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Some Changes in Structure of Danish Farming, Particularly from 1940-1960.

By Aa. H. Kampp.

Abstract.

Although in the years 1900 to 1960 it has principally been forbidden to abolish or join together Danish farms, there are today fewer properties than at the turn of the century, in spite of the establishment of 30.000 small-holdings with state support. From 1909, with state support, one has been able to procure additional parcels to increase the size of existing small-holdings. This possibility was taken advantage of to the extent that during the whole period there have been established just as many additional parcels as state holdings, and more than twice as many in the years 1940 to 1960.

In an earlier work on the distribution of the total landed property in Denmark (Kampp 1959) the research period ended some 19 years before the results were submitted for printing, due, amongst other things to the fact that the author collected and worked up the material alone since it was a Doctor's thesis. The author is therefore grateful for the economic support from "*Statens Almindelige Videnskabsfond*" (The State Research Foundation) enabling him to have student assistants produce the statistical material which has made it possible to bring the survey up to 1960. The author is equally grateful to "*Statens Ligningsdirektorat*" (The State Directorate of Assessment), "*Statens Jordlovsudvalg*" (The Central Land Board) and "*Det statistiske Departements Landbrugsafdeling*" (The Statistical Department, Agricultural Section), who have given access to the basic material for the enquiry.

The Industrialization of Farming.

The invention of the steam engine was, as is known, one of the most important presuppositions of the "industrial revolution", which radically changed the occupational structure of the western world, but an attempt to introduce the steam engine into farming

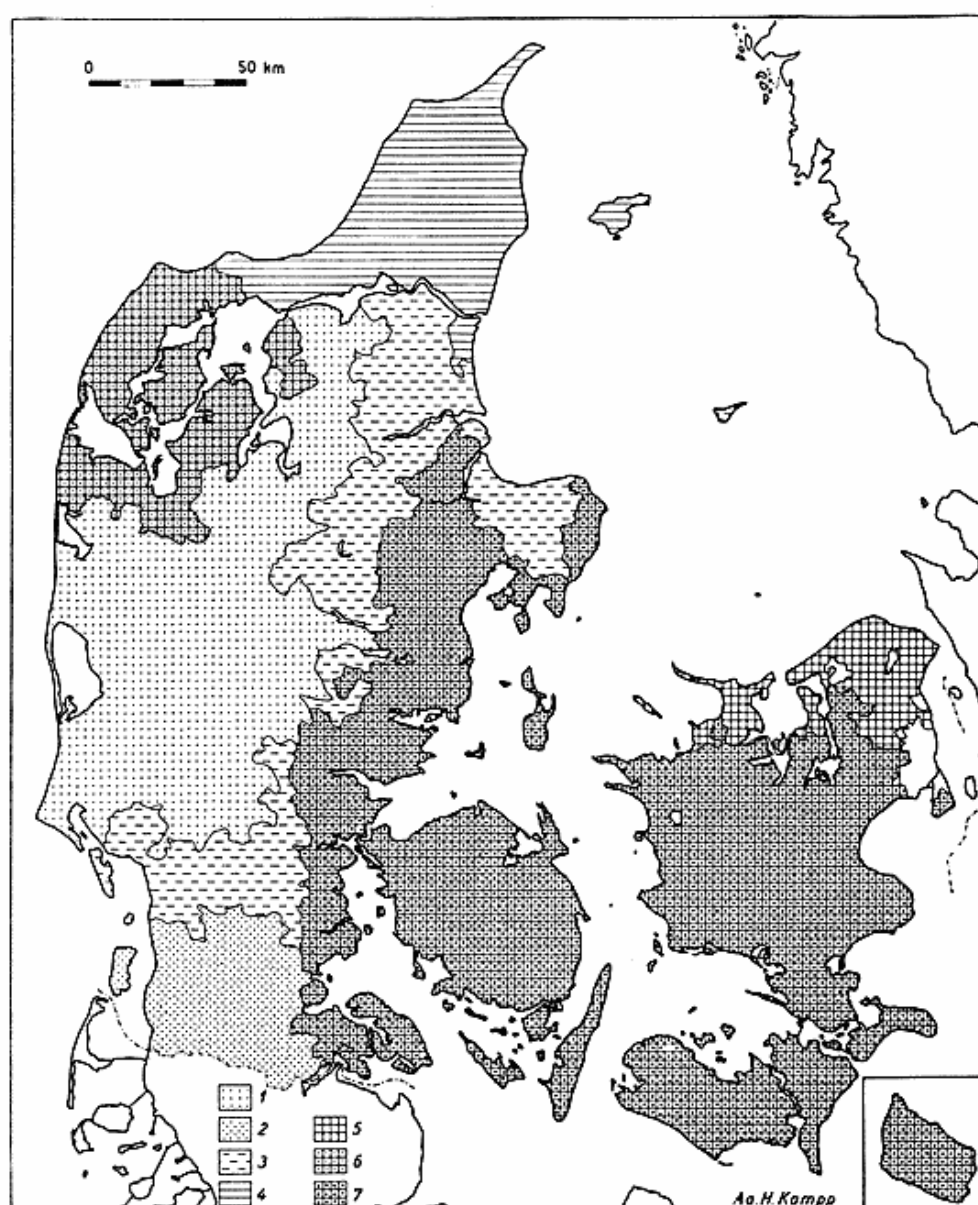


Fig. 1. The division of Denmark into 7 agricultural regions.

Fig. 1. De 7 landbrugsregioner. (På grundlag af kort fra 1907, 1937—1939 og 1946).

in the form of a traction engine was not successful (apart from its use to transport co-operative threshing machines), the technical changes within farming in that period thus being limited to the introduction of certain working machines. It was the petrol and diesel tractor which first became significant as a replacement for horses; industry put the tractor, and working tools especially constructed for it into mass-production, with a notable rise in produc-

tivity as the result: a man can today for example plough a far greater area in the same amount of time with a tractor than with horses. The tired vehicle was introduced, the electric motor has made possible a change to associated working tools in the stable and barn, although mechanization here is less advanced than where work in the fields is concerned.

In the first few years after the 2nd World War the price level fell, but Marshall Aid made it possible for farming during a period to increase the production at a price level which was decided on the basis of a production of smaller quantities; this in turn made possible bigger investment, which especially carried forward mechanization, which was also promoted by rising wages and lack of labour. In that way conditions within Danish farming have changed, in reality the basis has been created for the final break-through of the industrial revolution within agriculture; everywhere our cultural circle is at present the witness to a change within farming, an adaption process with mechanization, rationalization, and specialization of the holdings, the rural way of living has been completely changed, the whole range of thinking is approaching that of the urban population. The farmer's existence, which previously was a way of living, is now to a higher degree a method of earning a sufficient income. The farmer's accommodation is today not very different from that of the urban dweller, as it is just as well provided with modern technical facilities. When once the change over has been made no one can retreat. Mechanization of a number of the holdings means an increased produce at a lower cost. It is unprofitable, in spite of the smaller initial cost, to work with a small machine when a larger one can be served by the same number of people. The highest productivity from labour can only be reached with big machines and such machines naturally pay best on big holdings. An advance in production against falling costs presupposes therefore, that the holding is so big that the machine power can be used effectively. *The smallest size of a fully mechanized holding has to be decided from the possibilities of paying interest and amortizing the invested capital.* Also however, the possibilities of the holder for supervision of the details of daily management play a part, especially in respect of animal production.

The increase in wages in other occupations, together with the lack of labour within farming, has caused a sharper increase in wages in farming than in any other occupation; but the farm wages are still the lowest in the society. Prices on imported raw materials have

been increasing at a higher rate than those of Danish agricultural products. *The mechanized holding can produce more cheaply than holdings run by the old-fashioned methods, and at the same time gives possibilities for a higher standard of living.*

Another consequence is that in many parts of the world there is a tendency towards specialization within the individual holding. It has become more and more common that one branch of production on a farm is given up, since the tendency drives towards fewer and bigger production units, for example cattle, pig or poultry keeping. In the same way as in industry, specialization is the basis of cheaper production; the mixed holding on going over to mechanization demands too many expensive tools. A scythe could pay on a small-holding, a mower or cutter demanded a bigger holding, a self-binder and combine demand still bigger fields. Domestic animals demand more working attention, the mechanization is more difficult and in that lies part of the explanation as to why the small-holdings have till recently been able to compete with the big holdings.

From industry it is known that effectiveness and remunerativeness depend on the spreading of the fixed costs over as big a production as possible; a similar development is involved in the possible industrialization of farming; but at least until recently legislation, motivated especially by social considerations, has supported the opposite tendency. However, in industry the production of an article can be stopped for a time and then taken up again when the stores are empty; in agriculture and horticulture this possibility only exists in part. Farming is more sensitive towards changes in the labour force since only a few men are employed per holding.

Changes in the Size of the Farming Area.

From 1920 to 1955 the total population rose by 36 %, but town and road area rose by 72 %, a doubling of the population seems to demand a quadrupling of the area which looked upon from a farming point of view, may be called unproductive.

	1940	1960
Rotation land	2.657 thous. hectares	2.751 thous. hectares
Farmland	3.218 thous. hectares	3.094 thous. hectares

All detailed statistics can contain mistakes which, however, to a certain degree are eliminated in an overall statistical and cartographic survey of the country. In fig. 2 parish boundaries have been

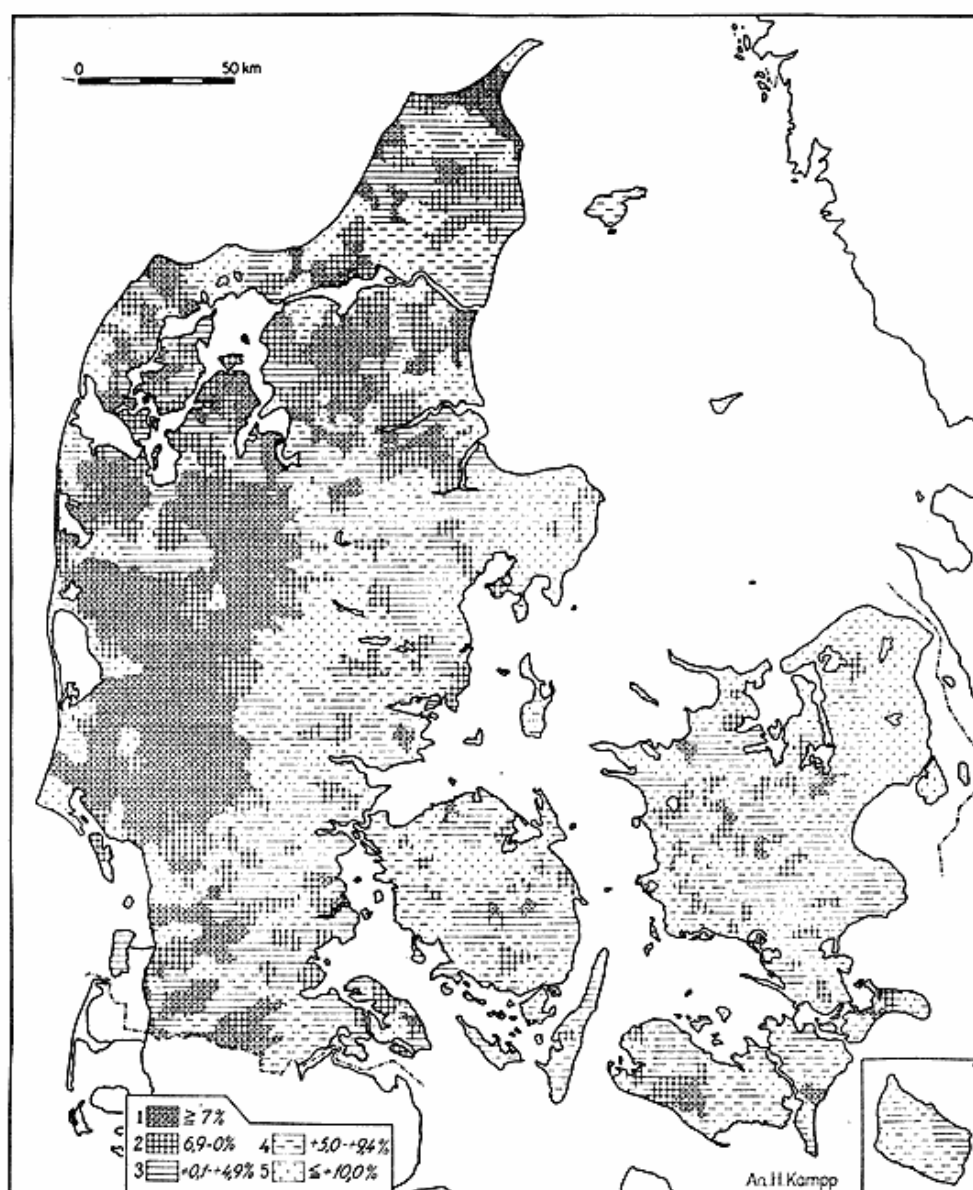


Fig. 2. Changes in the extent of the farming area 1907—60.
(South Jutland 1920—60).

Fig. 2. Forskydninger i landbrugsarealets størrelse 1907—1960.
(Sønderjylland 1920—1960).

left out, partly because they would give a "false accuracy", partly because they would give an impression of greater closeness in heterogenous areas such as Sjælland (Zealand), than in areas with more equal development over a whole row of contiguous parishes. The survey is facilitated somewhat when one notices that all areas with double shading show gains and those with horizontal shading and dots show losses.

In principle there is extremely little difference between this survey fig. 2 and the similar map for 1907 to 1940 (Kampp 1959, fig. 31); the deviations do not stand out until one makes a detailed cartographic analysis. Broadly the strongest advance of farming areas is found in region I, then in II and VI while on the whole there is a decline in the other regions, strongest in region V. The enlargement in region I as a whole is naturally mainly due to the comprehensive reclamation of the heath, which in the main part of the parishes has been greater than the decline due to the planting of trees and to the fact that a few farms recently have declined into heather again.

There can be great differences between areas although the cartographic pattern for each is similar; for instance a standstill can veil the fact that there has been a limited advance followed by a decline, or the other way round, or that there has been an advance in one part of the parish at the same time as there has been a decline in another part of the same parish; in that way there is the same pattern for parts of Djursland as for Bjerre herred (district) in spite of entirely different development patterns. Conversely for example the map pattern in North Djursland is quite different from the one in West Jutland, even though it seems to have gone through the same development in an earlier time (see the map of developments 1907—1940, *Kampp* 1959), because the parallel development took place earlier in East than in West Jutland.

In general districts with an increase of farm area are identical with those worst hit by soil blowing, which seems to indicate that here man had enlarged the farming area to a greater degree than was suitable by taking in soil of doubtful value from "the marginal lands" for farming purposes. Soil blowing has started on fine-sandy farmland in this period, because amongst other things, as has been pointed out by *Kuhlmann*, in Jutland an extension has taken place of the areas of cultivation of plants which leave the field bare during the spring gales (spring seed and beets), instead of winter seed and grass areas.

About 1940 Denmark reached a farm area which covered $\frac{3}{4}$ of the total land area, but it has since declined. Namely from 1940—1960 by 124.000 hectares, or on average over 6.000 hectares (2‰) per year, corresponding to more than the average size of a Danish holding *per day*. However, the decline as pointed out (*Kampp* 1943), started already earlier. At the same time the farming area outside rotation has declined by 218.000 hectares, whilst the tilled area has

been enlarged by 94.000 hectares, so that it now covers 89 % of the total agricultural area, 60 % of the total land area. But a great deal of the use of farmland for other purposes (traffic, buildings, gardens, roads, industrial plants, and the more or less temporarily socially fallowed areas around the towns) occurs to the cost of the best part of the rotation areas.

The extension of the area which has occurred through heath reclamation, drying out or other types of reclamation, has taken place by private initiative with support from the ground improvement law (*grundforbedringsloven*) of 1933 (550.000 hectares drained) and the reclamation law (*landvindingsloven*) of 1940 (over 100.000 hectares). The revision of the reclamation law in 1953 made way for reclamation from sea areas.

Part of the land which disappears from farming changes into private kitchen gardens, whose production per hectare is far higher than that of the farms, but it does not appear in farming statistics. Still more productive than the private gardens are the market gardens and especially areas for industrial use. But the latter can be just as productive on soil of slight agricultural value. Commercial horticulture made up 18.000 hectares in 1940, 23.000 hectares in 1960.

Alterations in the Use of Farming Areas.

The ever smaller labour force available, and the effective fight against weeds, encourage an extension of grain growing; working in the same direction is the fact that the marketing possibilities for other crops are very limited, and also the low prices for cattle products have not encouraged an extension of the crops necessary for cattle breeding. Also the special support for grain growing which is found in the "grain conditions" has given extra encouragement to an extension of grain areas. From 1940 to 1960 therefore, the grain areas increased from 1.291.000 to 1.444.000 hectares or over half the rotation area. The winter seed area was almost unchanged, while barley now takes up more than half the grain area. The root crop areas showed a small increase from 518.000 to 567.000 hectares, whilst green fodder and grass areas decreased from 759.000 to 637.000 hectares and grass outside the rotation from 561.000 to 340.000 hectares. Root crop areas demand more work — 100 man-hours per hectare — than green fodder crops (*Olsen* 1962). For a grass field there is usually used only $\frac{1}{3}$ as much manure as for a beet field; it gives about $\frac{1}{2}$ as great a calorific yield, but a larger

protein mass per hectare and 4—5 times as large a yield per unit invested capital. Moreover, green fodder crops demand a considerable capital for producing the necessary silo capacity, but on the other hand the silage can be kept from year to year and to a certain degree can compensate for fluctuations in raw fodder production.

Increasing Yields.

In spite of the decline in quantity and quality of the farming area there has been a rise in production of 2 % per year, because of the planting of refined types of seed which give better yields; extended use of artificial fertilizers and chemicals against plant diseases, mechanization, rationalization, ground improvement by draining and marling — not only on newly cultivated soils but also on the ones which have been cultivated for centuries; thus first and foremost because of the close cooperation between scientific research and practical farming in Denmark. The somewhat lighter soils have caught up, as to yields, with the heavier soils. The total yield of plant production rose from 115.000.000 crop units in 1940 to 142.000.000 in 1960, and the yield of domestic animals rose even higher because of the increased import of feeding stuffs and the above mentioned increase in plant production together with the continuing progress in the refinement of domestic animals and feeding science. The number of horned cattle was bigger than ever in 1960. The same is true of pigs and poultry.

Mechanization and the Labour Force.

Danish farming has in the last 20 years increased its productivity by nearly 40 %, not only on a diminishing area of inferior fertility but also with 40 % smaller labour force. The farming population, which 200 years ago totalled 75 % is today only 17 %. The number over the last years has fallen by 10—12.000 per year and during the years 1940—1960 the number of outside labour has fallen from 199.000 to 82.000. This fall has to a lesser degree affected the small-holdings where the family's own labour has always been the most important. On the bigger holdings they have to a higher degree managed to compensate lack of labour by technical improvements; the number of tractors rose from 2.500 in 1936 to 111.000 in 1960, combines from 0 to 8.900 at the same time as the number of horses decreased from 575.000 to 170.000 so that now only $\frac{1}{3}$ of all holdings possess horses. Milking machines are now found on 70 % of holdings, which means that at least 90 % of the cows are machine milked

since it is essentially the small herds that are hand milked.

While mechanization has thus been a necessity for the maintenance of production on the large holdings, it has at the same time by reducing the need for labour cheapened production whereby there have arisen new problems for the small-holders. With the present level of mechanization, farming would not be able to employ the many people who have left it, and the smaller the amount of money to be earned in farming the fewer there ought to be to share the profit. If the number of workers was greater production would be still higher and would create lower prices and still greater difficulties of marketing (*Skovgård* 1962).

Changes in Land Distribution 1900-1960.

Generally speaking evolutionary tendencies have given direction to the Danish land legislation and not the other way around. "Land laws start as reform bills and end as anachronisms" (*Tholstrup* 1963). During the whole of the 20th century the government, by parcelling out, has set up state holdings (*Kampp* 1959) and the legislation has tried in vain, until 1962, to prevent the joining up of holdings.

It is impossible to gather any reliable statistics of the total number of holdings in the last few years; there are in use several different sets of operational statistics notably in the assessment of properties and in the Agricultural Section of the Statistic Department, thus for one thing the minimum size is different (respectively 0.55 and 1 hectare), also urban areas are not included in the assessment, and there are a number of other smaller differences in the methods of counting. On an earlier occasion (*Kampp* 1959) the author counted up the holdings in 1904 and 1940, according to a common criterion of individual property farms. The statistical number does not fluctuate a great deal even though it has gone down since 1950 (but far less than in reality, as many farmers are administering several holdings together). According to law the owner should have, even in 1960, lived in the buildings belonging to the ground. But it has been proved (*Kampp* 1959, 1960) that practice has for a long time in some parts of Denmark been counteracting the parcelling laws since there are, in spite of the setting up of 30,000 state holdings up to 1960, hardly more properties in Denmark than at the turn of the century, probably in fact fewer. Unfortunately the available property statistics give a false picture of reality. In the period during which parcelling became strongly supported by legislation, there were on average only 150

holdings erected per year over the whole country, compared with the rate of 900 per year between 1850 and 1900 when there was no state support of parcelling. However, it must be stated that at the same time there occurred an increase in the farming area of between 20 and 30 %, while the increase in the number of properties (of which a great many were too small to be termed holdings) went up 38 %.

According to information from the Land Registry Office (Matrikelsdirektoratet) about 160 properties per year between 1953 and 1960 disappeared due to combination (1960: 230, 1961: 382, 1962: about 500; even though the number of combinations is still rising, the movement is in fact losing momentum).

Many country dwellers still figure in the population register as farmers, and the farms in the statistics as independent, even though they are administered by others and the owners have become industrial workers. There are examples of up to 5 farms of 50—100 hectares being administered together.

1940-60.

It has been discussed in this period whether the small-holdings are not out of date. The capital and labour stake on the one hand pays best on the big holdings, but on the other hand production is bigger per unit area on the small holdings, where greater attention is paid to animal production which still demands a large labour force, while the big holdings lay greater stress on crop production which can more easily be mechanized. Also emphasized in this discussion, are the human values which are attached to small-holdings where the family itself has the responsibility of its property. The demand for state holdings has, over the later years, been less, after the time when additional parcels for the extension of existing holdings could be obtained from 1909, according to the 1899-law, and from 1919, according to the October laws of the same year. The histogram (fig. 3) is built on official figures, mainly for the period 1/4—31/3, though for state tenant holdings from 1920—1940 from 1/1—31/12. Here for practical reasons a shifting quarter is used, the inaccuracies that arise because of that are not important, since they are not visible in the scale of measurement shown. The dotted histogram shows the number of additional parcels, for the period 1/4 1909 to 31/3 1939 there is only an aggregate amount and the number per year is given as the average for the whole period.

Thus nearly as many additional parcels as state holdings have been established in the first 6 decades of this century, with the onset of

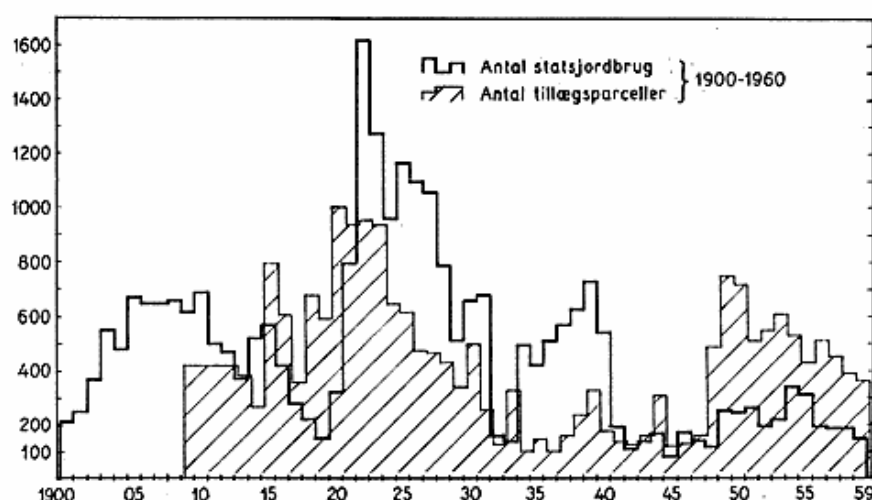


Fig. 3. Total state holdings and total additional parcels established 1900—60.

Fig. 3. Antal statsjordbrug og tillægsparceller 1900—1960.

additional parcels being somewhat delayed, which must be due to the fact that holdings at their establishment must have been thought to have had a suitable size, but after a few years they were smaller than holdings established at a later date and therefore a wish for additional lots arose (the average size of state tenant holdings was from 1920—1930 about 7 hectares, 1930—1940 about 10 hectares, from 1940—1960 about 13 hectares, the 1899-holdings were in the beginning 1—4 hectares, 1955—1960 about 13 hectares). Since 1940 the establishment of state holdings has been of slight amount. After 1948 the allotment of additional parcels has increased a great deal indicating that the need for increasing size of holdings has been bigger than the need for new holdings. From 1941 to 1960 there were founded altogether twice as many additional parcels (7.300) as state holdings (3.600).

In the 1940's there was established a total of 1918 state holdings and 2537 additional allotments, in the 1950's total of 2329 state holdings and 5059 additional parcels. But whilst in the 1940's nearly as many holdings were set up on state loan conditions (954) as under ground rent conditions (964), in the 1950's holdings were established especially under the old law conditions (1674 as against ground rent conditions 695); for the additional parcels the figures were 1784 and 763 in the 1940's and 4784 and 296 in the 1950's respectively.

The 1899-holdings during the years 1940 to 1960 (fig. 4) were especially established in West, Middle, and North Jutland, in other words in regions I, II, IV, and VI (fig. I), that is in quite different

areas than from 1900 to 1904, (*Kampp* 1959, fig. 38), when it was particularly East Jutland, the Limfjord area, and Sjælland, 1904—1920 (*ibid.* fig. 43), where it concerned the whole country, mainly East Denmark, and partly 1920—1940 (*ibid.* fig. 43) where the holdings were situated particularly in regions VII, III, I, VI. The state tenant holdings established in the last two decades (fig. 5) on the other hand lie especially in South Jutland and scattered areas in East Denmark, as is the case with the ones established 1920—1940 (*ibid.* fig. 44), also around Limfjorden, especially its eastern part. The vicarage state tenant holdings ("glebe lands") lie wholly in South Jutland, where until 1940 not one single holding was established, because the vestry societies had the right of nomination to the living, as long as they owned the vicarage land.

The additional parcels, whose geographical distribution was not published in the mentioned works, only in "The Splitting up of the Majorats" (*Kampp* 1960), are with reference to the 1899 parcels (fig. 6) mainly lying in region VII (especially on Sjælland, Fyn, Samsø, and in East Jutland), VI, IV, III and II; thus in the islands numerous requests have been put forward concerning state loans for these but very few concerning loans for new state holdings. The additional parcels under ground rent conditions (fig. 7) lie mainly in regions VII and II plus some in IV and VI. The vicarage land additional parcels are entirely in South Jutland. In other words the additional parcels are mainly in region VII (plus vicarage land in South Jutland), where the majority of state holdings were established from 1900 to 1940.

The geographical distribution of state holdings under state loan conditions as against ground rent conditions seems largely psychologically decided, since the population in western Denmark seem to have an aversion against choosing ground rent conditions; when they themselves had been able to procure a piece of land, which was comparatively easy, because in West Jutland there has been a great propensity towards private partitions of property (there is still a free choice between state loans and ground rent conditions for the lessee). Furthermore there is the fact that the Central Land Board has been less interested in procuring West Jutland land because the prices have been higher as compared with the assessment of the ground value than further east. Moreover because of the low ground value assessment there are fewer West Danish properties subjected to the right of the state to be the first buyer. In East Denmark the Central Land Board has bought up ground area (perhaps under the

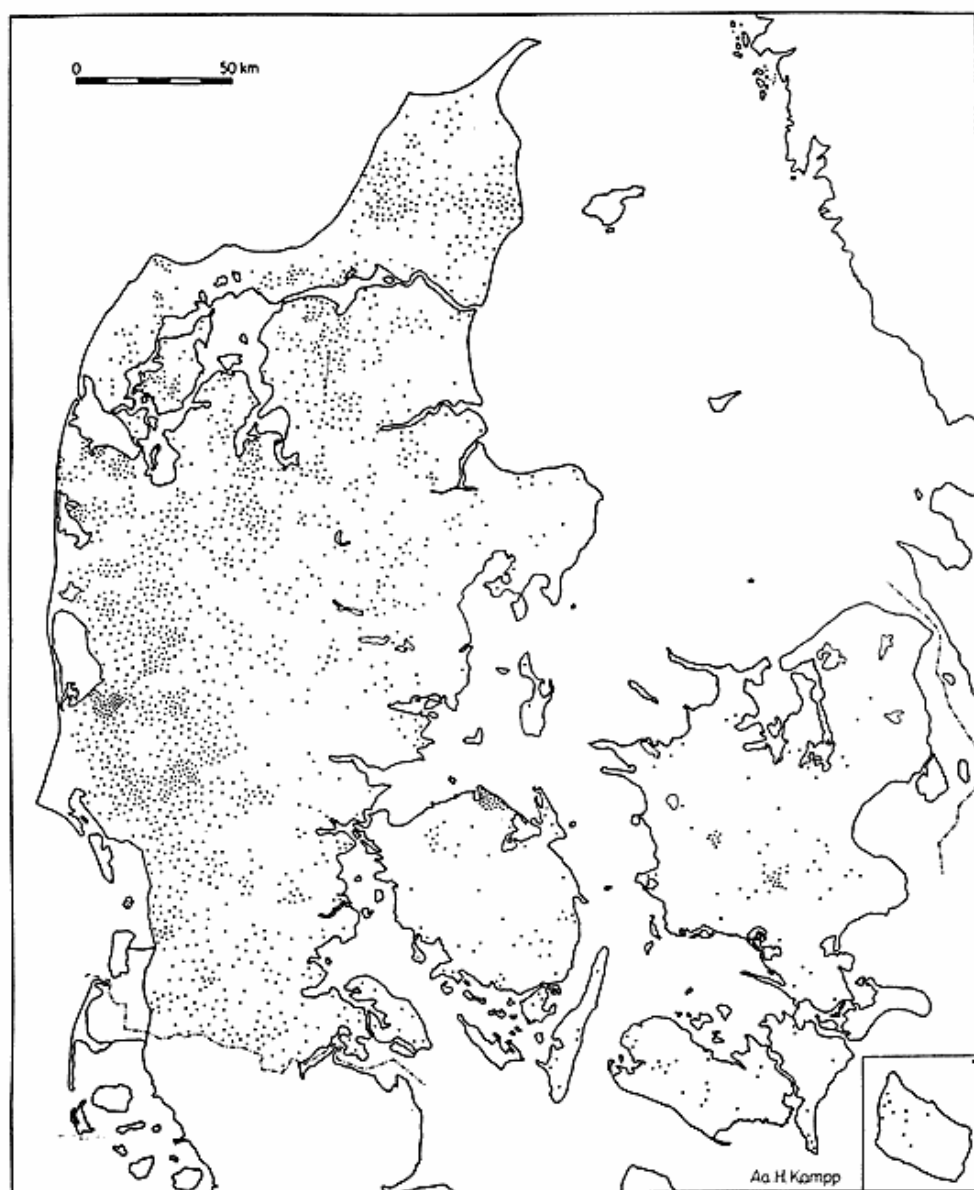


Fig. 4. State holdings set up with state loans 1940—60 (each dot = 1 holding).

Fig. 4. Statsjordbrug på statslånsvilkår 1940—1960.

use of the preemption right) and put it up for sale on ground rent conditions. From 1943 the state had certain rights of preemption, namely towards burnt down properties of a ground value of over 12.000 kr. which were offered for sale, properties with a ground value of over 20.000 kr. at an executor's sale, and the estate of a person deceased offered for official sale. From 9/6 1948 the state got right of preemption to any property of a base value of over 35.000 kr., which was offered for sale (moreover in certain circumstances for



Fig. 5. State tenant holdings established 1940—60 (each dot = 1 holding).

Fig. 5. Jordrentebrug 1940—1960.

properties of under that amount). By base value is understood the figure put as the starting point for the calculation of the assessment of the rise in ground value duty. From 1951 the amount of 1950: 56.000 kr. became the foundation of the calculation.

Furthermore the Central Land Board took over according to the confiscation law the farming ground of Haraldsted near Næstved and parcelled it out into 10 state tenant holdings plus a large central parcel; from Fussingø near Randers, similarly some state tenant



Fig. 6. Additional parcels set up with state loans 1940—60 (each dot = 1 holding).

Fig. 6. Tillægsparceller på statslånsvilkår 1940—1960.

holdings were parcelled out while the rest was granted to the State Forestry Commission, on the other hand Slingerupgård near Ringsted and Kalø manor were sold unpartitioned. About 80 properties in South Jutland were taken over from the "Kreditanstalt Vogelgesang" and "Höfenverwaltungsgesellschaft", and because of sympathetic war profiteering Dronninglund manor was taken over for parcelling out.

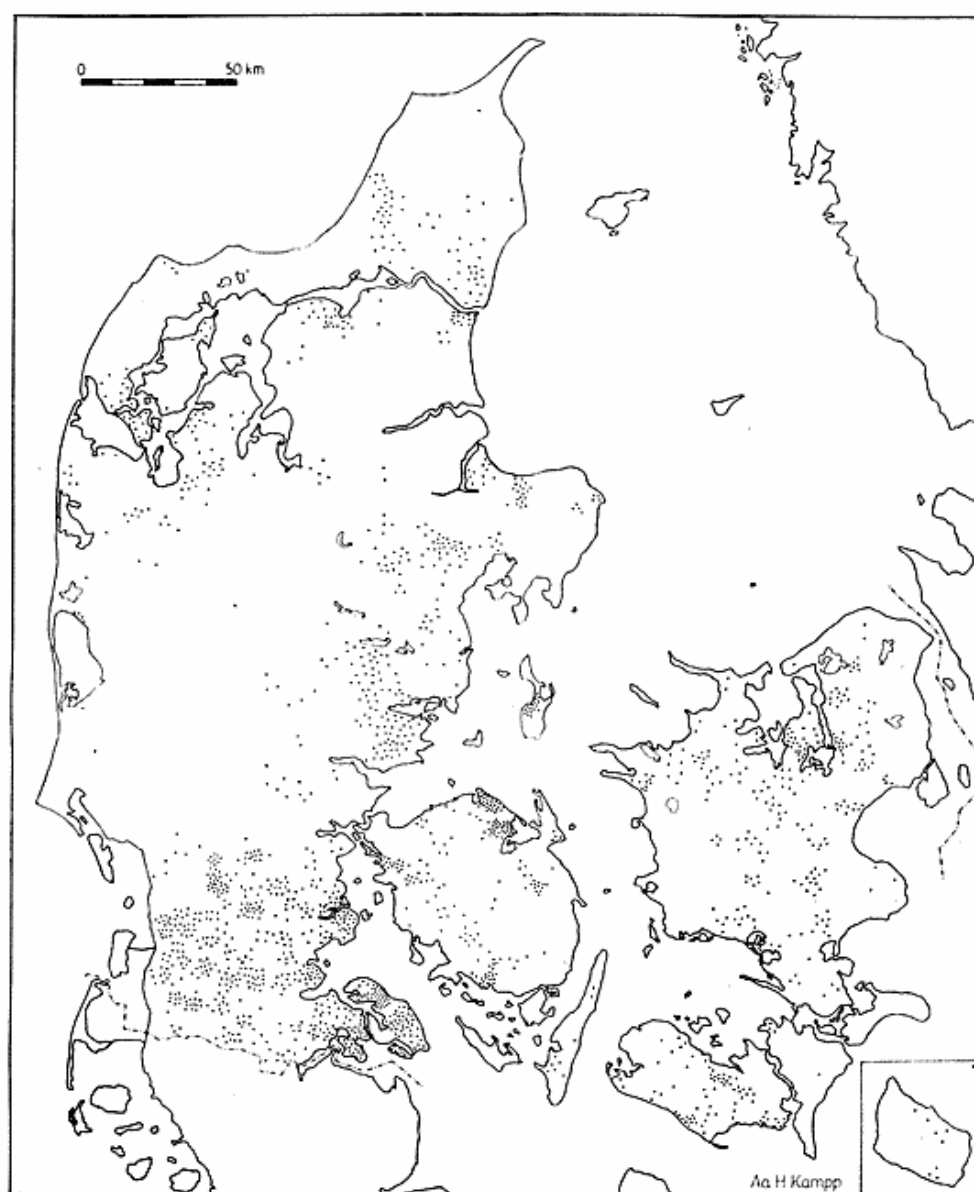


Fig. 7. Additional parcels set up under state tenant conditions 1940—60 (each dot = 1 holding).

Fig. 7. Tillegsparceller på jordrente vilkår 1940—1960.

Future Prospects.

Thanks to the cooperative system and the wish to keep certain social and human values, the small holdings have until now survived, but the natural consequence of mechanization and of departing farm labour must be a demand for fewer holdings. The task of the future will perhaps be to create the biggest possible production per man per working hour, since the possibility of an increase in income depends,

among other things, on making production cheaper by the continued saving of labour. The production mentioned in the above relationship is bigger in industry than in farming; therefore farming incomes are smaller than those of industry. Development goes so fast that, what one with reliable certainty thought to be able to anticipate a year ago is undergoing a rapid change on account of quite another problem situation including land planning, zone planning, area plans, market viewpoint, and price changes.

It should be possible to find lines of direction for a simplification of the production through a regionalization plan, a plan as to how a possible specialization should be distributed geographically. The analysis that would be the basis for such a specialization plan must also include valuation surveys (*Kampp 1959*). But perhaps soil, climate and water supply will not be the only deciding factors; attempts at specialist regions are found on the basis of a common consultant, mutual attempts at cultivation, and the use of waste products: Samsø potatoes, Lammefjord carrots and asparagus, with mutual treatment of the carrots, e. g. washing, sorting, storage, and transport; peas, which earlier were a small-holder's crop have now started to be a large farm culture, the canning factories work at concentrating cultivation regionally in large fields, because the machinery is large and specialized. The factories have therefore the possibility of directing all parts of the cultivation so that the farmer's share is limited to tending the ground. The factory decides the sowing and harvest times, delivers the seed and takes care of the control of diseases; furthermore one could mention the regionalization of lucerne for lucerne flour. There can also be seen a tendency towards the establishment of industrial pig-breeding centres and "egg-factories"; and to more extensive cultivation of the "marginal lands" with extended grass areas for cattle in contrast to the grain soils of the east where many have turned to cattle-less farming, though one hereby loses the advantages of the beet fields and the stable manure in the rotation system; finally may be mentioned sugar beets to the factories (which has always been decided regionally). The transport problem is no longer of such decisive importance as when *von Thünen* put up his well known system of the relative situation of different production areas. But the farmers are aware of the dangers of one-sidedness which brings dependence on price conditions of a single set of production, and of the fact that both green harvesters and combines, as well as to a certain degree stable buildings, are to some extent seasonal investments.

A holding can in that way reach such an uncomplicated state of administration that a single man can manage a great area without outside help, perhaps 40 to 50 hectares, but even an economically advantageous change will generally not take place before the income difference reaches an important size and there is common confidence in that the difference will not diminish again. A natural consequence of the technical development seems to be the stopping of parcelling out. The number of small-holdings have been reduced over the last 10 years by 10 %, and the average size of holdings has increased by 0.2 hectares. The interest in the establishment of state holdings seems to have stopped completely; while there were 250—275 applicants per year in the mid-1950's, since 1957 there have been consecutively 172, 170, 133, 68, 40 and 33, and in 1963 still fewer are expected, whereas over 500 small-holders per year express the wish for additional ground.

The small-holders have naturally several possibilities, 1) to avoid mechanization, which will mean lower costs but harder work and smaller income, or 2) to specialize in a) domestic animals with bought fodder at the risk of overproduction or b) in crops for direct consumption for instance horticulture, market gardening or fruit plantations, or 3) they can concentrate on industrial work plus "part-time" farming, or 4) they can join together into larger units on a cooperative basis and cooperate in production itself by means of machine stations, cooperative stables or other cooperative works: thus the rationalization of farming apparatus and the concentration of production, which up till now particularly has been found in the concerns working up the farming products, will perhaps in future also be used by the farming properties themselves.

In 1899 there were a number of socio-political arguments for the small-holding legislation. There was a wish to reduce the number of landless farm workers, hinder the movement to the towns in order to stabilize the reserves of the labour force for the big holdings. To that was added the economic argument that the intensive animal production was more profitable than the more extensive vegetabilistic. But conditions have changed so that the urban trades can easily absorb the superfluous rural labour and so that prices of vegetable products have risen more than those of domestic animal products. A greater part of the work will surely in future be transferred to industry, not only the production of labour saving machines, but also for instance ready made fodder and manure preparations.

It is a political question as to how the future farming develop-

ments will be organized, whether one will favour the traditional social advantages of the family holding or the economic advantages of a new structure. Reference has been made to the "two family holding" as a solution, where two families have a permanent working place in one holding.

It is a fact that a structural change has started: there is a political disagreement as to how quickly it should proceed, but on the whole there is an agreement that the aim must be a larger production per man per working hour. Thoughts concerning a forced change have never been proposed and most people wish for a legislation which would not greatly hamper a natural development. The law of 1962 permits the joining up of property, although not of more than 20 hectares of medium value soil, and a farmer can now fully legally own 2 properties (more under certain conditions).

RESUMÉ

Om dansk landbrugs strukturændringer, specielt 1940-60

En tidligere undersøgelse af forskydningerne i antallet af landejendomme i Danmark (Kampp 1959) sluttede undersøgelsesperioden 19 år før resultaterne forelå trykt, hvilket bl. a. var nødvendiggjort af, at forf. ene mand samlede og bearbejdede materialet, idet det drejede sig om et disputatsarbejde. Forf. er derfor »Statens almindelige Videnskabsfond« taknemlig for økonomisk støtte til studenterassistance ved fremstilling af det statistiske materiale, der har gjort det muligt at føre undersøgelsen frem til 1960 allerede på nærværende tidspunkt, ligesom forf. skylder tak til Statens Ligningsdirektorat, Statens Jordlovsudvalg og Det Statistiske Departements Landbrugsafdeling, der har givet adgang til undersøgelsens grundmateriale.

Omkring 1940 nåede Danmark op på et landbrugsareal, som omfattede $\frac{1}{4}$ af landets samlede areal, men siden er det gået tilbage, 1940-60 således med 124 tus. ha eller gennemsnitligt over 6 tus. ha eller ca. 2 promille årligt, svarende til mere end den gennemsnitlige størrelse af en dansk landejendom om dagen. Tilbagegangen begyndte dog, som påvist (Kampp 1943) allerede tidligere.

	1940	1960
Samlet landbrugsareal	3 218 tus. ha	3 094 tus. ha
Omdriftsareal	2 657 - -	2 751 - -
Landbrugsareal udf. omdr.	561 - -	343 - -
Erhvervshavebr., frugt m. m.	18 - -	23 - -
Kornarealer	1 291 - -	1 444 - -
Rodfrugtarealer	518 - -	567 - -
Grønfoder og græs	759 - -	637 - -
Græs udenf. omdriften	561 - -	340 - -
Høst i A-E	115 mill.	142 mill.
Fremmede medhj. i landbruget	199 tus.	82 tus.

Samtidig er landbrugsarealet uden for omdriften gået tilbage med 218 tus. ha., medens agerarealet er forøget med 94 tus. ha., således at det omfatter 89 % af det samlede landbrugsareal, 60 % af landets samlede areal.

Men en stor del af forbruget af landbrugsjord til andre formål sker på bekostning af den til landbrug bedst egnede del af omdriftsarealet. En del af den anvendes dog til private køkkenhaver, hvis kalorieproduktion pr. ha er langt større end landbrugets, eller til endnu mere produktiv gartnerijord.

Som fig. 1-2 viser har der været stærkest fremgang i landbrugsarealets størrelse i regionerne I, II og VI, medens der gennemgående er tilbagegang i de øvrige regioner, navnlig V. Hedeopdyrkningen synes således i størstedelen af region I at have været større end tilbagegangen på grund af plantageanlæg og genopgivne arealer. Hovedområderne med fremgang i samlet landbrugsareal falder stort set sammen med områder, der er hårdest ramt af muldflugt, hvilket synes at antyde, at man her har udvidet landbrugsarealet ud over det formålstjenlige ved at inddrage jord af diskutabel værdi til landbrugsformål. Jordfygning er sat ind på finsandede landbrugsjorder, bl. a. fordi der i dette tidsrum, som påpeget af *Kuhlmann* (1960) i Jylland er foregået en udvidelse af arealerne af sådanne kulturplanter, der lader marken ligge bar under forårsstorme (vårsæd og roer) på bekostning af vintersæd- og græsarealerne.

Kornarealerne er nu for hele landet øget til over halvdelen af omdriftsarealet, animeret af en stadig mindre arbejdsstyrke i landbruget, en effektiv ukrudtsbekæmpelse, »kornordningen«, de lave priser på kvægavlsprodukter og de begrænsede muligheder for andre salgsafgrøder. Vintersædarealet er nogenlunde uændret siden 1940, medens byg nu indtager over halvdelen af kornarealet. Rodfrugtarealerne viste en lille stigning, medens arealerne af grønfoder og græs i omdriften og navnlig af græs uden for omdriften gik stærkt tilbage.

Den danske planteproduktion er i løbet af de 20 år øget med 40 % ikke blot på et stadig mindre areal af stadig ringere frugtbarhed, men også med en 40 % mindre arbejdsstyrke. Som følge af nedgangen i arbejdsstyrken har mekaniseringen været en forudsætning for produktionens opretholdelse på de store brug, hvor den har billiggjort produktionen og dermed rejst nye problemer for det mindre brug.

På langt sigt har udviklingen været retningsgivende for dansk jordlovgivning og ikke omvendt. Gennem hele det 20. århundrede har regeringen ved udstykning oprettet statsjordbrug, og lovgivningen har indtil 1962 forgæves søgt at hindre sammenlægning af landejendomme. Trods oprettelse af 30 000 statsjordbrug siden 1900 er der i dag færre landejendomme i Danmark end ved århundredskiftet; de sidste 10 år er således over 2 000 brug forsvundet ved sammenlægning.

I storbrug forrentes kapital og arbejdsindsats bedst, men produktionen pr. arealenhed er gennemgående større på de små brug, som lægger hovedvægten på husdyrproduktionen, der endnu kræver megen arbejdskraft, medens de store brug lægger mere vægt på planteavl, der lettere kan mekaniseres. Imidlertid er der menneskelige værdier forbundet med de små brug, hvor familien selv har ansvaret for sin ejendom. Efterspørgslen efter statsjordbrug har i de senere år været mindre end efter tillægs-

parceller. Som fig. 3 viser, er der i dette århundredes første 6 årtier oprettet lige så mange tillægsparceller som statsjordbrug, med nogen efterslæbning, som må skyldes, at brugene ved oprettelsen må være regnet for at have passende størrelse, men efter få års forløb var de mindre end de nyoprettede brug, og man har derfor ønsket tillægsparceller. Statsudstykningsen har været af ringe omfang siden 1940. Efter 1948 er tildelingen af tillægsparceller steget stærkt som udtryk for, at behovet for en forøgelse af brugsstørrelsen har været større end behovet for nye brug. 1941-60 er der tilsammen oprettet over dobbelt så mange tillægsparceller som statsjordbrug.

Men medens der i 1940-erne oprettedes omtrent lige mange brug på statslånevilkår og på jordrentevilkår, blev der i 50-erne især oprettet gammellovsbrug. 1899-brugene er 1940-60 (fig. 4) især oprettet i Vest-, Midt- og Nordjylland, altså i helt andre egne end i 1900-40 (Kampp 1959, fig. 38, 41 og 43). Jordrentebrugene (fig. 5) ligger derimod især i Sønderjylland og Østdanmark i lighed med de 1920-40 oprettede (Kampp 1959, fig. 44) samt omkring Limfjorden. Præstegårdsjordrentebrugene ligger udelukkende i Sønderjylland, hvor der indtil 1940 ikke var oprettet ét eneste, fordi menighedsrådene havde kaldsret til præsteembederne, når de ejede præstegårdsjorden.

Tillægsparcellerne på statslånevilkår (fig. 6) ligger især i region VII (navnlig på Sjælland, Fyn, Samsø og i Østjylland), VI, IV, III og II, tillægsparcellerne på jordrentevilkår (fig. 7) især i VII og II samt tildels i IV og VI. Tillægsparcellerne ligger altså især i region VII, hvor der var oprettet flest statsjordbrug 1900-1940.

Den geografiske fordeling af statsjordbrug på statslånevilkår kontra jordrentebrug synes hovedsagelig psykologisk bestemt, idet befolkningen i det vestlige Danmark synes at nære aversion mod at vælge jordrentevilkår for den jord, de selv forholdsvis let har kunnet skaffe sig, fordi der i Vestjylland har været en større tilbøjelighed til privat deling af ejendommene (der er stadig valgfrihed mellem statslånevilkår og jordrentevilkår for aftageren). Dertil kommer, at *Statens Jordlovsudvalg* har været mindre interesseret i at erhverve vestjysk jord, fordi priserne har været højere i forhold til grundværdiansættelsen end længere mod øst. På grund af den lave grundværdiansættelse er desuden færre vstdanske ejendomme undergivet Statens forkøbsret. I Østdanmark har Statens Jordlovsudvalg opkøbt arealerne, eventuelt under brug af forkøbsretten, og udbudt den på jordrentevilkår. Desuden overtog *Statens Jordlovsudvalg* i henhold til konfiskationsloven landbrugsjorden fra flere ejendomme i Østdanmark samt omkring 80 ejendomme i Sønderjylland.

Takket være andelssystemet og ønsket om at bevare sociale og menneskelige værdier har de små brug hidtil overlevet, men den naturlige konsekvens af mekanisering og afvandring fra landbruget må være, at færre brug kræves opretholdt. Fremtidens opgave vil rimeligvis være at skabe den størst mulige produktion pr. mand pr. arbejdstime, idet muligheden for en indtægtsforøgelse bl. a. ligger i at billiggøre produktionen ved fortsat besparelse af arbejdskraft. Produktionen målt i de nævnte relationer er større i industrien end i landbruget; derfor er landbrugets indkomster mindre end industriens. Men udviklingen løber så hurtigt, at det,

man med overvejende sandsynlighed mente at kunne forudse for et år siden, i dag er erstattet med en helt ny problemstilling under hensyn til landsplan, zoneplan, egnsplaner, markedssynspunkter og prisudvikling.

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