

## **AGRICULTURE IN FORMER CZECHOSLOVAKIA BEFORE AND AFTER 1990**

*A. Věžník*

Department of Geography, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic

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### **SUMMARY**

The objective of this paper is above all to inform about the development, the present state and the main trends of development of Czechoslovak agriculture. The paper is divided into two basic chapters, the first paying attention to the period before November, 1989, when Czechoslovak agriculture was marked by a period of socialism lasting for more than forty years. In the second part the main trends of development of agriculture are stressed in the period after November, 1989, above all the geographical aspects of the transition of centrally planned to market oriented agriculture.

### **GENERAL TRENDS IN THE DEVELOPMENT OF CZECHOSLOVAK AGRICULTURE UP TO THE 1980S**

In the postwar years Czechoslovak agriculture has been subject to a thorough socioeconomic reconstruction which has fundamentally changed life in the village. The period of the "socialist reconstruction" of Czechoslovak agriculture, lasting for more than 40 years, has brought about significant changes of not only quantitative, but above all qualitative character, which were aimed at the formation of new, socialist production relations, at building large agricultural enterprises - United Agricultural Cooperatives (further UAC), it was collective farms types of kolkhoz and state farms. Characteristic of the 1980s is the gradual slowing of the process of UACs and a complete prevalence of the so-called socialist sector.

In 1989 the socialist sector comprised 98.7 % of all arable land; out of that the cooperative sector, including private plots, represented 67.8 %, the state sector 30.9 %, and the individual farmers and small landowners constituted only 1.3 % (Rozvoj JZD...1989).

The number of UACs dropped considerably, out of the original 12,560 in 1959 (the mean area 353 ha of agricultural land) to 1,657 in 1989 (the mean area 2,598 ha of agricultural land) also the number of state farms dropped gradually from 365 in 1960 to less than 200, their mean area increasing to as much as 6,800 ha of agricultural land. About one-half of agricultural cooperatives cultivated the areas of 2,000 to 4,000 ha of agricultural land. The number of UACs with areas of less than 1,000 ha dropped, their number was reduced to 54 enterprises, i.e. 3.4 %, whereas the number of UACs

with the area of more than 4,000 ha grew to 200, i.e. 12 % of the whole number of UACs. The greatest representation of UACs with areas up to 1,000 ha of agricultural land was in the potato growing and mountain production area, on the other hand UACs with the area of more than 4,000 ha were in the maize and sugar beet growing region. The total area of the agricultural land of UACs reached the maximum extent in 1960 - 4,548 thousand ha, in further years it dropped prevalingly by transferring into state farms. Also the area of private plots dropped, from 365 thousand ha of agricultural land in 1960 to only 67 thousand ha of agricultural land in 1989.

The expansion of agricultural production of the 1980s in Czechoslovakia was oriented above all on the solution of the grain problem and the production of a sufficient amount of animal products (particularly meat) for the internal market. The share of cereals in the gross crop production reached as much as 38.0 % (1988). Besides the changing structure of the sowing area in favour of crops with higher yields (wheat, barley, maize) also increasing hectare yields participated in the total level of the whole harvest. Wheat became priority crop among cereals. By the level of hectare yields Czechoslovakia became greatly advanced among the then COMECON countries, but it never reached that achieved in advanced countries with a high standard of agricultural production (Cejnar, 1989).

In the line of crop production the output of legumes was increased in an effort at partly solving the need of protein containing fodders, the production of oil-plants whose increase guaranteed the degree of selfsufficiency, and the production of fodder plants for meeting the demands of increasing animal production.

The production of root crops, i.e. potatoes and sugar beet, was safeguarded on the level corresponding to consumer demand. The greatest structural changes took place in the production of potatoes. In the long-term development, with a permanent reduction of the sowing areas (in 1988 only 26.9 % of the sowing area of 1950) the production of potatoes dropped, the hectare yield exhibiting a slight increase. Due to unsolved problems in the technology of growing, harvest and storage problems persisted in potato quality. But the hectare yield in all advanced countries was substantially higher than in Czechoslovakia. The areas of sugar beet did not change essentially, the hectare yields and the sugar content of heads fluctuating strongly in the individual years, but on the whole they stagnated.

Within the structure of the sowing areas the share of fodder plants in arable land increased in accordance with intentions further progress of the feed-stuff resources.

In the sphere of animal production the progress was more conspicuous than in crop production. Structural changes in agricultural production created conditions for intense rearing of animals and the share of animal production in the whole agricultural production increased quickly, reaching its peak in 1980 - 58.1 % (Havlíček, 1988).

Only in the 1980s, due to a very strong orientation at a quicker development of crop production on the basis of extraordinary measures, did the share of animal production drop a little. With respect to a quicker reproduction of the herd the increasing demands of internal market in meat were covered above all by rearing pigs and poultry. Cattle rearing, with respect to high investment and labour demands and insufficient production of high-volume fodders, developed more slowly. Nevertheless, the numbers of cattle increased for the whole period, not only from the point of view of meeting the growing consumption of beef and milk, but also from the standpoint of creating conditions for increasing the effectivity of this transformation subsystem on the bioenergetic potential of the land. The quick progress of pig rearing increased considerably the demands on grain fodders, and their lack on them home market was solved by increasing import. The increase in the numbers of farm animals was accompanied by a gradual growth of their utility.

The industrialisation and further intensification of agricultural production brought, however, at the same time a number of serious problems also in the sphere of the environment. Large units of land prepared good conditions for utilising heavy combined mechanisms, it is true, but at the same time they caused a greater extent of erosional activity which affected about 54 % of agricultural parcels. By building large-scale breeding enterprises of farm animals with litterless operation organic matter was reduced. The content of organic substances in topsoil thus dropped in places below 1 %. Thus the structure of land was impaired and in combination with soil condensation by using heavy mechanisms also the water regime in the ground. The result of this were great losses in reducing the soil fertility and in industrial fertilisers which, particularly at sloping tracts, were washed into surface and ground waters.

Gradual industrialisation of agriculture brought about substantial increase in the production of labour together with the growth of harvest of agricultural crops, but at the same time the costs of production were growing, particularly due to increasing consumption of power and materials. Often imprudent recultivations threatened remains of peat vegetation, of the turf fund and dissipated verdure in the landscape. Their liquidation impaired an important component of landscape stability, the level of ground water sank and thus a part of the tracts were deprived of water. At the same time the biological aspect of the landscape was impaired (reduction of birds, etc.). Little effective for the land fund were some incompetently made ameliorations, mostly consisting of onesided drainage. Very adversely operated on the land fund and agricultural production also industrial and energetic emissions which reduced the production capacity of the soils, the intensity and amount of agricultural production, and they are also conspicuously reflected in the overall costs (Staněk, 1989).

The formation of large units, the introduction of large-scale production technologies and machine equipment called forth the need of building specialised intraenterprise

units and thus the formation of the so-called co-operation relations within large enterprises. An important factor for further rise in agricultural production effectivity was the broadening of co-operation relations among enterprises and the foundation of the so-called common agricultural enterprises, cooperative unions, etc., which was to have made possible a more purposeful distribution and utilisation of material and financial means of the participating organisations.

To Jan. 1, 1989 altogether 310 common agricultural unions operated in Czechoslovakia, out of which 90 were agrochemical, 92 with building and amelioration activity, 78 specialised in animal production. In all common agricultural units 80.2 thousand workers were employed. There were altogether 281 co-operative unions. The prevailing part of them specialised in animal production, production of dried and pelleted fodders ( Rozvoj JZD...,1989).

Changes in the technology of production, the development of its concentration and specialisation as well gradual increase in equipment of agricultural enterprises with mechanisation permitted a considerable drop in the number of workers in agriculture. Whereas in 1948 2,222 thousand permanent workers worked in agriculture, in 1965 it was only 1,192 thousand persons. According to the census of persons permanently active in agriculture on 1 Feb., 1989 it was 902 thousand workers, which represented a certain increase in comparison with the year 1982, when the lowest number of workers were employed in Czechoslovak agriculture. The number of permanently active workers increased above all in the co-operative sector (increase in the number of clerical workers, technical workers, increase in associated productions, etc.), i.e. increase in only non-agricultural activities. In the course of the 1980s also the so-called associated production of the UACs developed. In that period associated production asserted itself more and more as one of the factors conspicuously affecting financial results of enterprises and the financial guarantee of the reproduction process. In 1989 associated production was performed by altogether 1,401 UACs, i.e. 84.6 % of the whole number. The share of proceeds from associated production in the proceeds from production activities kept increasing, reaching 23 % in 1989.

At the conclusion of this part it is necessary to realise that agricultural production in this country was performed in the last decade under certain limitations which can be briefly summarised in three points:

- 1) selfsufficiency in the consumption of decisive foodstuffs
- 2) selfsufficiency in the production of cereals connected with the restriction consumption of fodder grain crops besides under minimalisation of high-quality grain feed mixtures with components rich in energy and proteins, necessary for safeguarding a comprehensive effect of grain feed mixtures

3) limited consumption of fuels and energy and a number of further limitations, besides also connected with increasing prices of raw materials, energy, etc. (Zajíc, 1989).

Despite some achievements reached by Czechoslovak agriculture in the 1980s there existed a variety of quite actual problems the solution of which was outside the scope of powers of the then managing system. Among the most important belonged high expenditures, excess consumption of materials and energy per unit production, insufficient fulfilment of demands for the advance of crop production (particularly in the production of fodders), chronical drawbacks in the production and use of sugar beet, vegetables and fruits, a number of important low-weight crops, unsubstantiated differences in the results of economy of individual regions and enterprise (persistence of sub-standard and lagging behind) in the quality of some foodstuff products, etc.

## **PRESENT TRENDS IN AGRICULTURE OF THE CZECH REPUBLIC**

The transition of agriculture and food producing industries from centrally directive management to the market economy is a complex transformation process including qualitative changes in the material and the system conceptions which must operatively react to the situation and conditions of the developing home and foreign markets. The economy of the Czech Republic, particularly at the time of its transformation to market conditions, cannot do without purposeful and effective economic policy. Despite the necessity of solving a number of pressing topical problems it is also necessary to know the fundamental problems of the strategy of the development of agrarian and foodstuff complex (Jeníček et al. 1991).

The following is considered to be the basic strategic target of the government's agrarian policy:

- safeguarding the threshold of foodstuff security, which corresponds to about 85-90 % of long-term stabilised foodstuff consumption,
- under gradual inclusion of Czech agriculture into the European agrarian market renewing the export capabilities based on traditional commodities,
- in regions where natural conditions do not create assumptions for competitive agricultural production it will be necessary to preserve agriculture with government subsidy in its landscape-forming, ecological and settlement functions (Agrární program ČSFR, 1991).

The fundamental condition of operating market economy is the change of tenure and contractor structures. It requires above all, utilising restitution and transformation laws, the full renewal of the rights of private owners and their entrepreneur functions.

The successful progress of privatisation requires:

- to renew to the full extent proprietors' rights towards land and other property,
- on this basis to support the development of private enterprising,

- to renew the principle of private proprietors' shares in the property of the co-ops, to privatise state farms,
- by consistent privatisation of state enterprises of services, food industries, to eliminate their monopoly positions,
- to support the development of new forms of the vertical organisation of entrepreneurs' and interest activities.

The result of the process of transformation will then be a variety of organisation forms of enterprising subjects. The extent of these subjects will be the result of above all their enterprising success and, at the same time, it will be limited by realistic production and sale conditions.

In the first phase of the stage of transition to the market economy it is possible to follow the development of small estates that have a conspicuously self-supplying character. More important will be the formation of private market estates (family farms) with business relations to external environment and services whose development will be supported by the government. In the present agricultural co-operatives the transformation is now taking place and it should be legislatively completed before the end of 1992 and actually in the first half of 1993. It is known that more than 80 % of agricultural co-operatives want to be transformed to co-operatives of owners, ten per cent having expressed the demand to be divided into smaller units. The remaining about 20 % want to be transformed to other legal subjects. The transformation of the state farms will, in accordance with the law, take place according to the individual privatisation projects which must first of all respect restitutional claims. It is assumed that part of the reprivatised property will remain under the control of funds. For those enterprises specific regional conditions will be consequently elaborated with the aim of guaranteeing at least limited agricultural activity.

Considerable changes are taking place and will take place on the labour market, i.e. a conspicuous reduction in employment in agriculture is assumed. In the course of 1991 about 140 thousand persons left agriculture in the whole former Czechoslovakia, and in 1992 another 180 thousand people. It is expected that out of the present 300 thousand people working in agriculture only about 200 thousand will work in agriculture in the future.

For guaranteeing an acceptable development of employment of the economically active agricultural population the following are necessary: stimulating the development of new working possibilities with the aim of preventing the depopulation of localities in regions hitherto prevailing agricultural and food production and under worse natural conditions. Further, it will be necessary to support the development of the infrastructure with the aim of gradually achieving the transfer of part of agricultural population into the tertiary sphere. Also the system of education will have to be adapted

in such a way as to correspond to the present conditions of enterprising subjects in the country.

In the future it is further supposed that under worse natural conditions, where at present agriculture is guaranteed at high costs, it is not possible to further reckon with intense agricultural production. In those regions it is assumed to facultatively apply the principles of the restructualisation damping programme. Besides compensatory and local production, tourism and forest economy agriculture with government subsidy will be an important factor of population and landscape ecology there.

In connection with a significantly reduced demand for agricultural products, particularly from cattle raising, and at the same time in the interest of the stabilisation of agricultural landscape, the reduction of the erosional danger of agricultural land, limitation of agricultural production under conditions of soils of low value and adverse climatic conditions a gradual transfer of about 60 thousand ha (the target as much as 148 thousand ha) of agricultural tracts with slope inclination higher than  $17^\circ$  into other cultures, above all forests, and about 35 thousand ha of arable land with the slope inclination of more than  $12^\circ$  (with long-term prospect as much as 69 thousand ha) into grass stands. A temporary overgrowing with grass of about 180 thousand ha of arable land with shallow soil section and conspicuous skeleton character is also being considered (Agrární program ČSFR, 1991).

Specific and locally differentiated measures will be taken to eliminate negative consequences of anthropogenic activity, whose target extent (up to the year 2000) can reach as much as 220 thousand ha (about 45 thousand ha for purposeful forestation, 155 thousand ha for economic overgrowing with grass and 20 thousand ha into other cultures).

A certain reduction of agricultural land (gradually as much as 35 thousand ha) will be required by the necessary renewal of non-investment elements and the stability of agricultural landscape and the present privatisation of agricultural land (reconstruction of field communications, partial renewal of anti-erosional balks and terraces, the repair of impaired water streams, sowing grass on small local steep hills, planting protective verdure, etc.).

The assumed drop in agricultural production will affect about 12 % of arable land, i.e. about 550 thousand ha, together with further unutilised soil (permanent grass stands) there might arise a potential surplus of agricultural land to the extent of roughly 13 %, i.e. approximately 870 thousand ha, prevailingly under worse soil climatic conditions.

In areas most affected by immissions and on plots contaminated by different toxic substances it will be necessary to gradually orient agricultural production to non-foodstuff production (e.g. energetic crops, quickly growing trees and shrubs, etc.). It will also be necessary to elaborate regionally differentiated systems of agricultural production (including the so-called alternative agriculture) in regions requiring a

specific way of farming, such as belts of hygienic protection of water sources, protected landscape regions, etc.).

In connection with changes in the structure and volume of consumption Czech agriculture should reach above all:

- a balance on the market of milk and beef under corresponding reduction of the number of cattle,
- an increase in the quality of milk and beef, with adjoining allocation of cattle rearing to most suitable agroecological rearing conditions,
- a rise in the intensification of animal and crop production with respect to the reduction of their costs,
- the reduction of fuel consumption and further material sources
- the introduction of economical technologies, including the application of non-traditional sources of fuels and energy (rape, biogases, etc.).
- changing the structure of plant production in favour of legumes, maize for grains, fruits and vegetables, raising the growing of low-weight crops (medicinal and aromatic plants, buckwheat, millet, etc.),
- lowering the intensity of production under worse submarginal conditions and broadening alternative and ecological systems of farming,
- improving the quality parameters of cereals and hops for foodstuff and fodder industries and for export.

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**Table 1.** The development of the number of UACs and state farms in former Czechoslovakia

index -	1960	1970	1975	1980	1989	1991
number of UACs	10 816	6 200	2 206	1 722	1 657	2 014
Mean area of agricultural land in ha	420	638	1 920	2 486	2 598	2 128
Number of state farms	365	336	250	200	245	366
Mean area of agricultural land in ha	3 104	4 265	5 684	6 795	5 922	4 030

**Table 2.** Increase in hectare yields of chief agricultural crops in former Czechoslovakia

Crop -	1966-69	1974-76	1979-81	1986-88	1991-92
wheat	2.80	3.78	3.98	4.93	4.86
potatoes	13.80	16.03	16.73	19.07	16.20
sugar beat	34.20	33.10	33.90	35.36	31.84
rape	1.50	2.09	2.00	2.70	2.70

**Table 3.** Number of main farm animals (thousands of heads) in former Czechoslovakia

Animals -	1960	1970	1980	1989	1992
cattle together	4 387	4 288	5 002	5 129	3 694
out of it cows	2 047	1 881	1 902	1 795	1 361
pigs	5 962	5 530	7 894	7 498	6 868
sheep	646	981	875	1 051	826
poultry	28 157	39 187	47 283	48 566	41 487
Mean annual milk yield (liters per cow)	1 900	2 867	3 089	3 880	3 500

