled to the number of animals is based on calculations made in the beginning of 2008 (Lehtonen & Niemi 2008). In reality it would be well justified to use a degressive share for this because the average farm size has grown far beyond 100 livestock units in monogastric sectors, i.e. a farm engaged in monogastric production may continue as a livestock farm by keeping less than a tenth of the number of livestock in 2008[2].

4.1.3 Dairy husbandry

In the base scenario milk production in area AB decreases until 2008, when the decrease stops and the production turns into a slight increase. This is based on the assumed steady growth in average output of cows in the simulations, CAP dairy cow premium (about 150 EUR/dairy cow) and growth in the number of dairy cow places on farms with more than 50 cows. In reality the decrease in the production continued until 2010, but it slowed down significantly in 2009–2010. Probably more farms have given up production in recent years and expansion investments have been slightly less common than in the simulations, where the share of farms with over 50 cows rises to 40% in 2011. This was the case in Uusimaa and Varsinais-Suomi, where the share of dairy herds with over 50 cows of all dairy herds was 39% and 41% in 2011. In Satakunta and South-East Finland this share was 32% and in Pirkanmaa it was 36%.

The simulation results of the structure of dairy farms for the whole country are quite close to the reality, even if the simulated increase in the number of dairy cow places on farms with over 50 cows in area AB by 2011is somewhat more rapid than the real development. Based on the results, without the income aid

[2] Based on sensitivity analyses, however, it seems that, while the total aid paid for the monogastric sector decreases, the production results show only little change (less than 1%), even if the whole amount of aid is assumed to be decoupled (this means that more farms may give up production, which would be reflected as 1–2% lower production levels in 2020).

under Article 141 paid as from 2008 milk production in area AB would have been much lower than in reality already in 2010.

All in all the simulated milk production in southern Finland in 1995–2011 corresponds quite well to the realised, slowly decreasing trend (Figure 4.1). According to the official statistics, in 2007 milk production in area AB totalled 489 million litres and in 2010 the production was 472 million litres. In area C the simulated milk production is also quite close to the realised trend. In recent years the decrease in the number of farms dairy cows has been more rapid in area AB than in area C. Based on the trend for 2000–2011 the simulated milk production in area AB continues to decrease to about 420 million litres by 2020. The decreasing trend in milk production is reinforced by the abolition of milk quotas in the EU 2015. The national quotas will be increased before this, which means that the prices of milk products on the EU market are likely to fall already before 2015 as the more competitive EU countries increase their production. In the base scenario this has been taken into account by assuming a little under 10% lower EU price level for 2011–2015 (Lehtonen, ed. 2007). This change would be transmitted to Finland through the import and export market as a decrease in producer prices by about 8% (i.e. the producer price for milk decreases from 38 c/l in 2011 to 35 c/l in 2015).

In area AB milk production is further reduced by the higher price for labour (opportunity costs of labour, i.e. alternative sources of earnings) and rise in the input prices, especially those for energy. The price of an hour of labour was estimated to be 10% higher in southern Finland than in the whole country on average. The slight increase in the real prices for cereals (OECD-FAO) makes giving up milk production an attractive option in the whole country and especially in areas where alternative employment opportunities are available to supplement income from plant production.

Among factors which slow down the decrease in milk production is the quite rapid structural development, which would continue by means of investment aid at about the same level as in the previous years. Development in line with the base scenario will also be maintained by the fact that, according to the OECD-FAO forecasts for the EU prices, the real prices of milk products will not fall after 2015, which means that there will also be no growth in milk product imports. In the base scenario the national aids will continue as before and the relative position of milk production will stay the same, i.e. the slow decrease in the production will continue.

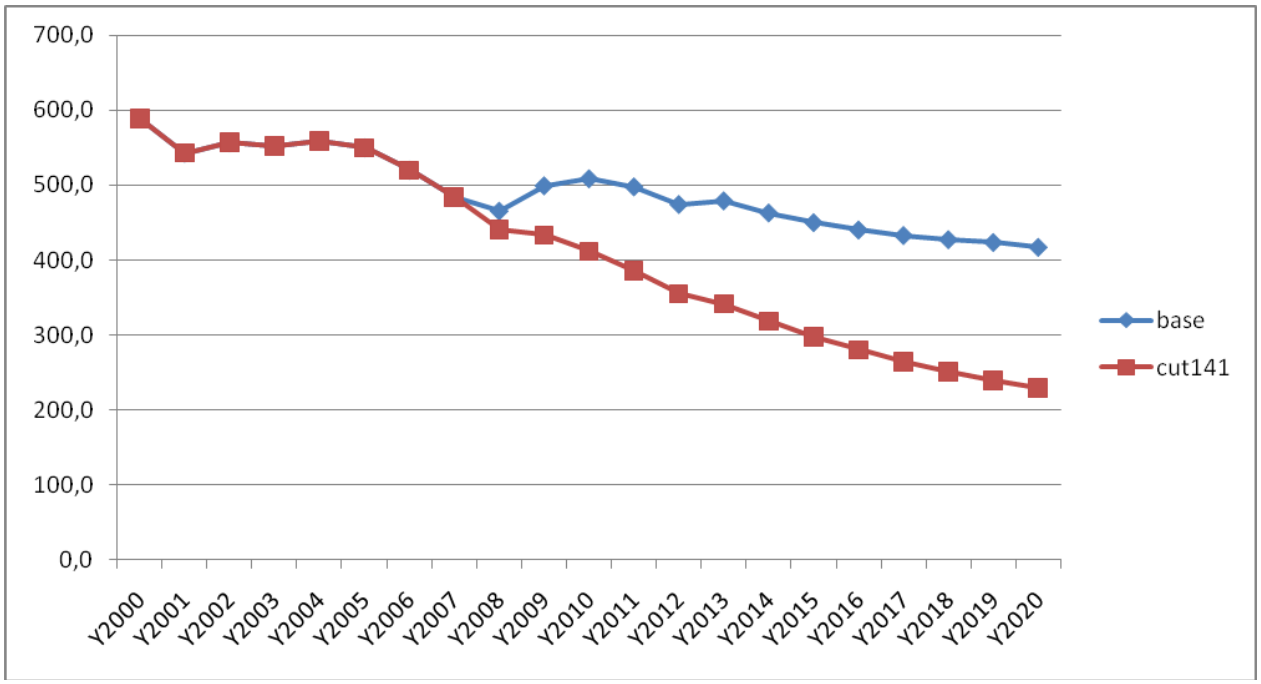


Figure 4.2. Milk production in area AB in 1995-2020 in the base scenario and a scenario where no income aid under Article 141 is paid in 2008–2020 (cut141).

If no aid under Article 141 had been paid in 2008–2011 nor were paid in 2012–2020, by 2020 milk production in area AB would fall to only about half of that in 2010 (472 million litres) to the level of 220 million litres (Figure 4.2). Compared to the base scenario, milk production would be 45% lower in 2020.

The reason for the decrease in the production is that without the income aid under Article 141 the number of cow places on farms with over 50 cows increases much more slowly than in the base scenario (Figure 2). The producer prices for milk are about the same in both scenarios as, first of all, the EU prices are the same and the domestic prices rise hardly at all as the production in area AB decreases. This is partly due to the fact that a very small share (less than 10 million litres) of the decrease would be compensated for by production in area C. One reason for this is that growth in the production in area C is curbed by the fixed budget constraint for the national aid.

Mainly the fall in milk production in southern Finland would lead to growth of imports and lower exports. Thus the total production in Finland would be reduced by the amount of the reduction that would take place in area AB. Without income aid under Article 141 the total production would remain at the level of 2 080 million litres in 2020 (2 265 million litres in the base scenario). Without the aid under Article 141 milk production would have fallen by 60 million litres already by 2010, compared to the realised output level of 472 million litres.

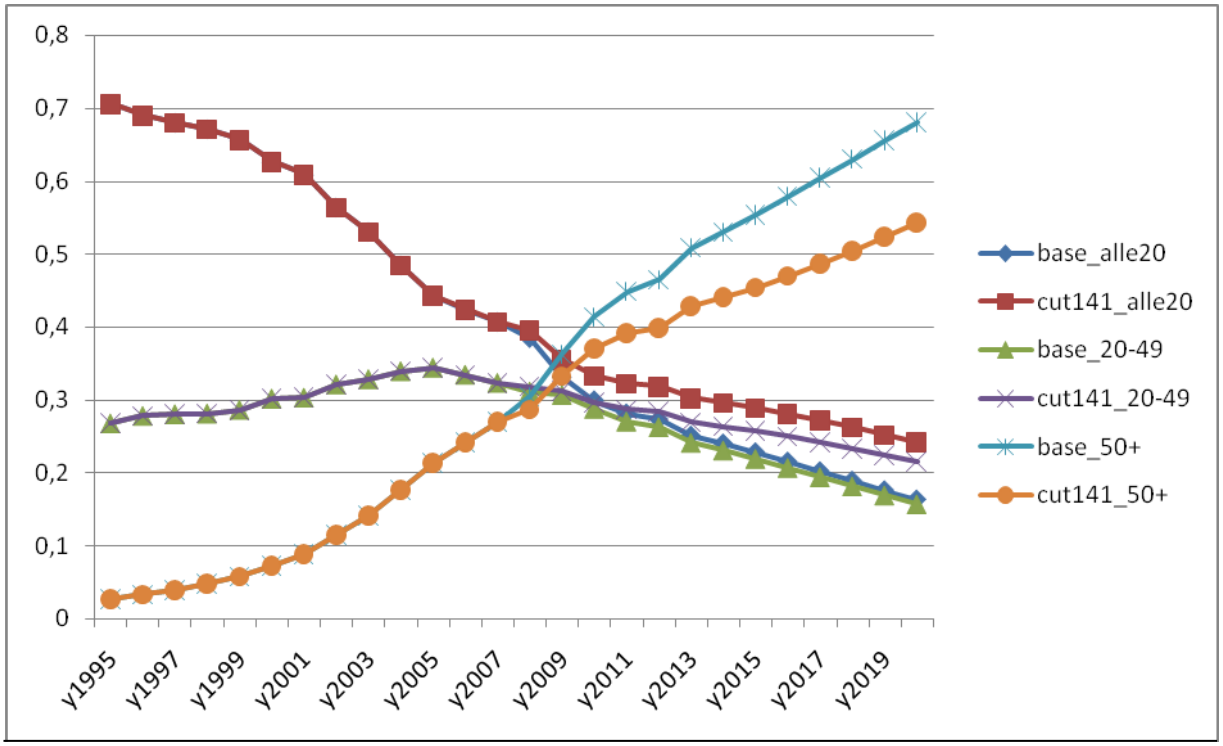


Figure 4.3. Distribution of cows into economic size classes (share of cows in size classes under 20 cows, 20–49 cows and over 50 cows) in area AB in 1995–2020 in the base scenario and a scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

4.1.4 Beef production

Most of the beef produced in Finland and in area AB comes from animals of the dairy breeds, whose number will be decreasing as the average yield of cows increases. In the base scenario the total production falls, even if the development slows down, despite the growth in the number of suckler cows. This will slow down due to the budget constraints for national income aids, also for the aid under Article 141, which reduce the aid per unit as the number of animals grows.

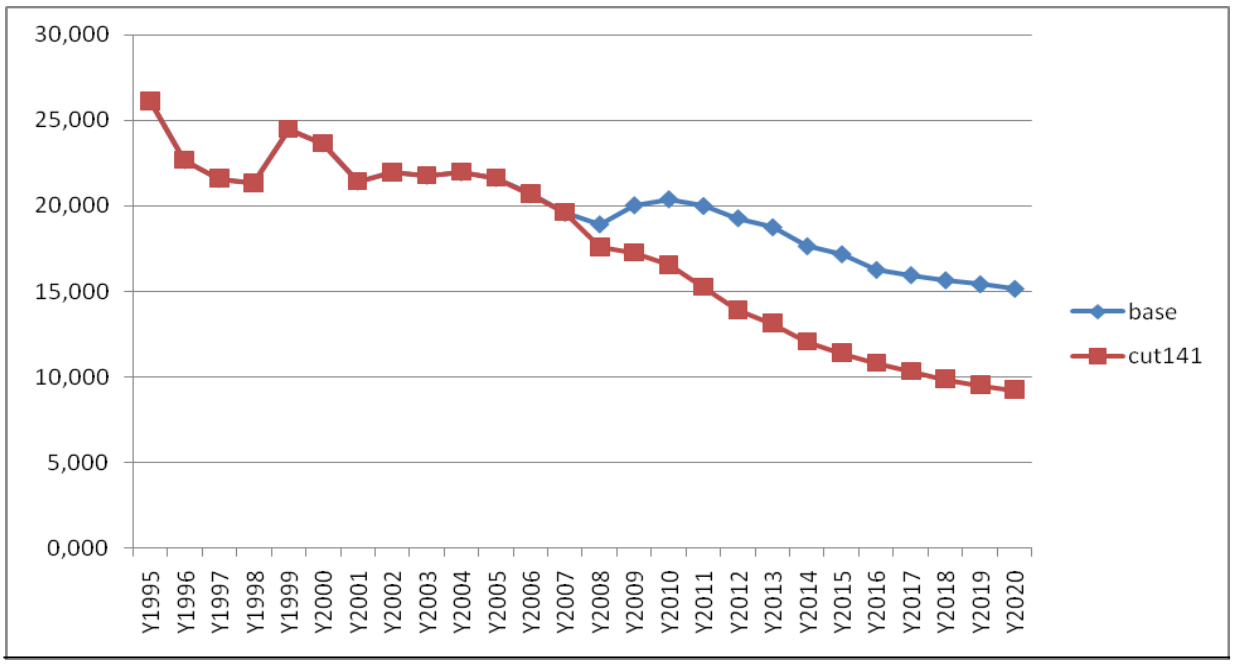


Figure 4.4. Beef production (million kg) in area AB in the base scenario and scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

In the scenario where aid under Article 141 has been cut most of the decrease in beef production is due to the fall in milk production in area AB, which in turn leads to a reduction in the number of animals of dairy breeds in the area (Figure 4.4). Besides the aid per litre of milk, the income aid for bovines under Article 141 is also abolished. Based on the results, the abolition of the premium per animal unit for suckler cows and bulls, in particular, would cause the growth in the number of suckler cows to stop and turn to a decrease already from 2008, even if the CAP animal premiums stayed the same (as is being assumed in both the base scenario and the scenario where no income aid under Article 141 is paid in 2008–2020).

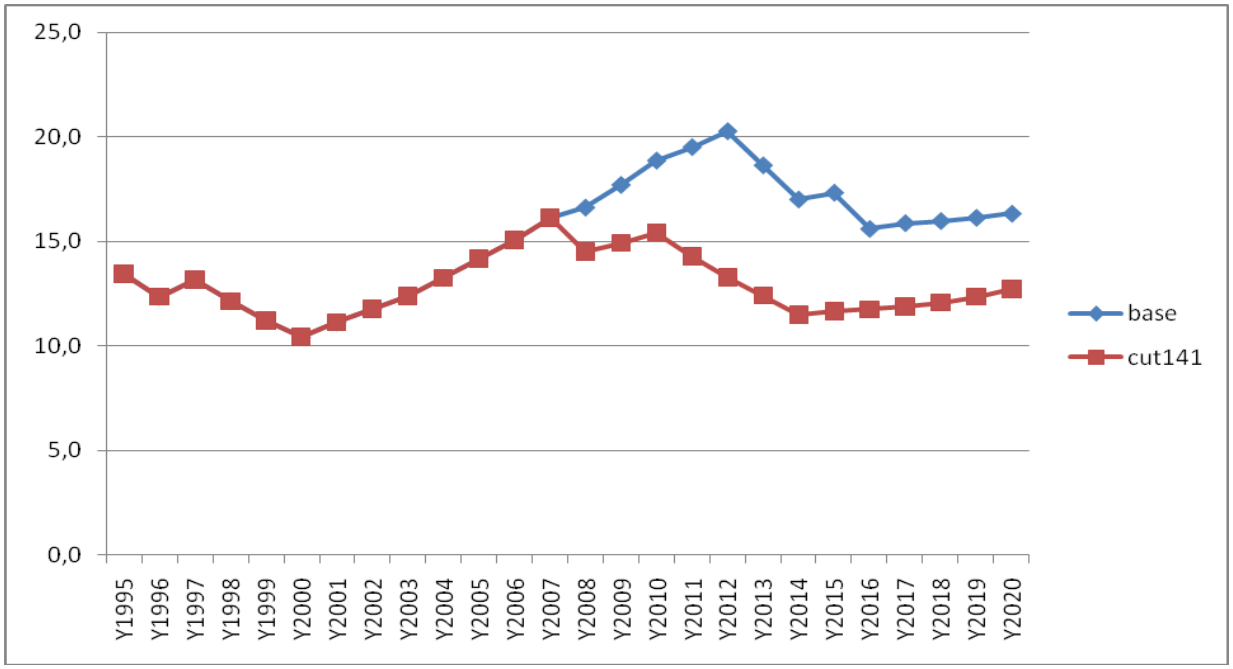


Figure 4.5. Simulated trend in the number of suckler cows (1000 animals in area AB in the base scenario and scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

Based on the results, the abolition of the income aid under Article 141 would not stop suckler cow production in area AB completely, but by 2020 the number of suckler cows would be fixed at a little over 12 000 animals, i.e. three-fourths of their number in the base scenario (Figure 4.5). Compared to the base scenario the number of suckler cows would thus decrease by about 4 000 animals in area AB and in the whole country. It should be noted that, in the same way as in milk production, beef production in area C would not increase as the production in area AB falls because of the upper limits for the maximum amounts of national aid for bovines set separately for area AB and area C.

4.1.5 Pigs and poultry

In the base scenario the price for pigmeat in real terms, i.e. relative to the price trend of inputs, especially feed grain, would decrease slightly. The decoupling of national aid paid for pigs and poultry on the basis of livestock units from the animal numbers in 2008–2009 has also been taken into account in the base scenario (Table 4.2).

As a result, in the selected base scenario pigmeat production in the whole country falls to 162–166 million kg, which is clearly below the domestic consumption (189 million kg in 2011). The result is almost the same as estimated earlier by Lehtonen and Niemi (2008), and 25% less than the level of production in 2008 of 217 million kg. The decrease in production would lead to a reduction in exports, in particular. In the base scenario pigmeat production in area AB decreases by 22% (20 million kg) to 108 million kg from 2007 to 2020 (Figure 4.6).

Based on the result, the abolition of the income aid under Article 141 in 2008 would lead to a further reduction of pigmeat production in area AB from the base scenario by 18 million kg (17%) to 90 million kg by 2020. This is because (1) part of the income aid under Article 141 is still coupled to the production through the requirement concerning the livestock farm status and (2) part of the production in area AB is compensated for by growth in production in area C, where the national aid decoupled from animal numbers for pig and poultry sectors is assumed to stay unchanged. If, however, the aid for pigs and poultry in area C were also completely abolished, the production would decrease by the same 10% as in area AB and no significant transfer of production to area C would take place. In the results the transfer of production to area C accounts for about half of the decrease in pigmeat production in area AB relative to the base scenario. In the scenario where income aid under Article 141 has been abolished pigmeat production in the whole country would permanently remain about 7 million kg (4 %) below that in the base scenario at 155 million kg if no income aid under Article 141 were paid in 2008–2020.

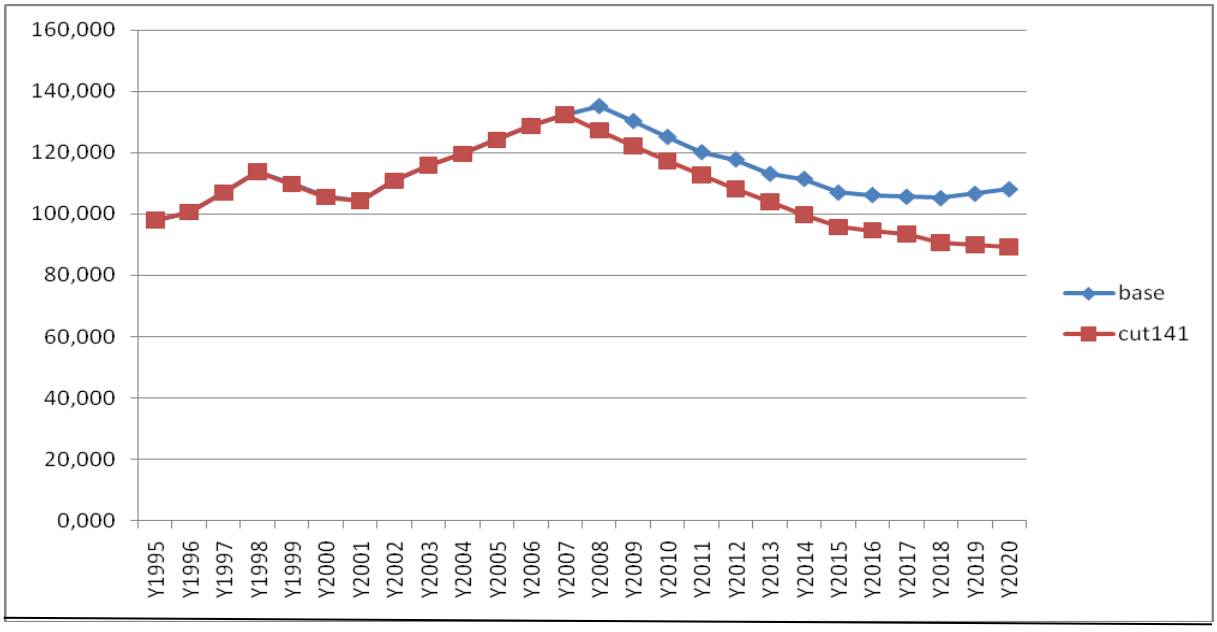


Figure 4.6. Pigmeat production (million kg) in area AB in the base scenario and scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

One reason for the impacts of the for the most part decoupled national income aid under Article 141 on pigmeat production in area AB is that the abolition of the income aid under Article 141 paid for arable area would also weaken the profitability of feed grain production, at least on less productive arable parcels.

In poultry meat production the abolition of income aid under Article 141 for would have a similar but less strong impact than in the pigmeat sector. Even more than pig husbandry, poultry meat production is already concentrated to large production units that are likely to stay in production and most of which are capable of investing by means of markets returns and structural support, also in the future. The simulated reduction in the production in area AB would be a little under 10%, part of which would be compensated for by growth in the production in area C.

In the whole country the abolition of income aid under Article 141 would lead to a decrease in poultry meat production by about 5 million kg, i.e. 5%. Most of the poultry meat has been produced on market terms under production contracts, which means that the impact of national aid has been smaller than in other the livestock production sectors discussed above. Based on the results the abolition of income aid under Article 141 would reduce egg production in area AB by only a few percentage units.

4.1.6 Impacts on cereal cultivation and use of arable land

The decrease in milk and meat production that would result from the abolition of income aid under Article 141 for 2008–2020 would also considerably reduce the demand for feed grain. Based on the results, this would cause a reduction of up to 170–180 000 hectares in cereal cultivation area and 50 000 hectares in the grass area in southern Finland (Figures 4.7 and 4.8). According to the results, most of this more than 200 000 ha would be set aside and the least productive lands, about 100 000 ha, would be left completely uncultivated. Such a dramatic reduction in the cereal area can even be considered unrealistic, because the total amount of income aid under Article 141 is still much lower than of the CAP, LFA and environmental payments, which area assumed to stay the same and which have significant impacts on the profitability of cereal cultivation. Very likely the real impact of the abolition of income aid under Article 141 would be smaller than shown by the simulation results.

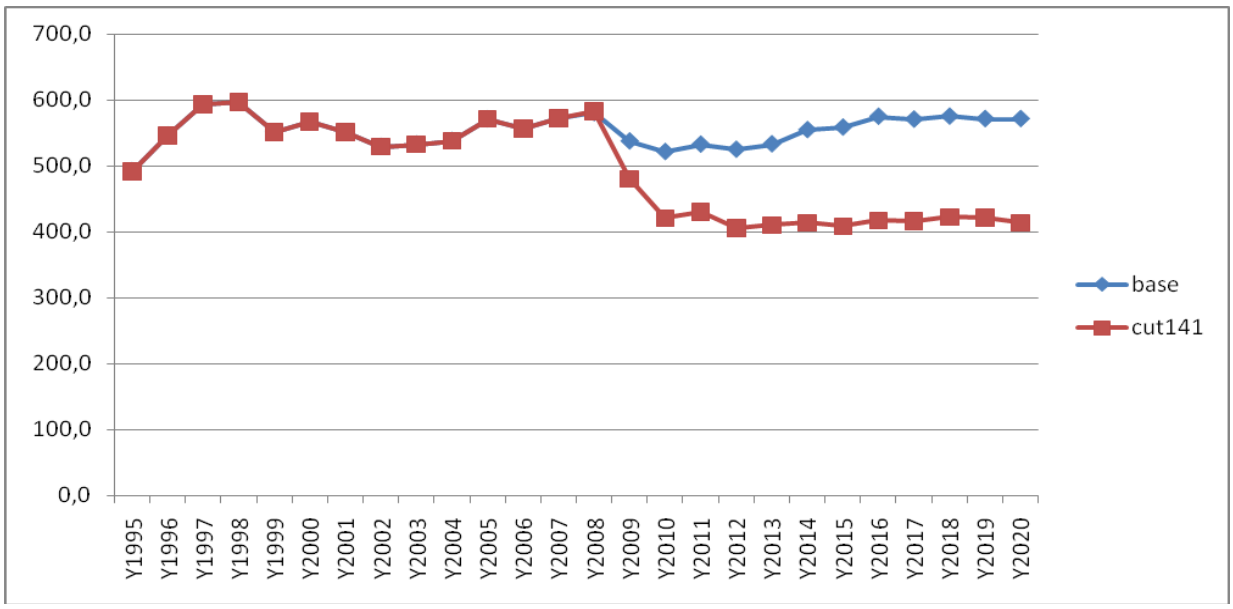


Figure 4.7. Cereal area (1000 ha) in area AB in the base scenario and scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

Based on the results the cultivation area in area AB would be reduced permanently by about 100 000 ha if no income aid under Article 141 had been paid from 2008. A significant share of the abolished aid would

affect the margins of arable farming so that least productive lands would be set aside or completely removed from cultivation. This would take place despite the relatively high prices for cereals (OECD-FAO) because based on the observations from the period 2008–2011 fluctuations in cereal prices are followed by proportionally similar fluctuations in the prices of inorganic fertilisers, which is why the simulations take account of the fact that fertiliser prices rise proportionately by the same amount as cereal prices. The impact on cereal area and the result that cultivation would stop on as many as over 100 000 hectares is to be considered significant affected by assumed inflation in input prices (the average of 1.8%/year), which also when taken to the labour costs weakens the profitability of cereal cultivation, even if the support payments other than those under Article 141 stay the same. The result obtained is partly due to the fact that certain plants, e.g. caraway, as well as sheep husbandry which also occupy land area and function as buffers to change when the cereal area changes are excluded from the DREMFIA model. The small number of alternative plants which also find demand on the market leads to growth in the unused arable area in the results if costs rise above returns because of input price inflation.

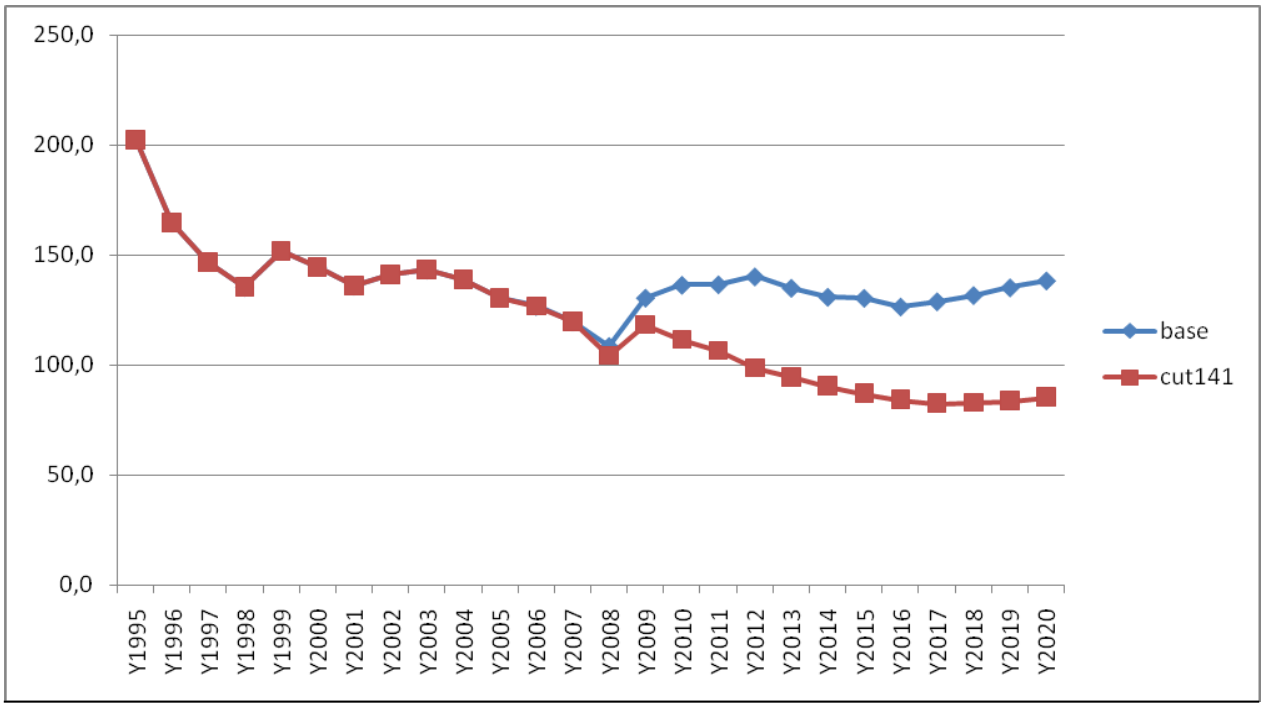


Figure 4.8. Grass area (1000 ha) in the whole country in the base scenario and scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

4.1.7 Horticulture

The most significant one of the calculated aids paid to horticulture in area AB is the aid for greenhouses, which is income aid under Article 141. In southern Finland the aid for greenhouses represents about 60% of all support payments to horticulture paid in area AB, about 15 million euros. Aid for greenhouses accounts for about 12% of the total return of greenhouse production, which means that most of the return on greenhouse production comes from the market.

The whole of Finland constitutes a single market area for greenhouse vegetables, i.e. the production area has no impact on the price of the products. If income aid under Article 141 were abolished in area AB, the difference in return resulting from the difference in the aid (12% of the total return) could not be transferred to the product prices. This would cause the enterprises with the weakest profitability to quit production in area AB as well as reduce new and replacement investments, which in the longer term would lead to reduction and winding down of the production. Part of the production of greenhouse vegetables would probably move to area C where the profitability would be better, provided that the valuation of domestic greenhouse vegetables stays at the present level, while part of the demand would be fulfilled by lower-priced imports. In recent years the share of area AB in the production area of greenhouse vegetables has decreased to the present a little under 40%.

If no income aid under Article 141 were paid for greenhouse production in area AB, the movement of production to area C could be slowed down by the fact that some of the farms in area AB have already invested heavily in developing and expanding their production, which is reflected as a significant reduction in the equity ratio of the farms. The equity ratio has fallen from 60% at the end of the 1990s to the present about 40%, which means that, on average, liabilities account for 60% of the balance of greenhouse enterprises. In agriculture the average equity ratio of farms is about 70%, varying from a little over 60% to more than 80%.

In some types of ornamental plant production the abolition of income aid under Article 141 in area AB (12% loss in total return) could probably be compensated for by means of higher producer prices. Some of the ornamental plant enterprises operate on local markets, which means that the producer prices might adapt to the abolition of the aid. Thus the abolition of the aid would have no significant impact on the number of producers or total production of e.g. group plants.

Instead, in ornamental plant sectors that operate at nationwide markets and common price levels, such as the production of cut flowers, the abolition of income aid under Article 141 in area AB could not be compensated for by higher producer prices. Thus the abolition of income aid under Article 141 would lead to a reduction in the production of cut flowers in area AB. In recent years the production has already decreased strongly due to weak profitability. Most of the reduction in the production of cut flowers would be covered by imports.

The amount of support payments to production in the open in area AB is about 11 million euros, of which national aids represent about 11%. The share of aid in the total return on production in the open is about 8% in area AB. Income aid paid to production in the open in area AB include the aid for special crops in southern Finland and storage aid for horticulture products, which total about 1.4 million euros.

The prices of horticultural products produced in the open vary considerably from one year to another, depending on the crop volumes. The prices are, however, transmitted quite well between the different parts of the country, which is why the abolition of income aid under Article 141 could not be compensated for through product prices in the case of plants cultivated both in area AB and in area C. There is commercial cultivation of apples almost only in area AB, which means that part of the reduction could be transferred to the producer prices and the production level could be maintained, assuming that the consumers' valuation of domestic apples and willingness to pay for these would stay at the present level. Very likely there would be some decrease in the production of certain storage products for which the storage aid is particularly significant, such as white cabbage. A very small share of the reduction could be substituted for by production in area C, because increasing the production area of vegetables grown in the open is not a feasible option due to climate and soil factors. It is far more likely that the possible reduction in the volume of storage products and their domestic supply would be compensated for by imports.

4.1.8 Development of agricultural income

The results above show the importance of the income aid under Article 141 for the production, which in turn has impact on agricultural income. If the production decreased as a result of the abolition of income aid under Article 141 for 2008–2020, the results indicate that agricultural income would fall by a larger amount of money than what was removed by the abolition of the aid. Relative to the base scenario, agricultural income in area AB in southern Finland would decrease by as much as 100 million euros already by 2010 (Figure 4.9). Based on the results, the greatest changes in the production would have taken place already by 2010 if no income aid under Article 141 had been paid from 2008. The quite permanent impact on income after 2010 would be in the order of 95 million euros, which would mean a 36% reduction in agricultural income in area AB compared to the base scenario. Part of the reduction in agricultural income would be due to the removal of as many as 100 000 hectares of arable land from production if income aid under Article 141 were abolished. However, this is uncertain because other support payments require keeping the lands in cultivation, and the trends in cereal prices relative to the input prices may also be more favourable than assumed above. A decrease of at least 85–95 million euros in agricultural income in area AB on a permanent basis can, however, be considered a plausible outcome, should income aid under Article 141 be abolished, even if all arable land were to stay in agricultural use and covered by support payments. The main reason for this is that especially in the milk and beef sectors the abolition of the aid would slow down the growth of farms and productivity improvement and reduce production on a permanent basis.

As shown above, because of the budget constraints for national aids, there is very little room for growth in production and income in area C to compensate for any reductions in area AB (only pigmeat and poultry meat production could stay at a slightly higher level in area C). Based on the result a significant share of the impacts of income aid under Article 141 would materialise already in 2008–2010. If income aid under Article 141 were abolished after 2010, the impacts on at least the pig and poultry sectors would remain smaller, and the income levels would also be less affected. Still, income aid under Article 141 has been highly significant for the development and continuity of production in the livestock sectors. In pig and poultry sectors the aid is now much less important than before, but in milk and beef production it is still highly significant as most of the production in these sectors still takes place in the average economic size classes and the share of the largest farms in the production has remained low compared to many neighbouring countries, e.g. Sweden and Denmark. Structural development and especially the growth in the economic size of farms that is essential for the continuity of the production in area AB would slow down markedly without coupled payments for milk and bovines.

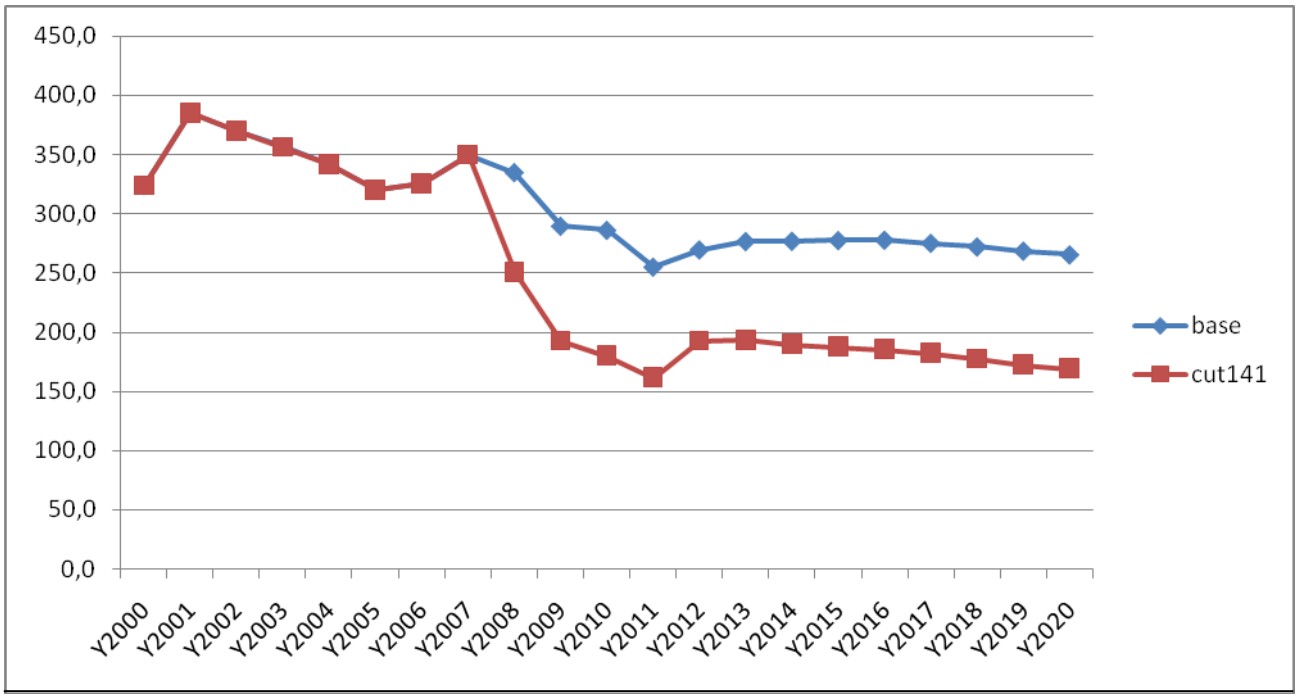


Figure 4.9. Agricultural income (million euros) in area AB in the base scenario and scenario where no income aid under Article 141 is paid in 2008–2020 (cut141). Source: DREMFIA model simulations.

4.2 Role of agriculture and the food sector in the regional economy in southern Finland

4.2.1 Impact of income aid under Article 141 in the economy of area AB

Share of agriculture in the economy of the region in the national accounting

In 2009 agriculture in area AB represented a little less than a half of the total output of Finnish agriculture (42–45%, depending on the level of classification used by the Statistics Finland). Of persons employed in agriculture the share of area AB was about 42% (cf. Table 4.3).

Table 4.3 presents the share of agriculture in the output of the regions covered by the aid under Article 141 by two different classifications of industries by the Statistics Finland, as the share depends on the classification used. In the regional economic agricultural accounts the output of agriculture (14000 Output of agricultural products 10+13) in the regions is 505 million euros lower than in the regional accounts of the national accounting.

Table 4.3. Output of agriculture (incl. support payments) by classifications in the regional accounts (01 Agriculture and hunting) and regional economic agricultural accounts (14000 Agricultural products 10+13). Number of persons employed by classification in the regional accounts (01 Agriculture and hunting). Share of the output and persons employed in the regions in 2009 (million €, persons, %).1 (Source: Statistics Finland, regional accounts 2009 and regional economic agricultural accounts 2009).

Region	Output				Persons employed in agriculture	
	01 Agriculture and hunting	01 Agriculture and hunting	14000 Output of agricultural products (10+13)	14000 Output of agricultural products (10+13)	Number of persons	% of the employed in the region
	Million €	% of output in the region	Million €	% of output in the region		
Uusimaa	235	0,2	164	0,1	3 944	0,5
Southwest Finland	810	2,9	647	2,3	9 986	4,8
Kanta-Häme	226	2,6	207	2,4	3 673	4,9
Päijät-Häme	179	1,9	140	1,5	3 150	3,6
Kymenlaakso	172	1,7	130	1,3	3 251	4,2
South Karelia[1]	130	1,7	109	1,4	2 561	4,6
East Uusimaa	131	1,3	92	0,9	2 059	5,4
Satakunta[1]	424	3,0	379	2,7	5 645	5,5
Pirkanmaa[1]	361	1,3	293	1,1	6 264	2,9
Åland Islands	46	1,9	46	2,0	755	4,3
Regions covered by 141 aid[1]	2 713 (45 % of 01 Agriculture in the whole country)	1,1	2 208 (42 % 14000 Agriculture in the whole country)	0,9	41 288 (42 % 01 Agriculture in the whole country)	*2,5*
Whole country	**6 008**	**1,8**	**5 297**	**1,6**	**98 400**	**4,0**

[1] The whole regions of South Karelia, Satakunta and Pirkanmaa are not covered by the aid under Article 141, while parts of South Savo and Central Finland are covered by the aid

By the classifications used, the direct impact of agriculture in the regions covered by aid under Article 141 on the output of the region varies from 0.1–0.2% in Uusimaa to 2.7–3.0% in Satakunta, when support payment to agriculture are also taken into account (subsidies on products and other subsidies on production). Proportionally the direct employment effect of agriculture is greater than the impact on output. The direct employment effect of agriculture in area AB varies from 0.5% in Uusimaa to 5.5% in Satakunta and 5.4% in East Uusimaa (Table 4.3).

Besides the direct impact agriculture generates income and employment in other sectors in the regions. Direct impacts are created both in sectors producing agricultural inputs and through consumer demand as households use the income they have earned. Acquisitions of inputs and purchases by households raise the GDP share of agriculture by the average of 1.5% (Knuuttila and Vatanen 2008).

Impact of decrease in agricultural production

The simulations made using the DREMFIA model show that the output of agriculture (market returns plus support payments) in the area would decrease by about a third by 2020 if income aid under Article 141 were not paid (see the previous chapter). This chapter describes the impact of the abolition of income aid under Article 141 on production and employment in area AB. In the calculations the output of agriculture without any income aid under Article 141 in 2008–2020 is compared to the output of 2007 including income aid under Article 141.

Calculated by means of the output model of the input-output method, the loss of income in area AB resulting from the decrease in agricultural output in 2008–2020 would total about 9.9 billion euros. The number of persons employed would fall by about 9 500 from that in 2007. Table 4.4 presents the impacts of the decrease in the different years compared to the level of agricultural output in 2007, including income aid under Article 141.

Table 4.4. Loss of income (million €) in area AB in 2008–2020 resulting from the abolition of the income aid under Article 141 and decrease in the number of persons employed in each year relative to year 2007 when income aid under Article 141 was paid.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Income	10	456	629	701	766	791	839	885	914	943	974	994	1019	9923
Employed	97	4259	5877	6551	7160	7385	7838	8269	8542	8807	9101	9288	9520	-

The reductions in total income and employment as a result of the decrease in agricultural production are divided between agriculture and other sectors in the region. The impacts are the greatest in agriculture. During this period the income losses in agriculture total about 5.4 billion, while the incomes of households in the area decrease by about 2.0 billion. Of the decrease in the number of employed persons by almost 9 500 the share of agriculture is about 7 600 persons and that of other sectors about 1 900 persons.

Of the other sectors the decrease in agriculture affects trade the most, with total income losses of about 560 million euros and decrease in the number of persons employed by about 700. The figures included losses in the trade sector due to decrease in both agriculture and consumer demand. Besides trade, decrease in agricultural production impacts on almost all other sectors, especially services relating to real estate management, property and business, and food processing.

Operations in food industry are reduced by the decrease in the demand for animal feed. The calculation does not include impacts of the possible decrease in domestic raw material supply on production in food industry. The assumption is that the food industry substitutes for raw material from area AB by purchases from other parts of Finland or by imports..

4.3 Summary

If no income aid under Article 141 had been paid in 2008–2011 or were paid in 2012–2020, milk production in area AB would have decreased by about 100 million litres (-20%) already by 2011 and then continue to fall even to less than half of the production in 2010 (472 million litres) to the level of about 220 million litres by 2020. The production in the whole country would fall by about the same amount because due to the budget constraints very little of the decrease in production could be substituted for by growth in area C. According to the results, the abolition of income aid under Article 141 would not stop suckler cow production in area AB completely, but the number of suckler cows would decrease by a quarter between 2007 and 2020. This means that in 2020 milk production in area AB would be about 45% and beef production about 40% lower than in the base scenario. The results highlight the importance of coupled aid in milk and beef production sectors. Instead, national aid for pig and poultry husbandry in both area AB and area C have already been almost completely decoupled from the production decisions, except that the eligibility conditions for income aid under Article 141for pig and poultry sectors include that the farm stays a livestock farm by status. Based on the results the abolition of income aid under Article 141 would reduce the production of pig and poultry husbandry in area AB by about 10–15%. The decrease will, however, remain smaller if the price for pigmeat rises more than the feed grain prices.

The decrease in milk and meat production as a result of the abolition of income aid under Article 141 for 2008–2020 would be reflected as much lower demand for feed grain. Based on the results, this would lead to a removal of as many as 170–180 000 hectares of arable land from cereal production and decrease of 50 000 hectares in the grass area in southern Finland. Most of this more than 200 000 hectares would be set aside, while the least productive arable lands in area AB, about 100 000 ha, would be left uncultivated altogether. However, if the real price for cereal rises relative to the input price trend, the decrease in the arable area remains smaller.

In horticultural production there would probably be some decrease if no income aid under Article 141 were paid. Without the aid enterprises in the sector would be faced with structural changes. For most of greenhouse production raising the product prices to compensate for the loss of income would be impossible as this would very likely lead to growth in imports. The total role of income aid under Article 141 on horticultural production volumes is difficult to estimate, but in any case it has a positive impact on income, even if its share in the income of horticulture enterprises is smaller than in agricultural sectors.

To sum up, income aid under Article 141 is highly significant for production and income of agriculture and horticulture in area AB. Based on the results, the decrease in agricultural income in 2008–2020 resulting from income losses due to the abolition of the aid under Article 141 would be greater than the amount of money removed by the abolition of the aid alone. Compared to the base scenario agricultural income would stay permanently at about 95 million euros lower level, meaning that agricultural income would fall by 36%.

Calculated by means of the output model of the input-output method the income loss resulting from the decrease in the output of agriculture if income aid under Article 141 were abolished in area AB during the period 2008–2020 would total about 9.9 billion euros. The number of person employed would be about 9 500 smaller in 2020 than it was in 2007, with about 7 600 of these in agriculture and about 1 900 in other sectors. In the calculation other economic activities are not assumed to substitute for the decrease in agricultural production.

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Annexes

Annex 1. Details of the decision aid under Article 141 for 2008–2013

1. Income aid under Article 141

Based on the decision income aid under Article 141 can be paid for livestock production, greenhouse production and storage of horticultural products, certain arable crops and area eligible for the natural handicap payment (LFA) on livestock farms. In 2008 these payments totalled 93.9 million euros. In 2007 a total of 94 million euros could be paid as aid under Article 141. In the first four years the total amount of aid under Article 141 decreases by the average of 2.7% a year to a total of 62.93 million in 2013. If the LFA payments are revised during the period, this is taken into account in the aid under Article 141 as stated in the decision.

The decrease in the aid varies by product groups. The aid for ruminants decreases the least (milk production and cattle husbandry, sheep, goat and horse husbandry) and the aid for pig and poultry husbandry decreases the most. Part of the payments for livestock production are converted into a payment per hectare. Due to the aid per hectare the total amount of aid for ruminants is at first a little higher than before and the total aid for pig and poultry husbandry decreases less than would have resulted from the decrease in the headage-based aid. The allocation of the aid to individual farms depends a great deal on the ratio between the number of animals and arable area.

1.1. Ruminants

Based on the negotiation outcome the aid for ruminants can be paid in the same way as before as coupled payments during the whole period. Part of the aid is paid as a payment per hectare for livestock farms, which largely compensates for the decrease in the aid for livestock.

1.2. Pigs and poultry

In 2008 the aid for pig and poultry husbandry was paid in the same way as before as coupled payments, but as from 2009 the aid was completely decoupled from the production. Part of the aid is paid as payment per hectare, which partly compensates for the decrease in the aid for livestock.

Eligibility for the decoupled aid is subject to the condition that the farm continues as a livestock farm in accordance with the criteria for the payment per hectare in the LFA scheme. For small pig and poultry farms it is made easier to quit production by paying the decoupled aid for two years after they give up livestock production.

1.3. Horticulture

The aid for horticulture can be paid in the same way as before as coupled payments during the whole period.

1.4. Aid based on the arable area

1.4.1. Payment per hectare for livestock farms

In the beginning of the period part of the aid for livestock was converted into a payment per hectare for livestock farms, payable to farms that fulfil the criteria for the national top-up to the natural handicap payment LFA. The maximum area for which the aid is paid is the area for which LFA support was paid in 2007. The amount of aid during the whole period is 9.69 million euros.

1.4.2. Aid for certain arable crops

Based on the decision aid for specific crops may be paid for the cultivation area of vegetables grown in the open and starch potato. The maximum amount of aid in 2008 is 1.0 million euros. The aid is degressive so that in 2013 the maximum amount is 0.86 million euros..

2. Investment aid and start-up ad for young farmers

The main elements of the decision include investment aid and start-up aid for young farmers. Finland continues to apply raised investment aids in production sectors that receive income aid under Article 141 (investments in the milk and beef sector as well as pig and poultry husbandry, in particular). Because of the market situation, opening up the application process for investment aid in pig and poultry husbandry requires permission from the European Commission. Raised start-up aid for young farmers continues to be applicable as well. The funds to be used for investment aid and start-up aid for young farmers will be a little higher than in the previous period.

Finland reports to the Commission on the implementation of the aid scheme and its impacts on the integration of agriculture in southern Finland to the common agricultural policy in 2012. Article 141 of the Accession Treaty stays an effective and applicable legal basis, which means that Finland may submit a proposal to the Commission on the application of the aid scheme also after the period 2008–2013.

3. Maximum amounts of income aid under Article 141 for southern Finland (million euros) in 2007-2013.

	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Ruminants	27,03	24,32	24,20	24,08	23,96	23,84	22,72
Pigs and poultry	47,69	40,72	37,87	35,22	32,75	25,22	16,00
Horticulture	19,28	18,17	17,63	17,10	16,59	15,59	13,66
Aid based on arable area		10,69	10,66	10,63	10,60	10,58	10,55
Payment per ha for livestock farms		9,69	9,69	9,69	9,69	9,69	9,69
Aid for vegetables in the open and starch potato		1,00	0,97	0,94	0,91	0,89	0,86
TOTAL	**94,00**	**93,90**	**90,36**	**87,03**	**83,90**	**75,23**	**62,93**

Annex 2. Forecasting system for agriculture and horticulture

The forecasting system for profitability and incomes of agriculture and horticulture produces farm-specific forecasts for the bookkeeping farms, taking account of the changes in the product and input prices, support levels and types of support payments. The farm-specific forecasts are used to calcuated income and profitability forecasts by region and production sector.

The forecasting system is static as regards the production structure and technology and physical size of farms, except for changes in crop yields and trend in the avearge milk output, which are taken into account in returns. The changes in crop yields are based on the regional and plant-specific estimates by the Informatioon Centre of the Ministry of Agriculture and Forestry Tike, and the estimated trend in milk output is based on milk production statistics of Tike.

Development of sales returns is forecast by means of producer price indices of agriculture produced by Statictics Finland so that the returns on products are corrected by partial indices and other sales returns by the general index. The development of cost items is forecast in a similar manner using the purchase price indices of agricultural inputs. Besides the index series of the Statistics Finland the price trends are also estimated by means of agricultural price statistics of Tike and statistics of the Finnish Petroleum Federation, Energy Market Authority, Bank of Finland and World Bank.

In the forecasting system the realised agricultural support payments to individual farms, obtained from the Ministry of Agriculture and Forestry, are recorded for the first year of the forecast. Thus in the system, for example, the payments of the accounting year 2011 are final, even if in other respects the results are forecasts. The agricultural support payments per unit of the following years in the forecast are entered to the system by support areas classified in accordance with the support payment accounts used in profitability bookkeeping. The amounts of payments to the bookkeeping farms in the base year are corrected on the basis of the proportional change to the payments per unit. The grounds for the payment are assumed to stay the same. For new types of support the real cultivation areas and livestock numbers are used as the grounds for payment.

The farm-specific results for the years 2011E and 2012E have been weighted by region, production type and economic size class to indicate the average results of the 42 000 largest farms and horticulture enterprises in Finland. The weighting is based on year-specific weighting data which comprise all Finnish farms with standard output of over 8 000 euros. The weighting data for the years included in the forecast were established by forecasting the annual numbers of farms in each production type and economic size class.

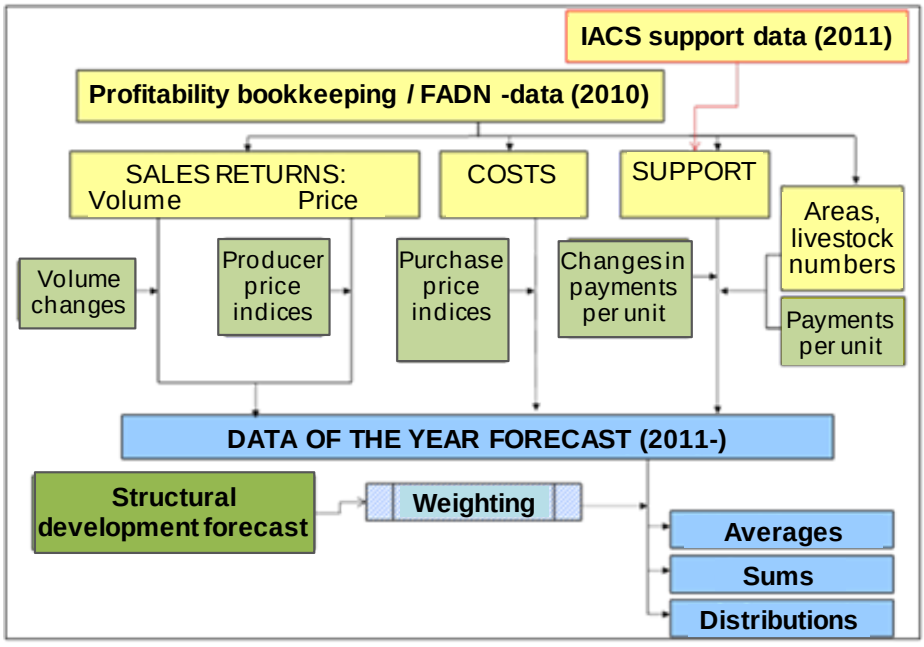

Figure 2.a. Forecasting system of profitability bookkeeping.

Annex 3. Price indices of agricultural products in Finland, EU-27 and reference countries

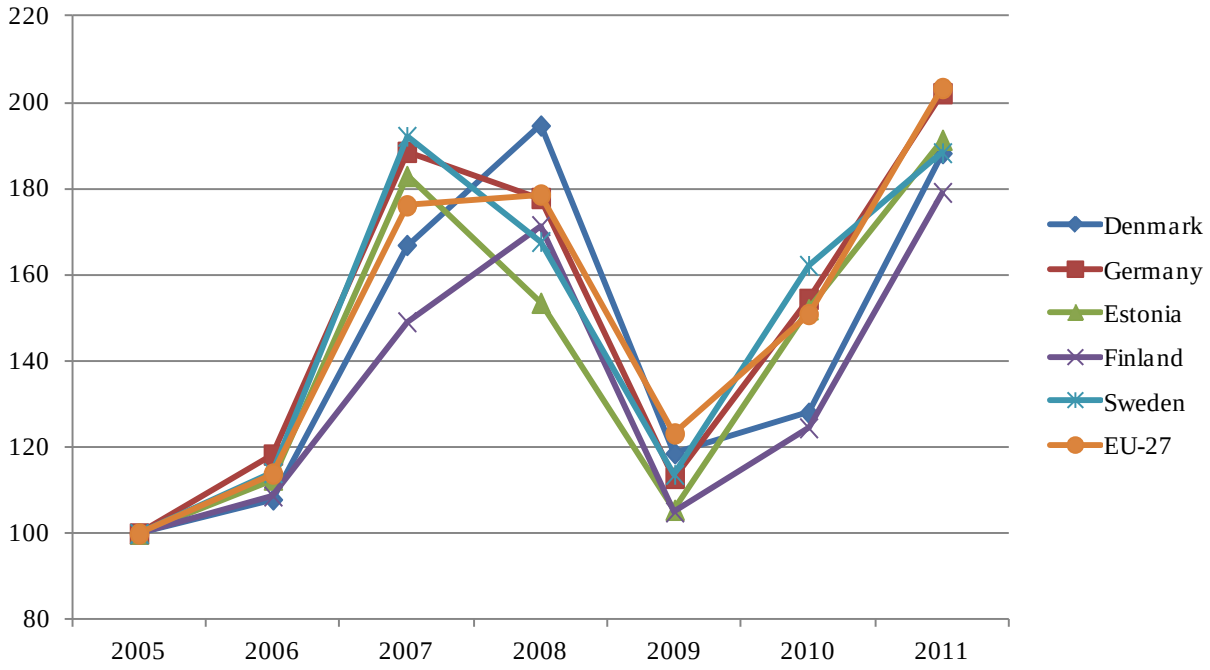

Figure 3.a. Cereal price index in Finland, EU 27 and reference countries in 2005–2011 (year 2005=100) (Eurostat).

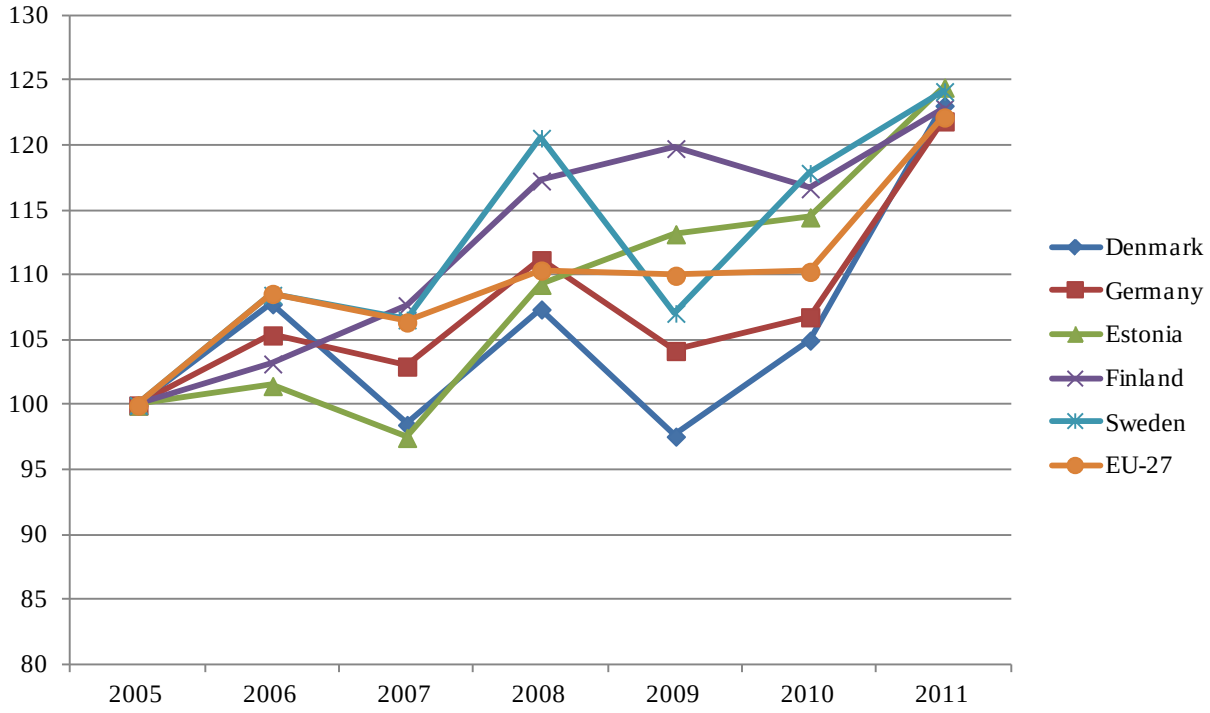

Figure 3.b. Beef price index in Finland, EU-27 and reference countries in 2005–2011 (year 2005=100) (Eurostat).

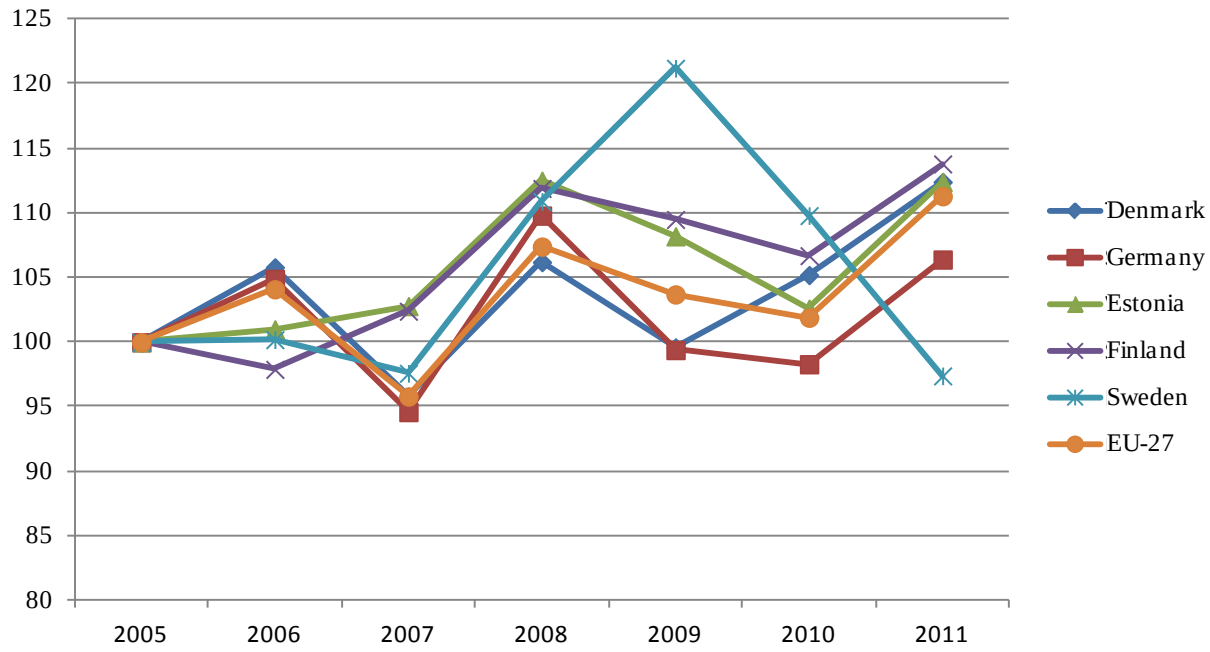

Figure 3.c. Pigmeat price index in Finland, EU-27 and reference countries in 2005–2011 (year 2005=100) (Eurostat).

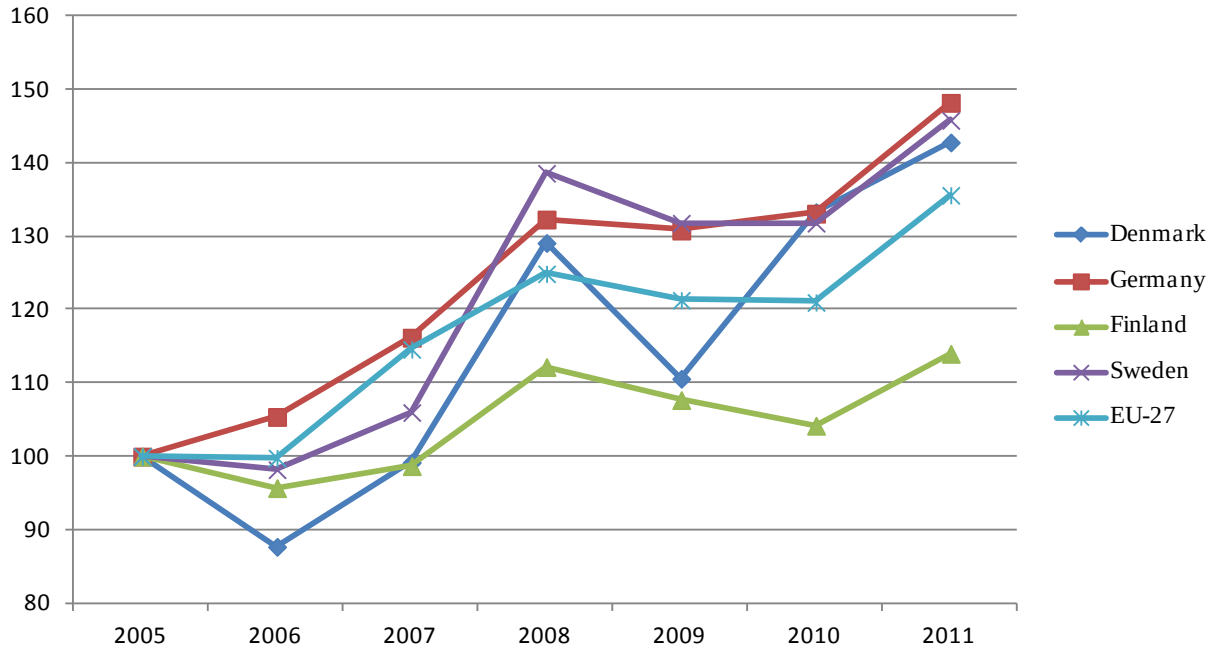

Figure 3.d. Poultry meat price index in Finland, EU-27 and reference countries in 2005–2011 (year 2005=100) (Eurostat).

Figure 3.e. Milk price index in Finland, EU-27 and reference countries in 2005–2011 (year 2005=100) (Eurostat).

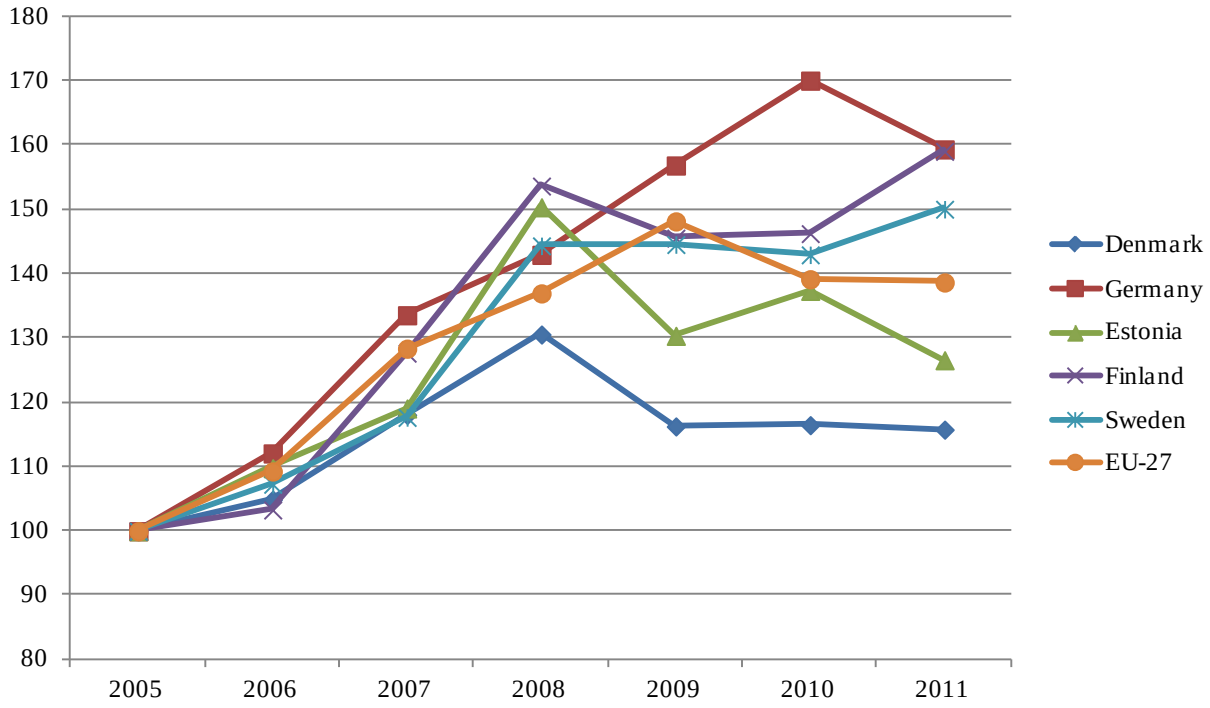

Figure 3.f. Egg price index in Finland, EU-27 and reference countries in 2005–2011 (year 2005=100) (Eurostat).

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