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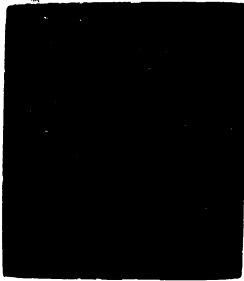
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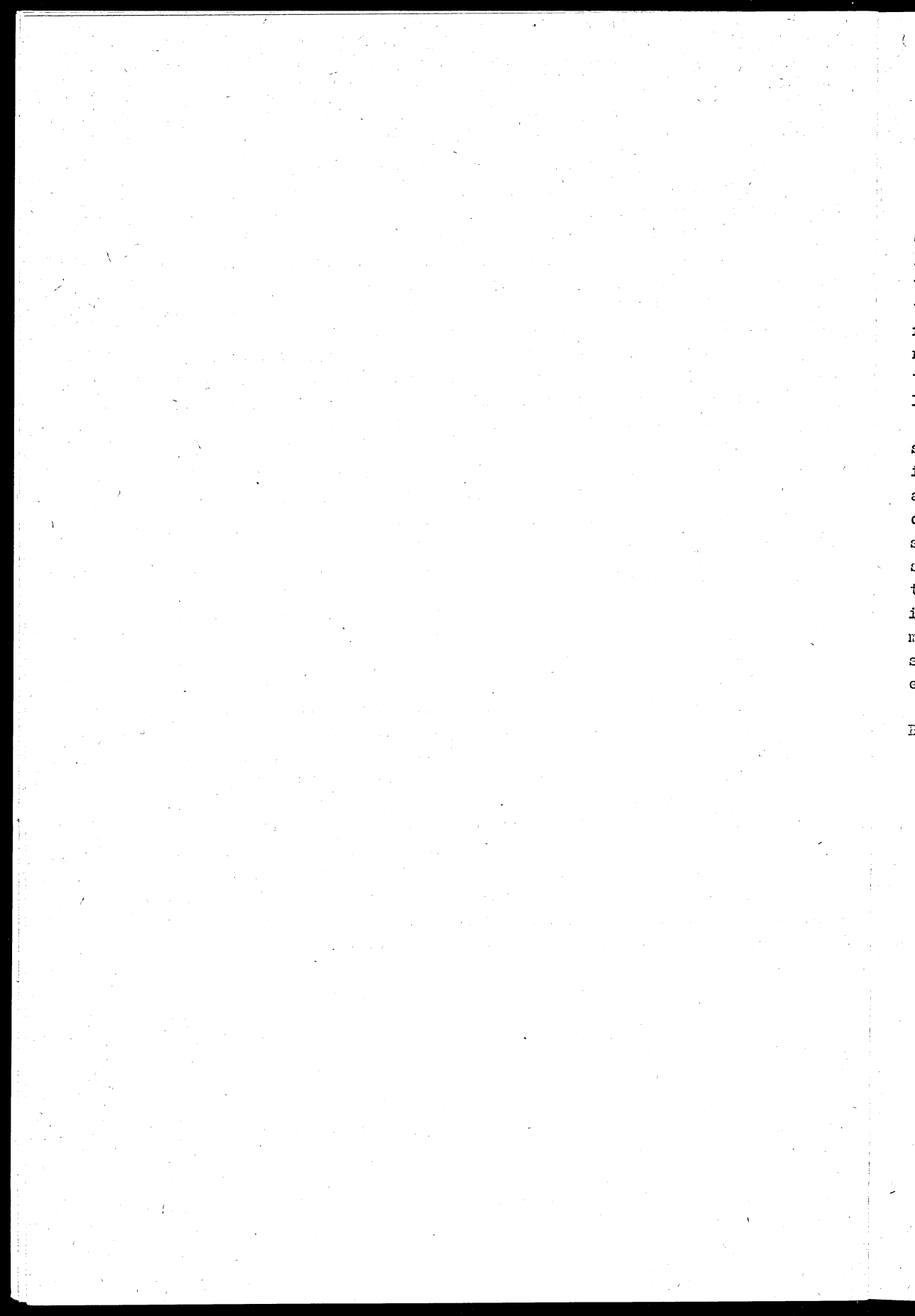
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INTRODUCTION

It is already the seventh time that we publish the summary of the selected publications of the authors of our institute, to enable our foreign colleagues, all those, who are interested partners of ours in the information exchange fostering international scientific collaboration to gain insight into the results and problems of the Hungarian agro-economic researches. We would like to remind you that the "summary" numbers of our Bulletin series give a survey of ten years of publication output /Nr 35, 1974; Nr 39, 1976; Nr 41, 1978; Nr 47, 1979; Nr 50, 1981; Nr 53, 1982/.

As to our present volume, an extension of profile is given - beside the publications of the institute, books, parts of books and articles of periodicals - by the communication of the material of inland and foreign conferences. This is supported not only by the significance of the publication form, but also by the fact that in the field of our science profile, agro-economy, these professional events /conferences, seminars, scientific sessions, etc./ that include up-to-date informations, in many cases fresher than written communications, are receiving in general a very exclusive or chance publicity. At the same time it may be taken as a change of content and theme the extension of the research work-sphere, considered traditionally agro-economy, also to the economic study of food industrial branches.

Budapest, January 1984

The Editor

ARVA, László: Gazdasági reform Indokínában. /Economic reform in Indochina./

Külgazdaság, 1983. No. 7.

In 1975, South-Vietnamese, Cambodian and Laotian regime a new era commenced in Indochina. In these countries after more than ten years of fighting the political forces, having come to power in these countries wanted to introduce basic, or we can say, revolutionary changes not only in the political, but in the economic sphere also. The essence of these changes can be found in the papers on the XXIV meeting of the Central Committee of the Vietnamese Workers' Party: "We have to finish the unification of our country, quickly, firmly and strongly, have to follow the socialist way in the whole country and the relations of production must be improved. In South the socialist transformation must be implemented and the building of the socialism must be commenced."^{1/}

The new revolutionary leadership of the Indochinese countries inherited a very disproportionate, biased economic structures with very large servicing and trading sectors, extent financial and banking spheres and swollen civilian and military bureaucracy. The towns were crowded with the peasants fled from the countryside, who were not able to find any productive occupation in the cities, while the countryside was not able to provide the badly needed food for the town-dwellers.

The new economic and political leaders of these countries had immense revolutionary and military experience after the more than ten-year long fighting, but they had hardly any economic experience or knowledge. They knew only the North-Vietnamese and some of the Chinese and North-Korean economic experience. The latter played more important role in the case of the Laotian and Cambodian leadership. It is quite evident that during these circumstances the revolutionary leaders of Laos, South Viet Nam and Cambodia regarded North Viet Nam, China and Corea with their centralized economies as an example to follow.

In order to solve the large-scale problems of the reconstruction and rebuilding, a very significant accumulation was needed. In order to realize this accumulation, considerable amount of the net incomes had to be centralized through production taxes and the compulsory procurement of the agricultural goods. The salaries in the state enterprises were fixed at a very low level, supposing that the food prices will also remain low because of the low-priced compulsory procurement system of the

1/ Politique économique et guerre de libération nationale; Etude Vietnamiennes, Hanoi, 1979. 254 p.

agricultural commodities. At the same time, the government wanted to provide the villages with cheap industrial goods, in order to compensate them for the cheap procurement of food. After 1975 a very similar economic transformation was performed in Laos. The only difference was that Laos had a less developed economy than Viet Nam. In Laos there were practically no infrastructure at all. There were not /and there is not today/ any railway line and one can find only some hundred kilometers of paved roads in the country. There are very few local economic experts in this country, who effectively could take part in the guidance of the economic life. Because of the lack of economic experience the Lao revolutionary leadership naturally asked for the help of the Vietnamese neighbours after 1975 and implemented the same economic measures as Viet Nam. So, after 1975 a very resembling economic system was developed in Laos as in Viet Nam.

After 1975 the new leadership of Cambodia had also been stressing for a short period - at least verbally - the importance of the Vietnamese experience, but as the internal fighting commenced inside this leadership, the references to the Chinese experience became overwhelming. In Cambodia a resettlement program was also started in order to send back the peasants to the countryside from the swollen big towns /mainly from Phnom Penh and Battambang/. Unfortunately, during this harsh resettlement program a lot of people died because of the Khmer Rouge forces' brutality. The Khmer Rouge also started to organize agricultural co-operatives, which at first were only looser associations, but later this co-operatives spread more and more not only to the economic life, but the whole life of the peasants, who took part in these organizations.

Characteristically, till 1973 the Khmer Rouge organized only "mutual helping groups" /Krom pravas day/ in the liberated zones, but later they were transformed into "co-operatives" /sahakar/ and after January, 1976 into "communes" /sahakum/. In these communes the relative autonomy of the participating families was nearly completely dissolved.

In summary we can come to the conclusion that after 1975 either in Viet Nam /South/, or in Laos and Cambodia the new leaderships started to introduce a certain system of "war communism", to implement an economic model, where instead of the commercial and monetary relations certain central "directives" were used, and where the commodity movement was organized by central distribution.

The plans formulated in 1975-76 failed in Vietnam, Laos and Cambodia too, and by 1977-79 these countries had got into more or less serious economic difficulties. This time not only the ambitious rebuilding and construction plans were endangered but there were diffi-

culties even in providing the basic food requirements of the population, too. In Viet Nam the grain production did not grow according to the plan but practically a stagnation occurred in the grain production, while the population has been growing at 2,3 per cent per year. This means that in Viet Nam the population increases by 1 million persons per year nowadays. Between 1975 and 1979 the rice /paddy/ production was around 10-11 million tons per year, sometimes at a bit higher, sometimes at a bit lower level, according to the weather conditions.

The leaders of Viet Nam, Laos and the new Cambodia recognized the causes of these economic difficulties with commendable zeal. The economic problems originated mainly from the fact that in the period of rebuilding and reconstruction the Indochinese countries tried to implement an economic system, which was used in the war period in North Viet Nam. During the war this system worked very well, but in peacetime the Indochinese countries should have needed a more flexible, more market oriented economic system. The fall of the Khmer Rouge government partly came from the fact that they were not able to recognize this error and were not able to renew their system.

The first reform measures in Indochina were accepted in the 6th Decision of the Central Committee of the Vietnamese Communist Party in August, 1979. This decision was aimed at increasing the productivity by giving more possibilities to the private producers in agriculture and in small-scale industry and generally by giving larger scope for the free market.

In April, 1982 at the 5th Party Congress of the Vietnamese Communist Party the party leadership decided to continue the economic reform started in 1979 in spite of all ideological problems. The party declared again its commitment to the economic reform policy, to the liberalization of the economic guidance. At this congress it was already possible to refer to those initial achievements, which emerged as the first results of the economic reform policy. By 1982 the grain production has risen by 30 per cent /in 1982 the grain production reached 16,5 million tons, 12,2 tons of which were paddy/. The industrial productivity has also risen by the use of piece-wages.

After 1979 in Laos a similar reform was inaugurated, and the Party Congress in April, 1982 also confirmed the reform process, as the Party Congress in Viet Nam did in April, 1982.

The biggest changes happened naturally in Cambodia after 1979. After the fall of the voluntaristic Khmer Rouge government, the new khmer leadership started a new liberal economic policy, which has given much bigger room to the private traders and private producers. The agricultural production has increased very rapidly, and as in 1980 the paddy

production was only 1 million tons, in 1982 it reached 1,7 million tons already. The other sectors of the economy have also developed rapidly, as more and more destroyed firms and enterprises were rebuilt and reconstructed.

In the future it is highly probable that all Indochinese countries will accept more flexible agricultural procurement policy in the future, if they want to reach self-sufficiency in all major agricultural products. We must not forget, that to reach self-sufficiency, these countries have to implement other measures beside of liberalizing the procurement system. We refer here first of all to the increase of the irrigated areas, to certain basic mechanization of the agriculture, and to the wider use of fertilizers and some pesticides in the agriculture, etc. Laos has already realized self-sufficiency in rice, and Cambodia might reach self-sufficiency in 1983. Viet Nam can reach self-sufficiency in paddy by 1984-86, if the circumstances will be favourable.

ARVA, László: Laosz mezőgazdasága a forradalom után. /Agriculture of Laos after the revolution./
Budapest, AKI⁺, 1983. 68 p.

This essay gives an overall picture about the problems and difficulties of the agricultural development in Laos which is a small, land-locked South-East Asian country.

Laos started its socialist development in 1975, and nowadays - after a lot of troubles and difficulties - a socialistic rural development scheme is going to be implemented in this country.

After the revolution in 1975 because of the inexperience of the Lao revolutionary leadership, a lot of voluntaristic mistakes occurred in the economic policy, which hindered the positive development of the economy. After 1979 a general economic reform was accepted in Laos in order to rectify those mistakes which arrived as the consequence of the earlier voluntaristic economic decisions. This reform really embodied in certain improvements of the economic results.

This essay gives a detailed analysis of the conditions of the rural development in Laos, of the specific production in South East Asia, and of those arrangements, which would be necessary for the further economic development.

The author of this essay stated, that one can find a lot of characteristics of those third world countries in Laos, which started a

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socialist development, and we can find there both the future possibilities and the difficulties of these countries. Consequently, if one starts to analyse the situation in Laos, that also gives a broader picture of the problems and difficulties of other third world countries.

Beside the problems of the agricultural development in this essay the author also gives a short account of the general economic situation, as the foreign trade deficit, the inflation, and the employment. As the author of this essay had spent two years in Laos, he used a lot of personal experiences and impressions, in the analyses of the economic situation in Laos.

The final conclusion of this essay is that those third world countries, which started a socialist development, should take into consideration the market relations much more seriously, that it happened in some countries after the revolution, and secondly, these countries should have much greater independence from the foreign aid and credit. It is very important, that the foreign economic aid should correspond to the specific socio-economic conditions, of the given countries because otherwise the foreign aid could not form an integral part of the economic life of these countries.

ÁRVAI, László: Az ezredfordulóra várható munkaerő-ellátás változásának főbb jellemzői a mezőgazdaságban. /Main characteristics of the change of expectable labour supply in agriculture up to the millenium./

Munkaügyi Szemle, 1983. No. 10.

The actuality of the subject-matter is partly proved by the antagonistic views on the judgement of the perspective labour supply, partly by the future labour supply of so-called critical workplaces, not yet cleared up /mainly animal husbandry/, partly by the forecast, mention of the possible increase in labour worries.

Our objective has, first of all, been the prognostication up to the end of the year 2000 of the staff of socialist agricultural large-scale farms and that of other agricultural sectors calculable with the help of analysable labour force database of them, taking into account the quantitative and qualitative modifications of the simultaneous change of generations. To attain this goal we have selected two kinds of approach. One has been the method of mathematical trend-calculation, the other that of the multivariant logical-statistical combination. The end-figures valid for the millenium of the rather rigid mathematical functions, that express summed up the trends inherent in the change of

labour staff of large-scale works /state farms and agricultural producers' co-operatives/ /namely 500 thousand head for the hyperbolic and 410 thousand for the exponential/ may not be qualified totally realistic, as it is not probable that in the following years in the labour supply motivational factors of the same effect will prevail, as have been dominant in the research period of the preceding 13 years. /It is doubtful whether the former trends being busy to free at any rate the agricultural labour force, will be repeated, or that men becoming old, decessing or leaving agriculture may be replaced with only the too expensive mechanization - replacement of one worker with machine costs about Ft. 600 000. If, however, our large-scale farms would meet difficulties of labour replacement out of any causes /for instance more attractive work-place, salary, want of rightful claims for schooling, culture, etc. or prevention originating from political causes, narrow perspectives or even envy/ then a growing labour force may also develop and render large-scale production critical.

It seems much more probable that in the long range the forecast trends of logical calculation will be realized, that are able to perceive also the fluctuation of labour force in the meantime. According to one version of these 690 thousand labour force basis may be awaited in the large-scale farms for the millenium, on the ground of the other about 674 thousand, depending on how many young and pensioned people can be won for the labour force in the long run. These figures will be divided approximately 50-50 per cent between the basic and complementary activities. The success of their retention in agriculture in being increased by social, moral assistance, by wider acceptance of the ground of complementary activities and of the efficiency of the branch. In the whole agriculture, according to one forecast version 911 thousand, on ground of the other about 888 thousand labourers may be expected for the millenium, depending on the number of pensioners remaining in the branch and working longer and that of the young employees.

It can be unambiguously proved on ground of our analyses that the number of agricultural labour force, although in a decreasing rhythm than in the preceding years will repeatedly decrease in the whole as well as per sectors up to the millenium /the number of women working in agricultural producers' co-operatives shows according to the newest data of the Central Statistical Office, following the reducement of pension-age limit in 1982 a decrease of 10,5 thousand head/. Our researches show that the process of growing staff, started in the agricultural large-scale farms in 1978 proves to be similarly temporary /will stay more intensive up to 1986/ as the long-lasting labour force base growth between 1968-1970.

It seems that the more significant decrease of staff takes in the long run place in the duller, less liked branches of basic activity, that may be relatively more economically mechanized, chemicalized. The decreasing process is being slowed down by the flow of young people into works claiming qualification, technical sense, into activities outside basic activity. Of this manifestation, very useful out of labour replacement aspects, may be made the best by rational and continuous development of complementary activities adapted to local potentialities. In the course of our research it has also become evident that the larger and larger demand of inland consumers and foreign trade raised against our agriculture directs the composition of labour force more and more to many-sidedness, aptitude and to owing more professions. Keeping the realization of economic and efficiency objectives in view requires a fortunate alloy of these qualities from the workers. There are, namely, cases when the increase of efficiency is hindered by uneconomical activities, the cost level of the replacement of live labour with mechanical instruments. In this case it is more practical to choose the less efficient but far cheaper traditional procedures.

BALOGH, Ádám: A szarvasmarhatartás gazdasági ösztönzése. /Economic stimulation of cattle breeding./
Gazdálkodás, 1983. No. 11.

The producer price has lastingly played a subordinate role in the development of large-scale cattle breeding and its production-forming effect is still not sufficient. On the other hand, the support policy has had an important orientation role, that has not lost its significance since the beginning of the mass-formation of large-scale farm framework until now. The branch regulation had until 1976 expressedly served the creation of production bases. In the production the material interestedness has been overshadowed.

Since 1977 the increase of the measure and level of production has been the direct goal - above all that of milk. The regulation and within it the tool-system of support have changed accordingly. The novel element of the incentive system, the milk-increase premium has in essence created the interestedness in all milk-producing large-scale farms. The improving, sometimes outstanding income position has stabilized the formerly always unstable enterprise situation. The supply level of dairy farms had rapidly improved, the milk output increased, the stock of cows grown.

Year	Stock of cows	Milk output litre	Price income per one cow	Enterprise income
1976	429 000	2783	18 590	- 1075
1978	458 000	3366	26 462	4792
1981	472 000	4031	36 349	7794

Between 1977-1981 the cross-breeding transforming the progenies of good milk production - started already formerly in state farms - had taken mass measures.

The "investment fervour" characteristic of the first years of the seventies has not, however, been repeated. Instead, the plant reconstruction, in the frame of which not only the physical state and the technical level have improved but also the space capacity has expanded, has become a general practice.

The branch regulation, giving rank to milk production has on the contrary scarcely improved the income situation of slaughter cattle breeding. On account of the producer prices covering less and less the cost of keeping between 1978-1981, the interest in cattle fattening had also on national scale decreased. The formerly much debated single-oriented beef keeping has got in an even more unfavourable light, because the specific input costs per useful product quantity have after 1979 increased by leaps and bounds. At the same time neither the foreign market nor the inland price has appreciated the better quality of slaughter.

The economic regulation resulting in a transposition of the interest relations of two products - milk and meat - has made it clear also the limits of the double-oriented cattle keeping, based on the Hungarian pied species. The signs of this had already come to light in 1979-1981, as the extensive reserves of output expansion in the utilization trend had been exhausted. The efficiency of surplus input has strikingly depreciated first of all in the milk production farms of Hungarian pied stocks.

As an effect of the direct interestedness in the increase of milk production, the milk output has essentially grown in all milk producing large-scale farms. As to the level of production - for one cow - the differences among the output levels of the farms have become larger. In the lower zone the milk output per cow has increased only by 300-400 litres. Even in 1981 there were stocks producing under an individual performance of 2800 litres. The specific output has increased in the head of the field by 1200-2000 litres. Some large-scale farms have achieved a production level of more than 6000 litres.

An output increase of higher grade has taken place in the co-operative sector, but this had decreased the disadvantages against the state farm only to an insignificant extent. The specific milk production of the producers' co-operatives did not reach even in 1981 the 1977 level of the state farms /about 4000 litres/ the difference being in 1981 still approximately 800 litres. The profitability of milk production on enterprise level has also on national scale been polarized similarly to the specific output. On account of the narrowing down of the temporary milk surplus, of the decreasing slaughter cattle production and of the central resources concerning the branch, the financial regulation of the cattle keeping was modified by the 1st of January, 1982. One part of the result in producing the milk was withdrawn, an other part was regrouped in the interest of improving the income position of slaughter cattle. This has badly affected the branch as a whole. On account of the reduction of support and regrouping of income new, less healthy income proportions than formerly have been formed in the large-scale and small-scale cattle keeping alike, and similarly among the various utilization directions /milk-meat, double-orientation/.

In the large-scale farms considered as middle field in milk production /3500-4500 litres/cow/ the returns on one cow have decreased by 300-800 Ft. The profitability of the branch in this group vigorously depreciated, has become in more cases critical. Development has become questionable even in the large-scale farms producing on a high level. In the farms with average or lower level dairy farms the inclination to reduce and liquidate the milk branch has increased. The new regulation has created uncertainty in the breeding and species policy of the farms applying cross-breeding of milk-orientation. The income regrouped on slaughter cattle in 1982 retrieved only the fallen off price income of large-scale farms attaining poor results in milk production.

The regulation in 1982 opened up such an equalizing valve, that has really struck the enterprises rendering better production results /rescuing the feeble ones/. It has alleviated the burdens of the budget, but bred distrust in the sphere of enterprises. The economic position has somewhat improved really there, where the cattle keeping is neither further on profitable.

The experience of the situation developed in consequence of the latest financial regulations proves that in the economic guidance of the cattle branch the most expedient way is the strengthening of the influence of the appreciation by price. This way even the farms attaining at least medium level in milk production may be made interested. With a lower level than this there is no possibility to make the milk branch profitable through price.

The regulation of the development of cattle breeding with purely monetary tools cannot be the sole form, beside the price the subsidy policy will play a role in the long run. The task of the subsidy policy is to decrease the disproportion, the tension between rate of profitability and need of capital, developed on account of our price system. Thus, beyond the slackening build-up of fixed assets it has above all to serve the fulfilment of the extraordinarily increased claim for current assets.

BALOGH, Sándor - KÓBOR, Kálmán: Az élelmiszeripar energiaigényessége és ipari eredetű anyagfelhasználása, valamint ezek tervezési módszerei. /Energy claim and utilization of material of industrial origin of the food industry./

Ipari és Építőipari Statisztikai Értesítő, 1983. No. 1-2. p. 1-8.

The food industry - above all in consequence of its high demand for materials of industrial origin - belongs to the industry branches of highest material need. In 1981 the material cost for a gross production value of Ft 100 was Ft 79,04 in the course of food industrial processing and only that of chemical industry was even higher: Ft 79,10. At the same time it is also characteristic of the food industry that in its cost structure the proportion of costs of agricultural origin is constantly diminishing and that of other industries and energy is rising. Out of the direct energy use of the national economy the share of the food industry is about 4 per cent, taking the socialist industry the share has been between 7-7,5 per cent unchanged since years. These figures of proportion show that the food industry does not belong to the significant energy consuming branches. The unchanging shares let us come to the conclusion that the improvement of the efficiency of energy consumption is slower in the food industry than in other branches or rather that the energy demand of production is rising. In the period under review /in the seventies/ the share of the food industry in the industrial production did, namely, somewhat diminish.

Within the food industry the largest energy consumer is the sugar industry with a share of 25 per cent; that of the meat, preserve and baking industries is above 10 per cent. A decisive quota of direct energy utilization is given by the heat energy /around 60 per cent/.

Other material utilization of industrial origin of the food industry - compared with other industry branches - is not significant. Its value in 1981 amounts approximately to 20 per cent of all material utilization, and an overwhelming majority of materials is building material, steel, nonferrous metal, textile goods - that is to say not

made use of direct for food industrial production. Out of the industrial materials followed centrally with attention only 15 materials may be gathered, that are built into various products in the food industry, respectively are used in the form of packing material. The more and more increasing importance and lastingly rising quantity of these /and their price/ demand, however, that the food industrial enterprises should deal intensively with the tendencies of their utilization so far and expectable in the future. The management of the materials of industrial origin is made especially important by the fact that a large part of them comes in some fields from imports of dollar settlement. For instance the sweets industry covers three-quarter of its packing materials from capitalist import, but neither are more favourable the characteristics of poultry processing and canning industry, as almost half respectively more than one-third of the industrial material input of these branches comes from dollar relation. It would be rational to gradually decrease the import of such direction, respectively, to replace it with inland production. In the decade of 1970 a considerable rise in the utilization of materials of industrial origin in the branches representing the larger part of food industrial production may be reported. In this respect first of all the meat, milk, preserve and milling industries may be emphasized, whilst the cost proportion of industrial materials has stagnated in the vegetable oil industry and has somewhat diminished in poultry processing, cold storage and sweets industry. We may draw the conclusion of a not yet satisfying level of the packing of products from the fact that the specific industrial material utilization is fairly low in the food industry for the processing of units of raw materials of agricultural origin. Meat and milling industries are in the worst situation, where similarly filler 3 industrial material input is falling on an agricultural raw material of the value of Ft 1. This index is highest in the vegetable oil industry /filler 39/ and in the canning industry /filler 33/. This latter is, however, the sole branch of the food industry, where the products are sold almost 100 per cent in consumer packings. The question of what prospect may be calculated in the decade of 1980 for the utilization of energy and materials of industrial origin, may not be answered on the basis of the trends in the use of such materials so far. Although it is certain that a kind of increase may be expected, the planned rise is considerably influenced by saving measures and the changes in the demand and supply situation of the world market. If we accept the supposition that in the long run an increase may generally be expected in the field of demand for products of higher processing grade, we have to count on a further rise in the specific industrial material utilization. The increase in the processing is manifesting itself, namely - among

others - in the larger utilization of materials of industrial origin and energy consumption as per unit of utilized basic material. These phenomena are made probable moreover by changes in the inland consumer needs, that consider a fuller preparation of food for consumption necessary.

BALOGH, Sándor - DÉNES, Katalin - VARGA, Tibor: A vállalati kapacitástervezési adatbázis összeállítása és felhasználása tervezési és szabályozási jellegű döntéselőkészítési feladatok megoldásához az élelmiszeriparban. /Compilation and utilization of enterprisal capacity planning database to solve decision preparation tasks of planning and regulating character in food industry./

II. Neumann Congress /Székesfehérvár, 1983. XI. 14-17./ Lectures of the 1. Section, p. 19-25.

The harmony of central planning and independent enterprisal activity must be secured by such a planning and regulating system, which is able in the possession of enterprisal informations to influence all essential questions of operation and development. Our work reports with the example of food industry on the system of enterprisal capacity planning informations, formed to this end, on its utilization as database, its exploitation for planning and regulating purposes.

The size of the tasks is characterized by the fact that in our country food industrial products are turned out in several sectors, in about 6500 plants. These plants, ranked into 15 specialized branches represent about 40-50 manufacturing branches. Thus, identical activity is being performed parallelly in numerous - in some cases of many hundreds sized - plants.

The condition of the success of planning and regulating is the knowledge and analysis of the present situation and enterprisal plans /in some cases of plant depth/. To this end a wide data-collecting work was initiated in 1977 by the Ministry of Agriculture and Food. This was aimed at the compilation and filling up of such database, that might contribute to planning and decision preparation work of branch direction financial and regional direction organs and of the enterprises.

Formation of network development /capacity planning/ database

The preparation of special branch network development planning comprised manyfold targets. On the one hand, a task of methodological character to the compilation of adequate structural database, on the other a work of operative character relating to commandment and organization of the information. Development plan informations have been asked for 39 activities in 13 specialized branches, within it for 72 partial

activities. The development concepts - at yearly level - are best expressed by the five indices below:

- capacity norm at the end of the year
- number of processing days /seasonal days/
- number of accomplished shift hours
- basic material /raw material/ need
- turned out food industrial product.

These indices had been given as partial activities by all food industrial plants, without consideration of sectoral relationship for the years 1976, 1980 and 1985.

As the formation of the database was of experimental character, it had also meant a test of the complex, long range planning ability of the enterprises, therefore, from the ministerial industry works, disposing of greater planning experience - similarly at plant depth - their development concepts had been asked for up to 1995 as regards the alteration of capacity and the Forint sum and mode of development in 5 year periods. The enterprises could describe 5 possibilities of development mode:

- development,
- maintenance at level,
- decrease,
- closing down,
- resettlement.

The development concepts summed up by special branches and production lines /as partial activity/ and valuated critically by expert groups, have made it possible for the ministry to obtain a survey at branch level for all essential aspects of development. The main result of the collection, summing up and analysis of the informations was without doubt that it made a comparison of the branch and enterprise targets of the VI. Five-Year Plan possible and called the attention to the necessity of correction in case of deviation from the targets.

Also a survey had become possible whether the capacity developments planned by individual enterprises cannot - within certain area units - disturb each other in a way that the increase of processing capacity is not accompanied by an adequate development of the raw material bases. The expert groups called the attention in given cases to this, too, rendering thereby an appropriate preventive help to avoid undesirable economic phenomena.

The most valuable part of the network development /capacity planning/ database is given by the informations regarding the factual situation of 1977 and the development of the VI. Five-Year Plan. As regards the former, these informations are still in use as quasi capacity

cataster. Out of the basic data various treatises may be made for special branch, production line and partial activities for the whole country and divided into sectors and whatever region.

Capacity of plant depth and fixed asset data-bank

In the interest of a better preparation of decisions and stand-points at ministerial level, the joining of informations of network development /of plant depth/ capacity with three other information systems had taken place. Thus, the following informations have joined at the side of capacity data of the network development plan:

- gross value of fixed assets,
- from which the value of machinery and equipments,
- average staff number of all employees,
- quantity of all used electric energy, and
- informations on the grade of wear and tear of fixed assets.

Utilization of the information system for implementing planning and regulative decision preparation tasks

The information system reported above may be used first of all to implement investment political and regional planning tasks. From these two main activities nowadays especially the latter, that is the regional planning tasks have come into prominence, owing to a continuous narrowing down of investment sources. The principal content of these is the area development of the storage and processing capacities in proportion with the raw material production. In food industry yearly minimum 15-17 million tons of raw material of agricultural origin are being processed, the economic and physical transportability of which is equally difficult, in general. The reduction of transport costs and avoidance of quality deterioration on account of transportation are equally important for the enterprises and the national economy. Though the factors influencing the regional placement of the food industrial capacity are extraordinarily diverse and increasing in our days, too, the transport distance respectively cost are of decisive importance. To simplify it extremely: the condition of the creation of a regional harmony between raw material production and processing is the diminishing transport distance. This way the minimum achievable transport average-distance or the minimum transport costs are suitable to characterize the regional harmony.

The great number of plants ranked to identical specialized branches makes the possibility of the solution of a such transport optimization task seemingly simple. Before, however, we would report such a task, we have to remark, that - with regard to the great differentiatedness of the size, of the profile diverging by production lines, of the technical level and the grade of wear and tear of fixed assets of the processing plants - the findings obtained this way have to be corrected

and refined in the concrete knowledge of plants and taking technical-economic aspects into consideration.

The first program of the program-system developed particularly for this survey comprises beside the determination of the minimum average road length the transport strategy bringing it about: in case of capacity surplus the regional placement of capacities to be left unused in the interest of minimum transport, respectively in case of capacity deficiency the volume and regional placement of the unprocessed remaining product quantities. The program is, therefore, suitable not only for characterization of the regional harmony, but also to designate: what capacities may be redeveloped in case of capacity surplus respectively in what places have the processing capacities to be increased in case of capacity scarcity.

The database is also accompanied by the second program of the program-system, that is suitable for the decision in case of production and processing structure of the question, the increase of which capacity results in the biggest specific road length decrease and which will be the capacity that remains unused. We have applied the program-system up to now to the examination of the vegetable oil, meat and poultry verticum. These researches have made it for the first time possible to compare also numerically the different development strategies and to give prepositions for the improvement of the strategy.

It was unambiguously evident from the analyses that the decrease of the average transport distance may be realized in case of adequate development strategy with considerably smaller investments and capacity enlargements, too, than it was hinted at by the network development plans.

The obtained findings are to be valued separately on the basis of concrete technical-economic criteria. Among these may such preferences of investment policy character play a role, as the size of the works, the proportion of credit requirement and proper investments fund, the minimalization of central budgetary sources, etc.

The shaping of the planning-analysing methodology has not yet been closed down and it is sure that it will still be differentiated in respect of certain food industrial specialized branches. We think, however, that it may represent in the end an effectual tool in the preparation of planning and regulating decisions at ministerial level.

BORSZÉKI, Éva - JÁNKY, Margit - VAIK, István: A növényolajtermelés helyzete és fejlesztésének gazdasági kérdései. /Situation of vegetable oil production and economic questions of its development./

Budapest, AKI, 1983. No. 9.

The vegetable oil verticum is an important branch of both the Hungarian agricultural production and the food industry. Its products are indispensable in the food supply of the population, they represent a significant part of the agrarian export and give the main inland source of the protein fodder for animal husbandry. In the past years the large-scale development of processing industry has revealed the inconsistencies within the verticum. The increase of intensity of the agricultural production has not, namely, kept pace with the development of industry, thus, tensions have partly arisen in the field of volume and composition of basic material supply, partly the sowing area of vegetable oil plants had to be increased to cover the growing oil seed demand. This has been furthered in the case of sunflower by the distribution among the industrial and agricultural works of the income formed within the verticum, but has been hindered in other branches. The increase by leaps and bounds of the sowing area of sunflower has, however, caused agrotechnical and land exploitation problems.

The development has also changed the export structure. While formerly a decisive part of that had been given by sunflower, with the increase of oil processing the export of raw sunflower and rape oil has sped up. As the sale of raw vegetable oil has knocked against difficulties, the drawing up of a new marketing policy has become necessary. We have, therefore, considered necessary to reveal the most important coherences and conditions on the basis of the analysis of the present situation of the verticum, that are indispensable to a harmonious improvement of the vegetable oil economy.

1. Formation of the situation of the processing industry

a/ Within the oil verticum the export-oriented development of the processing industry has meant a decisive change in the last years. With the opening of the new factory in Martfű, the processing capacity of Növényolaj és Mosószergyártó Vállalat /Vegetable Oil and Detergent Manufacturing Company - NMV/ has increased to its double, reaching the performance of 2150 tons/day sunflower exchange value. The absolute increase has been accompanied by improvement of exploitation and as a consequence of these the raw oil production rose in the period of 1975-1981 to two point sixfold, approaching yearly 230 thousand tons. Within this the share of various products has changed. The production of sun-

flower has risen by 250 per cent, that of rape by about 50 per cent, that of soya bean by 30 per cent, whilst the quantity of the oil produced from oil flax has fallen back to almost half. Though the edible oil production has increased in absolute value, its share of all oils has diminished. The production of margarine has risen by 26 per cent and within this also the share of the most wanted Rama margarine has increased in a small measure.

b/ The cost and returns of the main vegetable oil products have been relatively favourably formed in the past years. Beside the increase of 139 per cent of the cost, the rise of income has achieved 134 per cent. The income and profitability of individual products are showing essential differences.

From the raw oils the income of the largest volume sunflower oil has diminished and is the lowest at present. The extraordinarily favourable income and profitability of the rape raw oil stimulate the enterprises to expand production. In the course of further processing the income of the edible oils is almost equalized. We have to state that the industry decreases the material costs by the value of by-products when calculating costs. Therefore, the change in the price of grits modifies the prime cost of oil. On the contrary, the income of oils includes the joint income of oil and grit production. Thus, for instance, the improvement of the profitability of soya oil may be attributed partly to the increase of the price of soya grit.

c/ The production structure of oil industry is in a significant measure influenced by the profitability of individual products and also by the fact that the capacity at present is suitable mainly for the processing of sunflower and rape seeds. The daily quantity of these may reach 1900 respectively 1755 tons, too. An essentially less quantity may be processed from soya bean /440 t/day/, maize-germ /110 t/day/ and oil-rape seed /200 t/day/. The conditions of the processing of these latter are mostly limited to one factory and represent in a way competitors to each other. Therefore, the increase of production of rape raw oil and sunflower edible oil - giving at the same time the highest income - takes a role in the plans of the industry. The development of flax-oil production would be justified beside its relatively favourable profitability by the oil demand of various industry branches, but seems to be unachievable on account of problems of agricultural production. The industry would like to decrease the production of soya oil, notwithstanding its favourable profitability, because the production of maize-germ oil requiring the same capacity is more profitable. Thus, also the import of soya oil, necessary by all means to the manufacture of margarine would grow.

2. Changes in the production of oleaginous plants

The growth by leaps and bounds of the demand for basic materials of oil processing has made the development of oleaginous plant production necessary. The crop of oleaginous plants was more than 750 thousand tons in 1981, surpassing by 143 per cent the quantity of 1976. This has been given first of all by an about one and a half increase of sowing areas, plus by the growth of the crop average of sunflower and soya bean as well as by a change in the structure of oleaginous plant production. While in 1976 of the sowing area of oleaginous plants sunflower occupied 55,5 per cent, autumn coleseed 21,1 per cent, oil flax 7,7 per cent, soya bean 15,7 per cent, in 1981 the share of sunflower rose to 77,2 per cent, whilst that of rape decreased to 14,3 per cent, that of oil flax to 2,4 per cent and that of soya bean to 6,1 per cent.

a/ The sowing area of sunflower has grown from 135-150 thousand hectares in 1976-1978 over and above 300 thousand hectares by 1981. The expansion of its production has been fostered by changes in agrotechnics /spreading of higher yield species and hybrids, solution of complex mechanization, etc./ but a decisive role has played the favourable economic conditions of production. In the interest of raising the production mood namely, a large part of the income formed inside the verticum has been realized in the agricultural sphere and thus it has become one of the branches of crop production rendering the highest income. Sunflower is giving more than three-quarter of the industrial basic materials. The expansion of its production has made the adequate exploitation of the increased industrial capacity possible.

Its production has to a greater extent spread in the districts of more favourable qualities at the detriment of maize giving essentially lower income. According to our survey in the farms of main production systems 41,5 per cent of the sowing area was on the lands of better quality in 1977, while in 1981 this surpassed already 54 per cent. The quick rhythm expansion of its production was, however, not void of problems. Its areal proportion has become in some counties of such a measure that has already jeopardized the security of production. We consider for the future extraordinarily important that the further expansion of sunflower production should be realized not by the increase of sowing area but by raising the average yield. Size and place of sowing area should make the necessary crop rotation possible, otherwise the spreading of its diseases may give rise to extraordinarily large crop failures. In this case also the adequate exploitation of processing industry would be jeopardized.

b/ The production of autumn cole-seed has not kept pace in quantity and quality with the needs of industry, thus we were compelled also

to import rape seed from time to time. The fluctuation of crop results, the weaker winter resistance increased by various agrotechnical faults and weather extremities make its production hazardous. Its income per unit of area reached in 1978 only 42 per cent of autumn wheat and hardly 60 per cent in 1980. If the income position of the branch does not change in the following years, the safe inland rape seed supply of the industry cannot be solved even to the present extent.

c/ In consequence of the extensive decrease of the sowing area of oil flax the quantity of crop reached in 1981 only about 60 per cent of that in 1976, notwithstanding a rise of 30 per cent in average yield. The decline of production has been caused first of all by the annual income differences in connection with the large crop fluctuations. The demand for flax oil of the national economy - which is being covered at present by import - would justify the development of the branch. The conditions are, however, not ensured because of the small size of the branch - neither biologically, nor technically in our country, the financial conditions on the other hand, do not make its import possible.

d/ The production development of soya has been a disputed problem since a long time. Our researches unambiguously verify that soya bean, as oleaginous plant is one of the most valuables. By its production the farms with adequate ecologic qualities are attaining considerable and sure income. Its processing is also in the industry economical. The increase of its average yield makes it possible to satisfy the need of the country in soya oil and soya bean for meals even with a growth of the requirements by raising the sowing area within realistic limits. We do not see justified, therefore, to increase the import of soya oil in the future. To raise, however, the quantity of home produced soya oil the creation of a special processing capacity is necessary. It is questionable whether it is rational to solve this within the framework of NMV or in an other way - for instance connected to an agricultural combine or production system.

3. Impact of the production development of oil industry on the protein fodder providedness of the country

Parallel with the increase of oil processing also the quantity of extracted grit produced has grown, its quality and composition are, however, not in harmony with the needs of animal husbandry. The inland production provides at present with only fragments of the soya grit necessary to the greatest extent to the production of fodder mixes. On account of the ecological limits of soya production a development of the branch is unthinkable in a measure, that would cover the soya grit needs, also in the time to come. The quantity of sunflower grit has increased to a great extent in the latter years, but its high shell content narrows

down its utilization area. Its quality improvement by subsequent investments is in progress, but even the first class sunflower grit is - owing to weaker quality of its protein - suitable for replacing soya grit in a very limited measure only. From the extracted grits the menu effect of rape grit is the worst, its circle of use the narrowest. As a final goal, therefore, the development of the oil verticum has not solved the satisfaction of protein fodder need with inland products, the replacement of import soya grit. But it may reduce the foreign exchange burdens of the national economy partly by moderating the import of soya grit, partly by selling on foreign markets the first class sunflower grit surpluses - if the improvement of the quality of sunflower grit will be realized in the planned measure.

4. Formation of export

The development of vegetable oil industry has altered also the structure of the export of oleaginous seed and vegetable oil. While in the previous years the quantity of the seed prevailed in our export, in 1980 and 1981 - as against 1979 - the seed export diminished to about half, whilst that of sunflower oil rose to 2,7fold and that of rape oil to almost 12fold.

In the decrease of the sale of sunflower seed abroad - beside the rise of inland basic material need - the narrowing down of foreign markets has also played a role. The increase of our oil export has made a better adaptation to the foreign market relations possible. Also the selling sphere of goods of higher value but less volume has widened. The structural change of recent years has spoiled the efficiency of our export, the gross foreign exchange output on the cost of Ft 100 compared to 1979 has decreased by about 20 per cent in 1981, while our whole foreign exchange income has risen by 60 per cent.

An increase of the price of vegetable oils in the world market is not to be expected in the future. The export-oriented production of industry, the keeping of export income on level respectively its speeding up make the increase of export quantity necessary.

The efficiency of export may be improved also by alteration of product structure and increase of the processing grade.

5. Satisfaction of the internal needs on an adequate level and more economical exploitation of export possibilities presuppose a better harmony of agricultural production and processing industry, conditions of which may be summarized as follows:

- In case of all oleaginous plants the development of agricultural production necessitates the continuous modernization of biological bases, improvement of production technics and development of the technical state of supply.

- It must be revised in what areal division /perhaps by counties/ the present sowing area of sunflower may be maintained without harmful effects causing crop deficiencies. We propose to take into consideration the adherence to it when concluding a contract.

- It is indispenably important for the basic material supply of adequate quantity and composition of the processing industry that a larger proportion than hitherto of the income of rape and oil flax verticum should be received by agricultural producers.

- The favourable profitability of sunflower must be maintained, thus, the quantity surpassing the need of industry increases our export commodity base. In the interest of raising the oil output per unit of area it would be practical to create the conditions of the receipt according to the content of oil, one of the most important of which is the total freedom of species and hybrid choice.

- We deem the creation of a new capacity of soya processing unconditionally necessary, because at the present one the increase of production of soya oil would inevitably decrease the quantity of maize-germ, flax or rape oil.

- The securing of internal supply and a better exploitation of export possibilities make the increase of the processing grade - sunflower, edible oil, margarine - and the early expansion of the necessary industrial capacity justified.

CSATORDAY, Géza: A szállítási lánc fejlesztésének vizsgálata az élelmiszeriparban, különös tekintettel a sütőiparra. /Survey of the development of transportation chain in the food industry with special regard to baking industry./

Budapest, AKI, 1983. No. 20.

Transport, material moving are in our country and especially in food industry on account of backwardness of mechanization an activity exacting staff. Approximately 57-58 per cent of the physical workers are performing in total want of machines and equipments with manual labour the jobs connected with transport and only 26 per cent of the physical workers performs these works fully mechanized.

37 per cent of the physical workers employed in food industry is engaged in production, 7 per cent in material moving tightly connected with production, 19 per cent in other activities connected with transport, within this latter 12 per cent in transportation and loading. Compared with the data of last year the situation of mechanization of transport and material moving has deteriorated.

In our country lorries convey inland about 90 per cent of the quantity of food industrial products, the conveyance by lorries gives 70 per cent of the goods/ton/kilometre performance. Notwithstanding that - in a different measure by industry branches - a not negligible portion of food industrial raw materials and finished goods are carried by other vehicles /mainly by train/, there is a possibility for the food industrial enterprise to improve the present transport system, to develop it, first of all, in the field of transport by lorries.

From the food industrial branches in the baking industry 56,3 per cent of the physical workers is employed in production, 1,5 per cent performs internal material moving jobs, 16,8 per cent is engaged in transportation, loading. The share of the workers in the field of transportation, loading, is the second highest in food industry after the beer industry. Approximately 82 per cent of the total weight of baking industrial raw material and finished goods is carried by baking industrial vehicles, 13 per cent by milling industrial vehicles, 5 per cent by train. In its totality, therefore, a decisive part of transport activity is performed by baking industrial enterprises.

18 per cent of the kilometre performance done by proper-handled vehicles of the food industrial branches, 7 per cent of the goods/ton/kilometre performance, 9 per cent of the weight of conveyed goods and 23 per cent of operating cost of vehicles emerges in the baking industry. Baking industry is one of the most transport exacting branches.

In the first half of the Sixth Five-Year Plan the profitability of food industry and within this that of baking industry had an abating tendency. The economic regulating system raises higher requirements against the enterprises than hitherto. Definitely has increased the measure of the state withdrawal of profit, that results in a more limited development possibility for the food industrial enterprises.

Baking industry is the most decentralized food industrial branch, that enjoys considerable subsidy for the development of its production process, has to realize, on the other hand, the modernization of its transportation activity mostly out of proper resources. Relatively little money falls to the share of the development of transportation activities of individual enterprises, because on the one hand the enterprises - contrary to milk and milling industrial branches - owing to their definite economic separation do not participate either actively or financially in the modernization of their mutual transport activities, on the other hand, because the enterprises spend their development sources on the production development, considered by them to be primarily important. The industry branch - on account of the limitation of its financial sources - cannot dispose of enough money to a complex

development of the transportation process. Knowing the situation of the branch, industry branch and national economy, neither may in the future be expected that it can realize within a short period a transport line suitable for the requirements in its transport activities.

Contrary to the basic requirement of the national economy against investments - according to which the share of the value of buildings is to be decreased and that of machines, equipments to be increased - we may witness a reversed phenomenon in baking industry. Gross and net value of buildings is growing, the state of machinery, equipments and vehicles deteriorating.

The resource rotation of the baking industrial vehicle stock, that is the total replacement respectively substitution time was in the past years above 8 years at the present rhythm of purchase and discardment, contrary to 6,2 years considered as average in the national economy.

The baking industry enjoys a price gap to cover the transport cost of its products. This price gap was not enough in the course of the past years even to offset the transportation activity. Following the price regulations of 1976 and 1980, the transport activity is becoming again more expensive than the price gap, as is shown also by the annual alteration of the result quotas: from 1976: 6,31; 4,03; -0,75; -14,75; 0,97; -6,22; -4,46.

As we have already stated, the baking industry has to settle down probably also for the future to narrow sources for transport development. On this account it must strive ensuring the maintenance on level to step forward in the fields meaning the narrowest bottleneck - claiming relatively smaller investment amounts - in satisfying needs and improving efficiency. Real examples of the association of possibilities and requirement are given by transport development, reported in more detailed way in the survey, in the works in Karcag and in the county of Csongrád /switch to transport of flour in bulk/, at the Kalocsai Sütő-és Édesipari Vállalat /experiment of a switch to transport of flour in containers/, at the Sütőipari Vállalat of the county of Hajdú-Bihar and Fővárosi Sütőipari Vállalat /switch to transport of finished goods in containers/. These examples are proving that numerous possibilities offer themselves for the baking industrial enterprises to develop transport activities by relatively smaller input.

The modernization aspirations in flour transport are expressed in the formation of a transport line by bulk, container and pipe conveyance. Regarding them technically and economically the form of transport of flour in bulk is the most founded in our country. Beside simplification, acceleration of the transportation process this form of conveyance is connected with saving in labour force and decrease of opera-

tional cost, if compared to the traditional transport of flour in bags.

The transport of finished goods in containers may be made economical respectively uneconomical by several factors. Out of these the length of the route, the measure of the density of shops within the given route, the number of shops able to receive containers, etc. may be determining. It may be stated that distribution will only be economical, if the time of loading and unloading is essentially reduced to the extent, that in the course of distribution the decreasing rhythm of hourly cost will be greater against the traditional transportation, than the increasing rhythm of kilometre cost. Evidently, not all routes in the supply area of baking industrial enterprises may be solved by containers economically.

In respect of the development of transport line it would be ideal, if the development of bakeries could be realized parallel to that of mills, concentrating the financial means. This would mostly ensure the complex character of development. To such a complex development, however, there is no outlook on account of the tight possibilities.

From the cases revealed in the study it is quite clear that we cannot give examples of complex development of transportation line, that is to say one, which concerns all links at the same time or nearly so either in vertical or horizontal sense /relating to all raw material carrying and finished goods distributing routes of the enterprise. It may also be derived from the examples that the enterprises could always perform the most pressing development, that could be realized with the scarce money at disposal. The enterprises are compelled often to realize developments prolonged in time. The development respectively their series prolonged in time may also be of complex view, if they are set into long range conceptions.

CSETE, László /Editor/ - ENESE, László - KOVÁCS, Árpád - SCHULZ, Mária - UJHELYI, Tamás: Gazdálkodási kézikönyv agrárszakembereknek. /Farming manual for agrarian experts./
Budapest, Mezőgazdasági Kiadó, 1983. 236 p.

More than two decades ago appeared in Hungary a similar manual, thus the book with the above title retrieves a lack and calls for attention. Therefore, it aspires to satisfy the severe claims raised against manuals, pocket books, that is to say conciseness, plainness and easy handling. Editor and most authors are collaborators of AKI and have made wide use of the research findings at their disposal in editing and compiling the manual. It is true that the scientific findings have

been published not in complicated drafts but in form of data, parameters, schemes of thinking or simple illustrations. The manual wishes to satisfy practical needs. Though the editor draws from the experience of previous similar issues, originality, looking for new ways leave their marks on content, mode of edition. As all novel initiative, this is also not free from various deficiencies, but the immediate keen interest following its appearance indicates a good acceptance.

The manual does not comprise all problems of economy, but all concerns, challenges, those less known have received preference in the proportion of inscriptions, themes among themselves.

Beside reporting basic data, informatory parameters, supporting various analyses, one part of the subject-matters and tasks of economy is approached by the author through putting questions and with the intention that well-put questions might lead to right solutions. Managers may make use of data, parameters as system of scale, the questions as self-control. The practice is also served by the fact that production organizing, managing experts may annotate beside the reported data, parameters in the empty places the data of their farms, moreover, the data of the next years, too.

In the centre of the informations of the manual stands as a motto: "Good quality, relatively cheap!" Every information serves this, as in Hungary this is most important for the efficiency, competitiveness of food production.

The cost-income data of the more important products of producers' co-operatives and state farms have received great weight in the book, namely: production costs, specific yields, prime cost, average selling price, income indicators for Ft 100 production cost, product unit and producer unit.

To an almost similar extent are assessed in the compilation the shares of input - place of production - output. The agrotechnical and technological costs are revealed and illustrated by figures, the coherences of function connections and subsequent inputs, the growing significance of their recognition, the importance of expressing numerically the peculiarities of the arable land.

Also the names and more important results of producers' co-operatives and state farms, that have achieved outstanding economic results are published with inciting intent, in the interest of information exchange and contacts.

In the subject-matter of organization and management the manual is leading the interested expert through the questions of working procedure organization, knowledge of the formation of organizational units, relations of the organizations, computation of outside circumstances

and factors influencing the corporate organization, factors with impact on the efficiency of management, etc.

The agroecology of Hungary does not make only an abundant supply of the population possible, but is exporting from year to year to a growing extent. Therefore, the manual takes into detailed account beyond the survey on the foreign trade turnover the shaping of dollar and rouble settlement prices, the movement of world and Common Market prices, the international changes of the prices of more important materials, means and compares all this with the Hungarian purchasing and selling prices.

The inscriptions belonging to the themes planning and prognostication pay attention first of all to the particular agricultural time horizon, to the continuous planning, to the forecast of specific yields and to the shaping of labour force.

One of the challenges of the era is the higher utilization of biomass and the energy management. Therefore, the book is announcing keys of conversion and takes one by one the questions, that are to be considered by practising experts.

The foraging data are helping the more economical feeding in a manysided way, detailed as per animal species and value of internal content. The inputs /fertilizer-need, seed requirement, multiplying material claim, plant protection, irrigation/ stimulate the reader to rational utilization.

The informations about amelioration are serving the protection of arable land and the increase of its fertility. This is especially important, then Hungary is not at all rich in natural endowments, therefore, among her resources the continuously diminishing but regenerable arable land is of particular importance.

In the appendix the editor is enumerating corn unit keys, the SI unit of measure system and nomograms.

CSETE, László - LÁNG, István - HARNOS, Zsolt /Editor/: A magyar mezőgazdaság agroökológiai potenciálja az ezredfordulón. /Agroecological potential of the Hungarian agriculture at the millennium./

Budapest, Mezőgazdasági Kiadó, 1983. 265 p.

About 50 research places and 400 experts have participated in the assessment of the agroecological potential of the Hungarian agriculture and in the prognostication to be expected at the millenium. Beside the performance of assessment and synthesis of knowledges at disposal, the target was to forecast with the knowledge of our days what crop produc-

tion may be at all achieved about the millenium as to its volume and composition, taking into account the expected shaping of agroecological potential.

The survey comprised arable land, area of grass, orchard, vineyard, forestry and medicinal herb production. The prognostication did not examine only the whole of the country, but within this surveys respectively forecasts were made of 35 economy-geological zones and dividing them further into 205 soil mosaics on the basis of 31 types of soil found in the country. These were properly speaking calculation units in the course of the prognostication, for which above all forecasts of amelioration and irrigation have been made. Characterizing the change in time of meteorological conditions, the surveys were performed worked our for climatic types of the year.

Beside the combined application of expert group assessment and various statistical mathematical methods, the structure of arable land has been optimized, taking aim at the maximum yield, emanation of energy and protein production.

On ground of the surveys it could be stated that given Hungary's relatively favourable natural endowments, the potential of species at disposal, material-technical, organizational and economic conditions, the crop production may be increased by further 80 per cent, that is to say, it may be doubled in theory during the following two decades.

The prognostication paid special attention to cereal production and to the expansion of protein outputs. It reveals in both considerable reserves. The forecast for vegetable, fruits and grapes has put emphasis mainly on the quantity and safety of production. The prognostication for forestry drew the attention to remarkable, hitherto not known reserves, what may in itself be accounted - beside scientific results - for a considerable practical benefit connected with the increase of energy cost.

The compilers of the work are also drawing up research tasks leaning on partial results and proposing to guiding organs to lean on these reported research findings when elaborating their long range economic development conception.

The more important spheres of thinking of the book are as follows: Summing up survey of the assessment and findings; agroecological characterization of Hungary, agroecological districts; recapitulation of soil assessment; report of the meteorological survey; hydrological survey; prognostication of amelioration; decrease of arable land; environmental and nature protection; forecast of crop production; that of social needs; expected formation of consumption of the population; producer consumption of agriculture; prospects of foreign trade require-

ments; versions of social need; optimization of the structure of crop production; mathematical model; database and condition system of the model; appreciation of calculations made for the optimization of the structure of plant growing; sensitiveness of climate of crop production; prognostication of fodder material and fertilizers, social and economic possibilities of the exploitation of agroecological potential; growing role of the human factor and of economic conditions; areal development; possibility of the exploitation of agroecological potential in enterprises, plants, moderation of the impact of limiting factors; many-sided utilization of crop production use of the database and of the applied method.

CSETE, László - SCHULZ, Mária - MÉSZÁROS, Sándor - FÓRIS, Józsefné:
Bács-Kiskun megye mezőgazdasága az ezredforduló körül. /Agriculture of the county Bács-Kiskun about the millenium./
Budapest, AKI, 1984. No. 1.

Out of the 20 administration units of the country, the county of Bács-Kiskun is of the largest area and of national significance regarding several products, both in the domestic supply and in export. The question-marks of the future development of agriculture, the agricultural impacts of changing economic circumstances have a special weight in the county of Bács-Kiskun, in the economic structure of which agriculture is of decisive significance.

What are the possibilities of the development of food economy, what production may be expected at the millenium as to volume and structure, what alternatives of development may come up - to reply to these questions has been started and finished as the first this research work, original in many respects at the request of the directors of the county. We have prognosticated in the study, founded on the wide assessment of the natural, arable land and economic particularities of the county, the output of crop production to be expected at the millenium and its various exploitation possibilities. The forecast has been spread beside crop production also to other branches - animal husbandry and a large part of food industrial specialized branches - has dealt after all with the whole of the future of food economy.

On the basis of various possibilities of development, of the examination of the future of branches we have tried to reply to the question, what development strategies can help in attaining the elasticity required by changing economic conditions. Following the target we have performed the assessment of endowments and constraints, the considera-

tion of the measure and direction of development in a manysided way, with a high grade detailedness.

The valuation of soil particularities has been made on the basis of genetic soil mapping system determining 96 soil sub-types. With a similar detailedness has been made the assessment of the hydrological bases and amelioration tasks of the county, too. On ground of the relative homogeneity of arable land and economic factors we have determined 16 agricultural small regions within the county. The food economy of the small regions was represented by 31 crop production and 5 animal husbandry. The special food industrial branches were taken into account only on county level. Possibilities, conditions and constraints of the development of various branches were assessed by drawing in expert groups and by continuous consultations with county experts.

We have considered in the course of the work the fundamentals of food economy, the limits of development to be decisive to different extent. We have not taken into consideration investment limits neither constraints of sale and market in general. Some products have meant an exception, the reliable forecast of foreign market demand of which has made it justified. On the other hand, we have taken into account the labour force providedness of the county and its impact on the production structure at the millenium. Similarly, we have also considered the situation, direction of the movement of small-scale production when prognosticating the measures of horticultural and animal husbandry branches. We have determined with linear programming from the preliminary assessment findings of the development of branches and small regions the structural optimums, that are giving help to the county in selecting the road to be followed in future.

In the model of 750 variables and 360 hypotheses we have optimized at county level the joint results of crop production, animal husbandry, forestry and food industry. We have prepared the calculations in several versions. The versions meant partly the application of target functions of various content, partly the development of individual branches to a divergent extent.

We have looked for four result-category maximums with four target functions:

- of the gross production value,
- of the net income,
- of the export price income in dollar relation, and
- of the export returns in rouble relation.

On the ground of the variants of production structure "found" with various target functions, it may be decided that in case of economic conditions represented by various target functions at the achieve-

ment of what development directions and proportions is it justified to be after.

According to the calculations the issues of food economy of the county may grow by 80 per cent up to the millenium. It is worth special mentioning that the development brings also forth the moderation of the present differences among small regions. The productivity of work will grow in a measure surpassing that of production. In case of the prognosticated growth of production a considerable part of the products turned out - 60-65 per cent - is a surplus over the need of county population.

Out of the product surpluses, nationally forecast for 2000, the county may give in the various prognosticated versions 30 per cent of wheat, 7-18 per cent of maize, 8-11 per cent of sunflower, 28-32 per cent of vegetables, 7-17 per cent of fruit, 35 per cent of grape /resp. wine/. The most important lesson of the study is that the key question of the achievement of the results made probable for the millenium is the reduction of specific energy, material and means requirements of production, respectively the taking of the steps ensuring this.

It is an important task a further improvement of the present also active energy balance of agriculture, the rational exploitation of produced biomass, the speeding up of investments ensuring the lifting of limits - want of water, soil deficiencies - influencing in a long run the whole verticum of food economy.

FÜLÖP, Zsuzsanna: Új kapcsolati formák a külkereskedelmi expanzió szolgálatában. /New interfirm relations and their role in the promotion of agricultural foreign trade./

The paper was read at the Fifth Finnish-Hungarian-Polish Seminar on Agricultural Economics in Ruissalo Turku, Finland, June 13-17. 1983.

The vital role of foreign trade in the Hungarian national economy is a widely known fact and thus the importance of an efficient food and foreign trade intersectoral relationship for an export led growth strategy is easy to understand. In the past years, however, because of the rigidities of the organizations and the conflicting interests of producer - and foreign trade firms involved just the efficient interrelationship got into progressive difficulties. This situation became particularly onerous because of the bad shape of world economy and the sharply increasing market requirements in the 70-ies. As a consequence there is a growing effort to ease tensions and resolve conflicting

interests among producing and foreign trading firms since the second half of the 70ies.

This paper tries to give a description of those experiments which attempt - in the sphere of agricultural exports - to modify interfirm relationships and the organizational system. At the start mainly an improvement of interfirm relationships was envisaged, but later it became progressively clear that organizational changes have to be started also.

The organizational system and the types of interrelationships of firms are an outcome of the economic policy and the control and management system of the state.

An exploration of new ways and means in economic management started in the years 1956-1957, with the aim of a partial and gradual transformation of the planning and management system. Apart from smaller modifications, however, the directive planning and management system remained in force until 1968. With the introduction of the new economic management system, however, at the 1. January, 1968, a new chapter of the national economy was started, despite the fact that in 1973-1978, efforts concentrated on the development of production somewhat pushed into background the progress of economic reform.

The new economic management system very strongly emphasized foreign trade but did not interfere with the state monopoly of foreign trade. The idea of a closer co-operation between production and foreign trade was raised in the course of the preparatory work already, but the institutional system remained despite this untouched, as there were no plans for a modification of this.

Improvement of foreign trade efficiency was expected to result from the closer co-operation of production and foreign trade and of a transformation of the relationships.

Prior to 1968, the producer and foreign trade firms entered so-called supply or "plan" contracts the later referring to the obligation to put down plan targets into interfirm contracts. The foreign trade firm purchased at a price fixed by the authorities from the producer firm and sold on own account; there was no close relationship between the purchase and the selling price. Both the producer and the foreign trade firm were interested in the volume. Foreign trade firms had no means for effective commercial activity since they did not dispose of financial assets necessary.

Contractual relationship between producer and foreign trade firms significantly changed after 1968. Commission became the predominant contractual relationship with pool, joint account, etc. agreements, and export and import on own account of the foreign trade firm which was the dominant form previously, was allowed only on permission. At

the request of the consigner it was obligatory for the foreign trade firm to enter a contract of commission i.e. a compulsory consignatory relationship was created. Because of the fixed commodity handling competence of the specialized foreign trade firms, however, the producer firms could sell their goods to a single foreign trade firm only. Thus, a monopolistic situation and a compulsory relationship existed for both partners.

For several products the commission contract which is almost universal since 1968, does not really work. New regulations were introduced in 1978 to ease existing tensions, urging a closer co-operation of the partners and establishing suitable preconditions. In compliance with the new regulations producer and foreign trade firms can establish foreign trade associations and agencies without legal entity. So far eight foreign trade associations and agencies were established for the export of agricultural and food products. All these have in common that business for the association is done by the foreign trade firms with the respective operational units performing administration necessary. It is envisaged for these associations and agencies in the future to be transformed into organizations with greater independence, having their own accounting, etc. Members of these associations and bureaus, i.e. producer and foreign trade firms share profits and losses. Decisions are made collectively at the meetings of the Board of Managers made up from the representatives of the member firms.

But according to experiences available, foreign trade associations and agencies so far realized only to some extent - the somewhat exaggerated - hopes.

There are still very little freely disposable financial resources in the hand of foreign trade firms and this makes even reasonable risk taking hardly possible. /New income regulation introduced in 1980 reduced instead of increasing free financial means of foreign trade firms./

Much more important in my opinion than the setting up of associations and agencies was the initiation in 1980 of organizational change; loosening of the monopoly of specialized foreign trade firms by granting parallel export rights and easing of compulsory interrelationships.

For the sake of accuracy, it must be stressed, however, that parallel export rights exist for the time being only within a very narrow sphere. But the future lies undoubtedly in the liquidation of compulsory interrelationships and the creation of the basis of free choices, i.e. the establishment of the preconditions - last but not least financial resources - for such decisions.

GÁBOR, Judit - KÓBOR, Kálmán - NAGY, János - ORBÁNNÉ NAGY, Mária:
 Az élelmiszeripar és az élelmiszerfogyasztás fejlődésének 2000-ig
 szóló prognózisa.^x /Forecast of the development of food industry
 and food consumption up to 2000./
 Budapest, AKI, 1983. Manuscript done at the request of the Head
 Department of Planned Economics of the Ministry of Agriculture and
 Food

The changes of the world market conditions of the recent years have set radically new tasks to some branches of our national economy /first of all as regards export/ and within this also to our food industry. From the view of further improvement the probability is more and more less that the development tendencies of the past period will continue. It is also evident that in the following years the task of restoring the economic balance waits for the Hungarian national economy, and later on in the future the maintenance of it. Under such circumstances a rapid industrial or agrarian development may not be reckoned with. Looking at the providedness with production resources and given the character of Hungarian food production, we are seeing also in the long run the satisfaction of the raw material need of meat, milk, canning and sugar industries basically ensured. The milk and sugar industrial production satisfy first of all domestic need, whilst the surplus of meat, meat products, vegetable and fruit conserves will be exported.^{xx}

The Hungarian food industry covers practically its raw material requirements totally from inland sources and is wanting large volume raw material import only in regard to tropical agricultural products /coffee, cocoa bean/.

We intend to develop the productive capacity of food industry moderately in the long run. In the present Sixth Five-Year Plan period no large state investment will be started in this field and the realization of enterprisal /subsidied/ investments may be made only in the spirit of the improvement of efficiency, competitiveness and of the balance situation. The national network of food processing has practically taken shape, further on the development sources - above all through reconstructions - have to be spent on the improvement of the technical level, the creation of harmony in technological processes.

x The long range prognostication of food industrial production and consumption has been prepared at the request of the COMECON Food-industrial Co-operation Standing Committee, on the basis of common directives and sphere of themes issued by the Committee.

xx In the study we have treated only the development of the enumerated food industrial specialized branches.

The import-limiting measures are in tight connection with the problem sphere of the food production, more exactly with that of the supply branches of it. For the background branches of food industry a low grade state of development is generally characteristic, first of all the satisfaction of the need of machine and packing means of processing industry falls behind. Our food production has to lean to a greater extent on inland background branches, that does not, however, mean that we could give up machine and material imports of capitalist origin in some fields, above all in the interest of the increase of the technical-technological level.

The connection with the background industries is characterized by the fact that between 1975 and 1980 the production of inland supply branches did not even satisfy in 50 per cent the machine need of the food industry. The machine import was divided largely in identical measure between socialist and capitalist relations. A similar situation could be secured in the field of packing materials and means. The background branches do not consider our food industry as an adequate purchasing market, but it must be mentioned that neither the background industrial development questions have received an appropriate emphasis among our industry-political targets.

Within the survey of food consumption the emphasis rested on the revelation of the present and future consumption reflecting the nutritive material norms. We have dealt beyond this also with the assurance of food supply suitable for single population groups and fostering healthy nourishment.

If we compare our average food consumption of nowadays with the nourishment norms elaborated by experts,^x we find encouraging and problematical elements of nearly equal weight. The present level of the consumption of products containing animal protein and cereals approaches the norms to about 90-95 per cent. The consumption of sugar and fat is one and a half more than necessary, while the reached level of the consumption of fruit, potato and vegetables is only two-third of the quantity satisfactory in respect of healthy nourishment. The increase of the consumption of vegetables rich in vitamins and mineral substances and at the same time of lower calorie content would be desirable also out of economical aspects; one part of the more expensive animal protein could be replaced by these products in a way that they would in totality ensure the physiologically necessary quantity of proteins.

 x The norms suitable for healthy nourishment had been worked out in our country in 1981 by the Home Trade Research Institute. To our work - with some modification - these norms had been used.

If the change in the structure of consumption will follow the present trend also in the future - and this is to be expected without conscious influencing of consumption, without application of effectual consumption political measures - then neither at the time of the millenium may be asserted that the average Hungarian food consumption is healthy as regards all main products. It is sure that by that time we will suit expectedly the nourishment norms in meat, milk, milk products, egg and cereal consumption. The expectable fruit consumption about 90 kilos will only be less by 10-15 per cent - instead of the former 30 per cent - than the required level. In fat and vegetable-potato consumption we will lag behind the norms by 30-35 per cent in spite of the changes of positive trends. Our sugar consumption will unalteredly be by more than 50 per cent higher than the biologically healthy 25 kilos.

In the near future the satisfaction of the special demand of some strata of the population has to get larger emphasis in the food supply and consumption. Within this, too, it is most important the further considerable widening of the dietary, low calorie respectively fat value food choice, having come to the market since the second half of the seventies, to satisfy the demand of diabetics, those disposing of surplus weight and other ones needing diet.

GUBA, Mária: A termelői érdekelttség és a termékpályák alakulása a zöldség- és gyümölcságazatban. /Producers' interestedness and the shaping of products lines in the vegetable and fruit branches./ Budapest, AKI, 1983. No. 5.

1. Formation of the product realization prices, possibilities and conditions of income making

Between 1970 and 1981 the production value of the fruit branch grew to 2,2fold, that of vegetable to 2,7fold. This growth was due in case of fruit in two-third, in that of vegetable in 70 per cent to the growing trend of prices. The increase of volume was the cause in 31 respectively 22 per cent and hardly interfered the change of production structure as a whole, having been 2 per cent in case of fruit and 8 per cent in that of vegetable. This is connected with the relative small volume of the demanded, high price, work exacting products.

We cannot evidently deny the positive role of the rise of prices, because it has contributed to the development of production, to the control of production decrease of some branches, may be to the favourable influencing of the production. The rise in prices was nevertheless only partly consequence of the pure price change, the qualitative com-

position, market preparedness of horticultural products have become more favourable, even if in a moderate measure. Thus, the increase of the state producer prices of fruit was brought forward 55 per cent - in the mentioned period - by the favourable change of the qualitative composition. /It is true that the role of vegetables was only 7 per cent./ Apart from the fact that in horticulture the role of quality determining the price is of fundamental importance, this depends not only on the quantity and quality of work input, but to a large extent on the impact of weather conditions influencing the balance of supply-demand. In spite of growing tendency of products prices, the key problem of the fruit branch is the attainment of profitability and of the ability to produce an adequate income. The vigorous fluctuation characterizing - beside a growing trend - the vegetable and fruit production of the seventies, had several times forced the active interference of state organs. Nevertheless, neither branch may be considered balanced or free of problems. The increase is unbalanced in time and among branches, laden with numerous internal structural problems. Its area requirement is relatively small, it produces at the same time great value reflected on area unit, but is extraordinarily sensitive of weather, that is equally shown in the quantity and quality of production; the income situation of the branch is greatly influenced by market conditions, by the formation of utilization directions.

In agricultural large-scale farms and in small-scale production the creation of profitable production conditions, the achievement of as high income as possible are equally fundamental. But while the large-scale farms are above all profit-oriented, the small farms are interested in the attainment of an as high gross income as possible - as work possibility meaning a source of surplus income. This is also shown in the work division between the two sectors. What are the main concerns of the branch?

- The growth of producer prices does not compensate the increase of costs at the present output level in the majority of branches. The low outputs do not give possibility to insert into the prices an income of real amount beyond covering costs. We are disposing of few reserves for the quick increase of outputs, and the possibilities to moderate the annual huge product fluctuations are very limited.

- Neither are there many possibilities on the side of cost to improve the income position and rentability at this growth of the inputs.

- To decrease the large-scale farm inputs offer themselves first of all possibilities given by organization, on the other hand the material costs are increasing with the speeding up of mechanization; with the mechanization of harvesting the profitability of production stagnates

or falls back in most of the branches on account of the slower growth - or even deterioration of outputs.

- With the rise of the technical, technological level of large-scale production, out of the costs per area unit, the proportion of the costs depending on the output is becoming smaller and smaller. It is a concern that within the specific costs the general costs are rising to a much larger extent than those that may be directly accounted for.

- Also the means requirement of a large part of vegetables and fruits is high, their efficiency of means lags behind the plough-land plant production branches.

- The - further on expected - increase of various input-prices, the future moderation of production subsidies will result expectedly in a decrease of income.

The decrease and low level of profitability mean first of all in large-scale farms specialized for horticulture a seemingly unsolvable problem. /More and more less equipped farms producing vegetable and fruit on small plots are giving up production of given goods./ The largest reserves for the improvement of results is in the internal organization, in the creation of direct material interestedness of those employed in the branch. Somehow in another way is the question of the rentability of small-scale farm production raised, where also the wages appear as income and one part of general costs - playing a role of great weight among the costs of large-scale farms - falls out, too.

2. Main characteristics of the product line of fresh vegetables and fruits

The prices of horticultural products are diverging by production sectors, owing to different selling directions, qualitative differences, deviations of processing grade, but there are divergences also in the size of inputs and costs. Between the producer and consumer prices of vegetables and fruits there is a more and more opening gap, that means above all a source of tension between producer and trader, owing to unprofitability of agricultural production. The economically unjustified cost-increasing impact of the present product line could be reduced by approaching the producer to the consumer and the income could be raised by the moderation of the organizational, technical way, time and cost of trade. For this, however, better organizational forms and further fixed and current assets, inputs would be necessary. The surplus input of the large-scale farms - even if they possibilite an achievement of higher prices - do not comprise surplus income in general.

Theoretically true is the statement that possibility of many-channel selling - taking all agricultural products - is mostly given in horticulture. On the basis of the data of 1981 it may be stated that

two-thirds of the produced vegetable and more than half of the fruit have come to the central commodity base through industry branches and co-operative trade. Besides, self-sufficiency is though declining in tendency, but still working in one-fifth of the vegetables and 17 per cent of the fruits. The competition in the remaining volume of goods can thus exert a very modest influence on the future of the branch, on the direction of its development. Notwithstanding, its role should not be underestimated, as half of the fresh vegetable, three-fifth of the fruits coming from the trade for the consumption of the population is made up by direct shopping, public delivery and by the quantity of sales in proper shops and in the market. With the liquidation of Zöldért and of the organisation of the canning industrial trust, with the enterprises becoming independent, also among these units a competition may be established. On account of the high need of means and cost of transport, however, almost as the sole possibility - for mass goods - the local collecting organ may be reckoned with. Thus, in spite of the theoretically existing more channels, product selling often becomes a "controlled" line, as there is no possibility to choose a new partner. To do this, the producer, too, would need considerable material means.

The advantage of the many-channel system is - if it functions according to the balanced market conditions - that the dependence of the producer declines. On the other hand - in case of shortage in commodities - everybody tries to obtain the product for his own purposes even by "putting up the price", not caring what would be the most rational and economical way of exploiting the tight commodity stocks for the national economy.

The many-channel selling has served only partly the shaping of production structure adapted to the need of the users. The end-product interestedness of producers is not existing and does not prevail in many cases. The direction of improvement may be the strenghtening of market influence, the joint risk-taking. The real market, the realistic commodity relationship suppose, however, competition. At present, when in the other field of economy, there is no real market operating and when some branches are struggling with export sale difficulties, producing enterprises rather give up advantages of competition, than take its negative economic consequences.

The Zöldért enterprises are trying as from this year to draw the producers into performance of some work processes by giving various price allowances. Depending on the scale of preparation and on where - place of production, agency or direct to the retail trade unit - the producers deliver goods, they participate in the consumer price. It seems, however, that this solution, the achievable price and the ne-

cessary input will not result in an explosive change on the field of trade. On the other hand, it presupposes such an internal trade regulation, which make the more elastic price modification of shops possible, enlarges both the personal interestedness of shop managers and employees and at the same time their responsibilities.

The participants of the special trade argue about the reality of the growing difference between the collection and shop prices; what is more, they consider its increase justified out of financial causes. It is often raised that in our country 50-60 per cent of the consumer price is producer price, while in the western countries of developed technics it is only 30-35 per cent, underlining so to say that the difference in the technical level of trade may be traced back to financial concerns. Without disputing that the developed technics mean higher costs and it has to be reflected in the consumer price, it has to be expressed also in the quality of goods and in the level of trade. In want of adequate material interestedness it may not be expected from either organ that it should undertake the performance of an activity out of economic consideration. Essentially less is the difference between the market producer price and the consumer price, it is often only a fragment of the price differences between the collection prices of co-operative trade and that of retail trade. Naturally this price-gap difference may not be considered wholly as "savings", only one part of it is being built into the producer price; the goods are delivered by the producer to the market and he is selling goods not products. The co-operative trade takes over mostly original products, the transformation to goods rests upon the trader, at the same time the transport costs present themselves with great weight, that might supposedly be done more economically than performed by the units of trade, but may not be left off. It is a fact, too, that the co-operative trade is forced to keep up a very large administrative apparatus; the administration makes elasticity, a more economical cost management difficult, does not work always according to market demand, and this makes trade naturally more "expensive".

GUBA, Mária - PAPP, Zsolt - SZÜCS, Zoltánné: A kertészeti termékefeleslegek okai és jellemzői. /Causes and characteristics of horticultural product surplusses./

On the basis of Guba, Mária - Papp, Zsolt - Szücs, Zoltánné: Is there any overproduction?

Figyelő, Budapest, Vol. XXVII. No. 20. 13 p.

In recent time we may meet more and more often in the market of

horticultural products with signs of excess offer. This is connected on the one hand with the quantitative fluctuation of production, on the other with the operational confusion of the market. Therefore, the product surpluses presenting themselves from time to time may not be considered lasting and wholly unsalable. It is much more that from goods of certain kind and quality there are more offered in the given period and area than the demand formed at the given price level. The so-called structural surpluses thus formed may be counted to four groups on the basis of the size, frequency of overproduction and of the difference of causing factors and mode of solution:

a/ The greatest problem is today caused by the product surplus of winter apple. The high level production - not harmonizing with the need as regards species and quality composition - leads in the market to a lasting excess offer. Given by the nature of the goods, the offer at any time is concentrated in time, the utilization of various directions and purposes is drawn away in time, the possibility of immediate sale is limited. This double asynchrony - in structure and time - cannot be lifted by the market in its present form.

b/ In the case of the special product of horticulture, of wine, the outstandingly high production of grape in 1982 raised the question of overproduction. This overproduction is, however, single and cannot be considered from the side of needs as such. The basic problem is not caused by the sale of excess output, but by the scarcity of wine storing capacity necessary to viniculture procedurs and to the storage of processed wines.

c/ We could characterize the third group of products - with some simplification - as unsystematically repeated overproduction and market excess offer of such products, the production and use of which are concentrated in time and space. The large-scale arable land peas and tomato intended to industrial processing, the apricot, peach and sour cherry of similar origin and purpose. In the case of these products we may really speak of structural surpluses. On account of the influence of weather and the often shortened ripening and harvesting period the balance between the offered quantity and the receiving capacity of industry is temporarily upset. Slow taking over, want of transport capacity and packing material, frequent quality objections are showing the excess offer, while in other periods of the harvest season respectively in other selling channels do not reign normal market conditions, but even a shortage may be experienced.

d/ We may count to the fourth group the transitional /or lasting/ overproduction on account of market decline, of decrease in demand. The most characteristic domestic example for this is spice red pepper /pap-

rika/. We have to stress that the question is not a radical reduction of former quantitative requirement, but a qualitative transformation of demand and supply, and owing to this a desintegration of balance.

Product surplusses need depending on their character state interventions of various forms and measures. The excess offer situation connected with the disturbances of producers and consumers market demand measures first of all as regards regulators, but make from time to time also the direct market intervention necessary.

HALÁSZ, Péter: Nemzedékváltás és koncentráció a kisüzemi sertés-tartásban. /Change of generations and concentration in the small-scale pig keeping./

Budapest, Vágóállat és Hústermelés, 1983. No. 7.

The head of family of pig keeping small-scale farms come today first of all from the older generations and this phenomenon has been strengthened in the last decade. Almost one-third of the pig keepers in 1981 was in pension, more than half was older than 50 years of age. At the same time, we may also observe a symptom that in the circle of small-scale producers the number of pig keepers is falling back especially in the case of younger generations. Naturally, not only the share of small-scale pig keepers decreases, but also their number, namely by about 14 per cent in the course of the seventies, from 921 thousand to 792 thousand. Though owing to concentration and increase of the proportion of commodity production, the number of fattened pigs deriving from small-scale farms has grown up to now, but if we cannot increase in the near future the interest for pig keeping in the younger generations, the quantity of porker raised in small-scale farms will rapidly diminish. In national average, namely, a small-scale producer hardly delivers more than 5 porkers annually, and the younger not even as many. But an equally important condition of the integration of small-scale pig keeping and of slaughter pig production balanced in quantity and quality is the increase of animals kept in one farm, household.

The increase of the measure of small-scale pig keeping is not a wish or question of decision, but depends mainly on whether the agricultural large-scale works are able and in what form and measure to integrate, organize the different production procedures of small-scale pig keeping, how much it can create conditions of secure pig keeping.

Thus, the investing intention of small-scale producers would deserve a more vigorous financial assistance, approaching that of large-scale farms, that would possibilitate the specialization of the small-

scale farm activities and as a consequence thereof the younger generations could more vigorously than heretofore join small-scale pig keeping. Similarly it seems to be practical the development of the forms of sow lending and even more that of various hire-fattening forms and to adapt them to differentiated small-scale producer needs.

According to our survey the number of animals per one pig keeper has significantly risen, where the agricultural co-operation had introduced the institution of hire-fattening, provides the entrepreneurs with porker basic material and fodder, pays for the space and work of the small-scale producer according to the fattened weight. In the examined settlements around Pest the fatteners working in traditional form - when the integrating activity of large-scale farms is limited to the organization of collection only - have delivered 5,8 porkers annually. Contrary to this, in the case of hire-fattening contractors the concentration of the stock was three times larger, yearly 18,9 porkers were sold. At the same time, it has come to light that those of the younger generation like above all the hire-fattening forms. 92 per cent of the pig keepers under 30 years of age is fattening animals this way, only 22 per cent of the age of 50-60 and only 9 per cent of the pensioners. It is, therefore, not doubtful that the hire-fattening suits best the way of life, economic view of younger generations, and where the large-scale farm creates the conditions, young people are with pleasure and what is more to a greater extent engaged in pig fattening than the old ones in the frame of traditional organization.

HARZA, Lajos - MÁTYÁS, László - FOFT, József: Az Európai Gazdasági Közösség agrárpolitikájának főbb jellemzői az 1970-es évek második felében és az 1980-as évek fordulóján. /Main characteristics of the agrarian policy of the European Economic Community in the second half of the seventies and at the turn of the eighties./ Budapest, AKI, 1983. No. 15. 128 p.

The capitalist economic recession having had unfolded since the middle of the seventies has considerably modified the internal and external economic-social conditions, which have naturally had an impact also on the agrarian policy of the European Economic Community. The common agrarian policy of the European Economic Community was already at its working out respectively introduction not free of tension; the concerns could not yet present themselves in the midst of essentially more favourable economic conditions and relatively rapid growth with a force, than in the period having started from the middle of seventies.

Labour situation

Calculated in annual labour unit 8,8 millions worked in the agriculture of the European Economic Community in 1980 /including fishing and forestry/. Since 1960 the number of those engaged in agriculture decreased by more than 50 per cent and that means: in the last twenty years 1400 have left agriculture in daily average. In all countries the number of agricultural labour force has decreased, but the labour mobility slowed sensibly down in the seventies, as compared to the sixties. This process is the straight consequence of the more and more deteriorating engagement possibilities outside agriculture, and all this induces relatively many employees to stay in agriculture. Although the agriculture of the Community has a small weight within the whole economy, the governments of member countries follow with great attention the shaping of the agricultural labour mobility and intervene into the process, as the decisions of labour force - whether they stay in agriculture or "quit" - and the level of agricultural investments are influencing in the long run the formation of offer, after all the process of income formation. There is a further decrease of the number of employees to be expected, but in the long run even supposing a high wage increase rhythm outside the agriculture, we cannot count on a rise of considerable measure in the number of labour force leaving agriculture. This is causing anxiety in the common policy, because - at a given price policy - it could be achieved with an agricultural labour diminution of a greater rhythm than heretofore that the income difference among agriculture and other branches should not increase.

Prices

Both the investment and current producer utilization prices had in the period of 1975-1981 risen in a greater measure than producer prices: against 68 per cent increase of agricultural prices there are price rises of 74 per cent respectively 88 per cent. Within the present producer utilization the price of energy had risen most /141 per cent/, relatively in a low measure the price of plant protection drugs /46 per cent/ and seed and multiplying materials /56 per cent/. The costs of construction investment have risen to more than double.

In the economic years of 1975/76 and 1976/77 the agricultural end-product prices took a favourable shape in the Mines as compared to producer utilization prices. This proportion becomes negative in 1977/78 - excepting Italy and Ireland - taking in the following economic year a low positive value. The index is changing in 1979/80 again sign /except Italy and Luxemburg/ and the unfavourable process lasts also in the following economic year, what is more, it is speeding up in 1980/81, namely, the proportion is in all member countries negative, increasing at

community level to almost double of the previous year. In the middle of the period of 1975-1981 either the end-product prices or the current producer utilization price rose quicker, in the whole of the period, however, the rhythm of the price increase of the latter surpassed that of the former - reducing thereby the real income of agricultural producers /Table 1./.

Income of agricultural producers

The increase rhythm of the net agricultural income per one farmer between 1967 and 1974 kept pace practically with the rise of total economic average income /annual average increase rhythm of 4,5 per cent against 4,8 per cent/. Between 1974 and 1981 the total economic average income rose further on although with a less rhythm than in the previous period /by yearly 2,6 per cent/, whilst the net income of farmers decreased annually by 3,9 per cent /Table 2./. The decline of the agricultural net income ensuing in the period starting from 1972/73/74 can be traced back to fundamentally two factors:

- the cost-price gap has strongly opened up, and
- the decreasing rhythm of the number of farmers has slowed down.

The gap between input and output prices has risen, and could not be bridged over by speeding up productivity on the side of producers. The cost of works means have become "more expensive" as against the gross price returns: taking the gross price returns for 100, from 1976 until 1981 the current producer utilization grew by 11 per cent, the cost of investment by 3 per cent, the wage of hired workers, land hiring and interest fee by 2 per cent; at the same time the income from the work of the farmer, works management and investment diminished by 18 per cent.

The income assistance considered primary in the past period as target, will in the future expectedly be overshadowed - above all owing to constantly rising financial burdens.

Agrarian trade

The agrarian export of the European Economic Community had grown between 1970 and 1980 to fivefold, from 4,1 thousand million dollars to 20,8 thousand million dollars. Although export rose with a greater rhythm than import, the value of export did not achieve even 40 per cent of that of import in 1980: namely, the European Economic Community is the largest agrarian importer of the world. The unfavourable selling possibilities of the world market have in the recent time sharpened the already long existing tension between the United States and the European Economic Community. Both agrarian Great Powers have considerable product surplusses, the sale of which is on account of the world-economic crisis more and more difficult. The struggle for international agrarian

markets has grown more embittered and in this struggle both the European Economic Community and the United States are compelled to make sacrifices. The European Economic Community makes sacrifices in double sense: with considerable financial burdens KEEPS THE INTERNAL agricultural price level artificially high in order to stimulate production, then incites export with further cost /subvention/ - paying for the difference between high inland prices and lower world market prices.

The dynamic increase of the agricultural world export may be helped - beyond the limitation of agrarian protectionism - by the collective existence of more factors; there exists, however, first of all a necessity of the enlivening of economic boom in the developed capitalist countries and of not rising of oil prices at an excessive measure. We have to count in the long run with the fact that the changes arising in the agrarian policy will not be unfavourable for us: the European Economic Community and the United States will probably agree at the expenscs of other countries.

Table 1.

Difference of the percentual changes of agricultural end-product price and agricultural current producer utilization price in 1975-1981 as compared with the previous economic year

	percentual point					
Member countries	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
German General Republic	6,7	0,9	-3,8	0,5	-2,9	-2,5
France	1,0	6,0	-6,6	4,5	-3,2	-0,8
Italy	-1,5	4,1	2,2	5,5	0,3	-4,3
Netherlands	9,5	2,6	-3,5	-0,8	-0,5	-3,4
Belgium	10,6	1,5	-7,4	2,1	-4,1	-3,1
Luxemburg	1,9	-0,7	-0,4	-0,4	1,7	-4,6
Great Britain	9,3	6,5	-10,4	-1,9	-0,5	-6,3
Ireland	0,5	8,3	3,4	4,9	-4,5	-13,6
Denmark	5,3	4,6	-3,2	9,1	-5,0	-4,8
Nines	4,5	3,0	-2,8	1,2	-2,7	-4,8
Greece	-7,5	8,0	5,5	3,2	-4,4	-8,7
Tens	3,8	3,3	-2,5	1,2	-2,7	-5,0

Table 2.

Average yearly rhythm of the income of farmers and of total economy earnings

	from 1967/68/69 up to 1972/73/74	Total average economy earning	from 1972/73/74 up to 1979/80/81	Total average economy earning
	Net agricul- tural income per one farmer		Net agricul- tural income per one farmer	
German Federal Republic	+3,2	+5,5	-5,1	+2,6
France	+6,4	+4,7	-5,2	+3,6
Italy	+3,3	+5,7	+0,2 ^x	+2,4
Netherlands	+1,7 ^x	+5,2	-4,7	+2,1
Belgium/Luxemburg	+7,8	+5,3	-3,2	+3,7
Denmark	+4,6	+2,8	-15,5	+1,3
Ireland	+7,0	+4,6	-3,9	+3,9
Great Britain	+3,3	+3,9	-7,0	+1,4
Hines	+4,5	+4,8	-3,9	+2,6

x/ Net works surplus

HARZA, Lajos - MÁTYÁS, László: A termelési tényezők helyettesíthetősége a mezőgazdaságban. /The possibility of substituting production factors in agriculture./

Gazdálkodás, Budapest, 1983. No. 11. pp. 41-47.

The determination of the possibilities of substitution of production factors may be a very important efficiency-increasing tool in agriculture /as regards the determination of the optimum share of factors, listing of bottle-necks, etc./. The substitution relationship may be analysed with manifold methods, out of which two are examined by the authors. The writing is of theoretical character, problem-raising.

1. Production function of changing substituting elasticity

Maybe one of the most wide-spread tools of substitution research is the application of production functions. The most frequently used function types are supposing, however, a permanent respectively unit substituting elasticity, are giving, therefore, no reply to how the substitution proportions change with the alteration of production factors and of the quantity of turned out products. The authors propose for the producing of changing substituting elastic function a very simple, easily performed approaching method, that seems to be thus very useful.

/Though analytical methods are more accurate, but relatively clumsy./
The essence of the method may be summed up as follows:

We should examine a given species of plant. We should establish classes of number k , which differ from each other in natural conditions and yields. /For instance the first class j includes production data of worse plots than 20 gold crowns so that within this the first class comprises less maize yield than 2 ton/hectare, the class j , however, larger than 8 ton/hectare./ If it is possible to have enough observation in each class to estimate production function within classes /this is, however, achievable for instance by applying collectively time sequences and cross-section data/, then we may determine in each class one substitution elasticity. If we have established enough classes, then we may insert in the class elasticities - as in observations - a regression curve. If the insertion is adequate, the regression is approaching exactly the function of the elasticity looked for by us.

Further empirical research is needed to decide whether the above method is satisfactorily applicable to the Hungarian agriculture.

2. Approaching determination of the possibility of substitution on the ground of analysis of the utilization of production factors

The offer of agricultural products is to a great extent determined by production factors utilized. To be able to make the future formation of offer, the impact of natural and economic conditions on agriculture, probable, to sketch out the most important elements of the proportion change of production factors, we have to analyse in detail the mutual contacts of production factors. The central question is: how should we estimate the production factors utilized? The estimation method determines even in the case of comparison within the country the findings of the survey, in international comparison the difficulties accumulate. Above all the calculation of the comparative time sequences of labour stock and of the capital investment causes much trouble. The number of those engaged in agriculture covers divergent activities and notions according to countries, therefore, we have to trace back the number of labour force to agricultural wage-earners of main occupation. Estimating the capital we have to establish a measure, that expresses the performing capability of the invested fund in a way that it reflects at the same time the quantitative and qualitative change of fixed assets as well as its age composition and still expectable utilization time. From the utilization of fixed assets - in the function of time¹ - qualitative and performance changes are given and we can show this² all in the performing capability of capital stocks, if we make use of constant price indices. Estimating the capital we may establish such a method, on the basis of which the capital stock is depending only on gross in-

vestments, on average utilization period and on the maximum utilization time of investment.

With the estimation of production factors we may examine how the factor elements are formed separately. To be able to take into account also the substitution processes taking place simultaneously, we have to aggregate production factors. Though the value of such type comparisons is decreased by divergent contents of constituent parts and naturally also the estimation method may be distorting, nevertheless, the shaping of production factors indicates also in this way the differences of the production conditions of the countries participating in the comparison and the directions of divergences.

JÁNKY, Margit: A fehérvirágú édes csillagfürt /Lupinus albus/ termelésfejlesztésének jelentősége és fő feltételei. /Significance and main conditions of the production development of white lupin./

Lecture at the Westsik Vilmos scientific commemoration session, Nyíregyháza, 1983. 16-17. VI.

White lupin is one of those plants, with the large-scale utilization of which the shortage of domestic fodder protein respectively the import of soya-groats could be moderated.

Its raw protein content is of 34-37 per cent, its amino acid set full, its biological value approaching that of soya. Although its lysine content is less by 13-15 per cent, it contains, however, by 80-90 per cent more methionin. Its crude protein digestibility is very good, approaches 98 per cent with artificial digestion. Its energy content surpasses that of extracted groats, therefore, using to replace coarse soya bean meal makes the decrease of the quantity of energy-rich components - mostly maize - possible when making a fodder mix of identical internal value content.

The feeding experiments prove that in different concentrates soya-groats may be replaced without loss of result of 10-50 per cent, by the seed of white lupin. The protein of one ton of white lupin of Nyírség is equivalent to 0.76 ton of I. class /48 per cent/ soya-groats and thus, utilizing it an import of 250-270 dollar value may be saved. With the crop of one hectare /in case of an average yield of 1,8-2,3 t/ha/ the import of 400-600 dollar value may be substituted. It is true that this is inferior by 5-25 per cent to the foreign exchange yield of wheat produced for export in areas of similar quality, but surpasses that of maize in case of 2 t/ha average yield and is almost double of

the foreign exchange income per one hectare of the export of sunflower seed. Utilizing lupin for feeding, also the cost, calculated on national economy level for 1 dollar saving, is favourable.

The soil-improving effect of lupin is considerable, too. Though the soil requirement of the white lupin species differs from that of other species produced in our country, its harvest on dreary quicksand is low, but yields excellently on better quality hard soils. The expansion of its sowing area would be, therefore, first of all advantageous on acid forest soils of Transdanubia and North Hungary, that are less suitable for the production of other pulses. It may be considered the indirect advantage of the lupin seed that on account of its valuable stubble and root residues and great N binding capability, its production means at the same time biological soil improvement and feedstuff regaining, that are realized in a 10-12 per cent - from time to time in an even greater - crop surplus of the following cereals, above all of autumn wheat. The development of its production would, therefore, contribute to the economical increase of cereal production.

In our country the sowing area of white lupin is at present of 5-6 thousand hectares, its seed output about 1,2-1,5 t/ha. The spread of harvest results is in the various farms very large, the average yield fluctuating between 260-2425 kg/ha. The role of the seed in foddering is minimum, the seed of white lupin used in the production of all fodder mixes hardly reaches 0,1 per cent of other components. In order to make the possibilities of white lupin utilization bring considerable success for the national economy, a quick and large-scale development of the branch is necessary. The replacement of 5 per cent of the imported soyagroats - and there is no obstacle as regards foddering - supposes yearly 25-40 thousand tons of lupin seed. This quantity - including seed corn propagation - could be produced at the present yield level on a sowing area of 30-50 thousand hectares.

The expansion of sowing area is not limited by our natural bases. A suitable biological basis for the production development is secured by the species "white lupin of Nyírség" acknowledged by the state. The alkaloid content of the species is securely below the limit of eatability and its internal content values are very good. Its potential productivity is according to theoretical calculations about 5 t/ha, that is underlined by reproduction results of seed corn items exported to France and the United States. Its low output result are due, therefore, to a very bad exploitation of its biological potential. While this exceeds in national average in the case of principal cereals - wheat and maize - 60 per cent, reaches in that of white lupin hardly 20-30 per cent. A preliminary condition of its yield improvement is, therefore the raise of

average yields and the formation of an inciting producer price, that could collectively improve the income position of the branch. Though the increase of sowing area plays an important role in the increase of average yield in the regions of acid reaction but of better quality, fundamentally the alteration of the present production tendencies of very low level is necessary. Of its present technology is, namely, characteristic the extraordinarily low fertilizer utilization, that hardly reaches half of the rations given to the seed-pea, produced on essentially better areas. Its plant protection is neither sufficient, its soil preparation limited to the indispensable work. The insufficiency of production inputs is shown by the fact that 30-40 per cent of the direct costs and 14-17 per cent of seed corn is made of the cost of crop drying

In the raising of the yield of crop production the work of cultivation systems is very important in our country. In the organization of white lupin production is only one, small cultivation system in the North-West of the country engaged. The main task of this is, beside the production of all white lupins and the improvement of some kinds of them, the formation and spreading of a cultivation system, conforming to the special circumstances of the Nyírség region. Thus, the material and personal conditions of the cultivation system are not enough to organise the production of white lupin and to adapt adequately its technology to local conditions, although it could be produced in 11 countries of the country. The better exploitation of the potential productivity of the white lupin species of Nyírség makes, therefore, also the modification of the production organization necessary. In order to engage farms of better endowments extensively in the production of white lupin the formation of stimulating producer prices is necessary, too. In the present price, namely, the feedstuff content of lupin is devaluated. The producer price projected on 1 kg digestible crude protein content is by 20-40 per cent less than that of horse-bean respectively fodder-pea, both of the same utilization. It corresponds on the whole to the value of imported soya-groats calculated in Forints, the purchase of which is made in dollar settlement and the energy content /starch value/ essentially lower than that of white lupin. The low producer price, compared to the internal content value of lupin, is proved by the fact that in the fodder mix soya and maize groats of such a value can be saved by utilizing 1 ton of white lupin, which could make an increase of 10-15 per cent in the present producer price possible. Suitable production organization, application of a higher level technology and formation of a more stimulating producer price are the condition to achieve a scale of white lupin production, that would increase the safety of protein fodder supply and moderate foreign exchange burdens of the national economy.

JÓZSEF, Sándor - SEBESTYÉN, József - VIGH, Judit: Természeti és gazdasági hatótényezők szerepe a búza és kukoricatermelésben. Az állami gazdaságok példáján. /The role of natural and economic factors in the wheat and corn production. Demonstrated by the case of the state farms./
Budapest, AKI, 1983. No. 4.

By an analysis of wheat and corn production we intended to review the actual conditions of our grain production, also to help to assess more realistically the opportunities and requirements in the period ahead. We could concentrate our calculations to the most important two crops because the technical conditions available for them are decisive for all grain production, in several aspects for the whole production on arable land too, and from the results of these enterprises depends to a great extent the efficiency and ability to earn foreign exchange of the agricultural activity as a whole. The characteristics of this matter required analyses under different angles, thus a combined application of various methods and mathematical techniques.

1. The meteorological conditions

Dealing with effects of weather, the averages of the 1901-1950 period are often used, even nowadays. The two decades /1961-1980/ to which our studies are related, differ from the 50-year period in several important meteorological characteristics: in averages, in variances, in probabilities of occurrence for indices important for the various crops, etc.

Not only weather showed differences in these decades, agriculture itself too: in farm sizes, structures of production, in new technologies characterized by new tools, modified levels and composition of inputs and by a quickly changing structure of varieties. This also explains why we found weaker relationships between the yields and the weather indices that appeared as critical factors according to an analysis for 1949-1962, made by the Econometric Laboratory of the Central Statistical Office, the doubtlessly existing relationships with weather became more hidden and more difficult to be quantified.

Anyway, the inclusion of weather variables into the production functions helped to explain greater portions of the variances of wheat and corn yields for the years 1962-1978: by 6,41-29,38 points more for wheat and by 10,04-35,58 points more for corn than without meteorological variables.

The yearly cross section and the cross-section-time-series functions fitted for the average yields were well supplemented by the functions describing the behaviour of the distribution parameters /mean,

standard deviation, relative standard deviation/ of the dependent and independent variables.

The yearly regression functions showed that an improvement in soil quality equal to one gold crown per hectare was linked with yield increases of 26,18-54,34 kg/ha for wheat and 32,51-100,8 kg/ha for corn. For the whole period, the cross-section-time-series functions gave the average increase of yield caused by an improvement of soil quality by one unit as 41,0 kg/ha for wheat and 73,9 kg/ha for corn. According to the same functions, an increase by one unit /Ft 1000 per ha/ of direct costs brought increases in yearly yields 140,8-473,7 kg/ha for wheat and 138,9-421,7 kg/ha for corn while the averages for the whole period were 350 and 351 kg/ha, respectively.

From the functions for the distribution parameters we learned that an increase by one unit /Ft 1000 per ha/ of the yearly average of direct costs resulted in an increase of the expected value of the yield per hectare by 374 kg in wheat and by 450 kg in corn production.

Similar coefficients were calculated for weather variables, too. A +10 mm difference between two observations of March precipitation appeared to be linked with a reduction by 56 kg/ha of the wheat yield on the average of the whole period, while a 10 mm increase between two years of the national average of the March precipitation reduced the expected value of wheat yield by 103 kg/ha. For corn, a simple plus of 10 mm in June precipitation meant a yield increase of 64 kg/ha on the average of the period while the same plus in the average June precipitation was linked with an increase by 136 kg/ha of the expected value of corn yield, according to the function estimating the distributed parameter.

2. The transition probabilities of yields

We studied the probabilities of transition of the acreage under wheat and corn of the state farms from each of the 15 yield categories to any category for all pairs of years between 1962-1980 and for 5-year periods. Parallel to the increase of yields decreased the probability of greater increases and grew the probability of great yield reductions as well as of great oscillations. The table shows the probabilities of both increases and decreases by at least 3 categories for specified yield classes, based upon farm data of 1975-1980. These figures allude to the probability of financial difficulties too, in a process of a steep rise of costs. Similar tendencies may be regarded to prevail for the co-operative farms, too.

3. The changes in the composition by varieties

The effects upon yields of the modifications in the composition by varieties were studied by using indexes with changing weights. In the

wheat production of the state farms, this effect has always been positive, for corn, however, only during the first three years of the '70s. Thereafter came such a process of transformation of the composition by varieties and FAO maturation groups, which, in the period analysed, still rather reduced than increased the average yield for the state sector as a whole but the final economic effect of this process was positive for the farms.

The probability of yield changes by at least three categories, according to data of state farms for 1975-1980

Yield classes /kg/ha/	in %	
	Increases	Decreases
<u>Wheat</u>		
2801-3150	53,32	9,02
3151-3500	48,67	8,14
3501-3850	26,31	15,09
3851-4200	13,07	12,60
4201-4550	11,19	28,97
4551-4900	9,78	28,17
4901-5250	-	22,20
5251-5600	-	33,82
5601	-	46,86
<u>Corn</u>		
4001-4500	27,47	10,74
4501-5000	22,99	20,94
5001-5500	22,56	11,15
5501-6000	3,82	23,78
6001-6500	0,91	41,54
6501-7000	0,00	25,17
7001-7500	-	33,96
7501-8000	-	26,54
8001	-	61,46

4. The costs

The growth of yields is generally praised; the modest changes in the purchase prices face a steep rise of costs, and the rapidly increasing expensiveness of agricultural production is often discussed in a biased way. The leap-like increase of costs became characteristic particularly from the end of the '70s on. This phenomenon is reflected by the differences in the growth rates calculated for the periods 1971-1978 and 1971-1980.

The total wheat grain production of the state farms grew yearly by 1,46 per cent between 1971-1978 and by 1,62 per cent in the whole decade. The average growth rate of the value of output of wheat appeared to be 2,34 per cent between 1971-1978 and 2,72 per cent between 1971-1980. The average rate of growth of the total cost of wheat production came out as 2,21 per cent for 1971-1978 and as 2,84 per cent for 1971-1980. The case of corn is different: low figures for both volume of

grain and value of output in the base year cause the rates of growth for production to be irrealistically high: for volume of grain 5,10 per cent between 1971-78 and 5,53 per cent between 1971-1980, for the value of output 7,66 per cent for 1971-1978 and 8,86 per cent between 1971-1980. The total cost of corn production increased yearly by 3,63 per cent between 1971-1978 and by 6,65 per cent between 1971-1980. /The figures for growth of costs get more emphasis by the fact that costs exceeded the value of corn output in 3 years between 1971-1975./

The average /per metric ton/ costs and marginal costs had not only an ascending tendency but also oscillations with an increasing amplitude.

If we remember the behaviour of the transition probabilities of the yields, we must realize that in this process of growing expensiveness we have to reckon with an increasing probability of great losses too.

5. The substitution of resources

The standing reduction of agricultural land /particularly of the arable land/ requires more attention for the substitution of land. According to the functions for grain production covering the period 1971-1978, the decrease by one gold crown of the total value in gold crown of the acreage could have been counterbalanced by an increase of the direct costs of Ft 166 for wheat and Ft 258 for corn in each year. It alludes to a land equivalent of the changes in weather that a decrease by one unit of the 3-monthly sums of Thornwaite indices could have been counterbalanced by different increases of the land quality measure /expressed in gold crown value of the acreage/. In the case of corn production, examples follow for several years and quarterly indexes:

<u>Year</u>	<u>Sum of P/E for months</u>	<u>MRS in gold crown</u>
1971	VI-VII-VIII	810
1972	III-IV-V	410
1974	VI-VII-VIII	724
1977	IX-X-XI	572

Deriving value of land from MRS produced by functions based upon variables for current inputs only, in an average of 1971-1978, we got Ft 194 800 for one hectare under wheat and Ft 240 500 for one ha under corn, the geometric mean /21,05 gold crown per ha/ of land quality being considered. When we made our calculations from production functions containing variables for weather too, we received the value of one hectare of land of the same quality under corn as Ft 265 660.

6. American-Hungarian comparisons in corn production

From an analysis of the field experiments made by the Cornell University and by the Hungarian co-operative farm Aranykalász /Golden Ear/ of the community Ujkigyós we inferred that the more favourable relation in the American experiments of the number of stalks at harvest to the number of grains sown may be attributed to the higher quality of seed and of the corn planting machines. The farms observed by the Cornell University used less fertilizer than the Hungarian co-operative farm at Ujkigyós but the American farmers harvested 4,6 per cent more grain per kg of pure nutrient. Here, too, the differences in the quality of the fertilizers and of the fertilizer spreading machines do we think to be the reason for the difference in fertilizer effectiveness.

Taking into account the 1980 corn prices and the 1981 input prices we calculated the prices in corn equivalent for the Hungarian co-operative farm and the group of farms observed by the Cornell University. If we consider the prices expressed in corn equivalent paid by the Hungarian farm to be 100, then the American farmers paid 63 per cent for a tractor, 32 per cent for a corn planter, 64 per cent for a medium-size combine, 112 per cent for the pure nutrient of fertilizers and 43 per cent for the plant protection chemicals used per hectare.

We calculated similarly the corn equivalents of the total costs, main cost items and net income per hectare of corn production in the state and co-operative sector of Hungary as well as in the US average and in the Corn Belt for the year 1981, as shown by the following table:

	Corn yield t/ha	Total cost/ha in corn equivalent	Net income/ha /metric ton/
Hungarian state farms	6,78	5,63	1,15
Hungarian co-operatives	6,27	5,20	1,07
US average	6,87	4,62	2,25
Corn Belt	7,27	4,40	2,87

7. Changes in terms of trade within the Hungarian economy

The product equivalents are special indices of terms of trade. Here we give as equivalents the corn quantities which the Hungarian large-scale farms may have considered to be the price of a 2 x 8 row IH Cyclo corn planter /produced in Hungary/ according to the price conditions of the various years. The farms had to sell 191 metric tons of corn in 1978, 203 tons in 1979, 258 tons in 1980 and 294 metric tons in 1983 in order to be able to buy that machine, the performance quality of which was inferior to other types of corn planters, according to field measurements.

The terms of trade expressed in labour /man-years/ give a more

general picture about the conditions of exchange between sectors of the national economy. We have calculated such indices several times during the 'sixties and 'seventies, and so we did on the basis of the yearly input-output tables of the Central Statistical Office for the decade 1970-1979, too. From the social labour represented by the inputs of domestic origin, agriculture /industrial and other activities of farms not included/ bought one man-year of different sectors other than agriculture for quantities of man-years as shown by the following figures relative to the first and last year of the period analyzed:

	<u>1970</u>	<u>1979</u>
machine industry	2,67	2,60
chemical industry	5,38	7,20
food industry /mainly feed mixes/	6,16	4,62

The changes in the price system that occurred after 1979 have not improved the terms of trade between agriculture and other sectors of the national economy.

KARDOS, János: A gépkölcsönzés és használtgép-kereskedelem alakulása és helyzete a mezőgazdaságban. /Formation and situation of machine borrowing and second hand machine trade in agriculture./ Lecture on the XX. National Mechanization Conference, Szolnok, 1983. 4-5. V.

In one part of agricultural large-scale farms, that are working in unfavourable circumstances, such low development funds are formed, which do not make the realization of necessary machine investments possible. This fact has especially become significant in our day, when the price of machine have risen. The rise in price has been further strengthened by the lifting of state subsidy for machines. The technical conditions of production are consequently further deteriorating in farms disposing of otherwise also tight material possibilities. In some cases even the possibility of the performance of fundamental agricultural work is becoming dubious. The moderation of these unfavourable tendencies may be imagined in several ways. The necessary measures are partly already in progress, for instance the possibility of utilizing the reserve funds for machine purchase, and are partly being elaborated.

It is not our aim to assess and valuate these complicated economic and regulating systems. As long, however, as a somewhat reassuring and comprehensive solution is born in the topic, the continuity of production in the farms in question has to be ensured as well as the exist-

ence and possibility of purchase of the necessary machines and instruments.

The borrowing of machines may be considered as one possible mode of the assurance of machines necessary for the production. The borrowing of machines had no right tradition within agriculture. We could previously speak of borrowing of machines only in connection with spontaneous help of generally neighbour farms to perform some operations. This not negligible help has not, however, - owing precisely to its spontaneity - the security background, that is necessary to the best performance of the production process. It goes hand in hand with high-grade dependence. It is enough to refer to the fact that the timely optimum performance snatches away the possibility of efficiency from the farm asking for "favour". Here, the notion "favour" does not mean exemption of payment, but tries to render palpable that no pressure is prompting the lending farm to lend machines. Naturally, neither in the future can it come to the application of force of whatever character in this version of borrowing. This kind of borrowing of machines is in volume not of decisive character, and will expectedly not become such in the future. According to my opinion such borrowings will in future formally change in the direction undertaking hired work.

In our days the Industry-like Corn Producing Common Enterprise of Bábolna /IKR/, and the Machine-utilization Company of the Corn and Industrial Plant-Growing Association of Nádudvar /KITE/ are organizedly engaged in hiring and lending of machines in considerable volume.

There are many similar features in the lending forms established by the two systems, for instance:

- the system accomplishes the purchase of machines at the request of the farm
- lends the machines for a lasting utilization against an annual hiring fee,
- after the end of the lasting utilization time the machine becomes the property of the borrowing farm,
- amortisation on the machine is formed with the system,
- the borrowing farms are generally paying 1,5-2fold of the yearly amortisation as a lending fee.

The Machine-utilization Company of KITE assures only for the members of the Machine-utilization Company possibility of borrowing of machines. Condition of the Machine-utilization Company membership is at joining a one-time admission fee of Ft 300 000, transferred from the development fund. Over and above this, in the case of concrete machine need, 10 per cent of the price of the machine requested has to be paid and following this the lending fee has to be paid as production cost

during 6 years.

The Machine-utilization Company finances the machine purchases out of the contributions of member farms disposing of larger development funds, respectively, from the development fund formed with them on the machines.

The movement possibility of the system is, however, influenced to a great extent, by the fact that owing to the mentioned economic causes also the free development fund of the otherwise capital-strong member farms has in a great measure declined. This means naturally the reduction of the number of machines used in the frame of lending contract. The other problem in this construction is that the production cost of these borrowed machines running farms is naturally higher - the fee of borrowed machines calculated to the debit of the account - than the general costs. This means at the same time that their competitiveness is deteriorating, conserving after all, and in some cases even further spoiling their situation.

In the case of IKR, the lasting lending of machines happens in a similar structure. There are some smaller-larger divergences in the various basic conditions, but the character of the borrowing as a part-payment advantage - not booked to the debit of development funds - plays equally decisive role.

As a basis for the tariff, worked out item by item by the system for the control of lending period regarding the power and work machines, serves, as mentioned, the shift hour. The lending fee item is invoiced on the basis of worked shift hours. As delicate points of the solution may be mentioned the not reliable shift hour counting and the exemption of payment for the time spent outside the farm. The shift time is generally counted on the basis of the factory shift hour counter of the machine - where there is any - in the case of working machines the basis of the settlement is the confession of the borrower. The time outside the farm is not paid for and therefore, the borrower is not always interested in a quicker, more organized work.

The IKR have, however, created beyond this system a theoretical possibility to occasional work cycles in interest of the utilization of excess machine capacities, to borrow machines serving the performance of one-time tasks. To this machine lending system they have formed their hired work tariff, containing the Ft/shift hour cost of power and work machines borrowed. This service is performed direct by IKR member farms, but also outsider farms may make use of it. On the ground of the concept, there is a possibility of borrowing machines, machine groups either with or without driver. At the present situation this possibility is not a living one. The member farms provide such machines - lent

with hire work character - only with driver, formally and to the content as a similar service as has been mentioned in connection with the spontaneous machine lending.

Within the system the aim first of all is the maintenance of the lasting lending form. Also the purchase of machines and instruments is made correspondingly on the ground of preliminary orders. They are not intending either in the future to spread the possibility of the borrowing of machines case by case, serving certain work-operations, the performance of work cycle tasks.

Correspondingly, there are no separate, central capacities for hire at disposal, respectively, only from time to time, when there is no way of lasting hiring, for instance, the orderer revokes in the meantime his order or is unable to pay out of any causes, replaces a machine stock of one or two years old.

Also in the interest of saving of development fund BOSCOOP has initiated the creation of machine associations. Here, the necessary machine of a capacity exceeding the needs of one single farm is purchased and run jointly by more farms.

The collective running in the case of machine associations of such character may be performed in a way that the machine moves with a single driver alone or along with machine groups performing the complementary operations, for instance, transport between the running and partner farms. This form of machine running raises high requirements against organization, technical service and agronomy. The common investment and running costs are covered by the partner farms in proportion to the measure of utilization. The advantage of this solution is given by the capacity utilization approaching maximum and by the use of partial development funds.

In the future the satisfaction of the hire machine need of farms, not disposing adequately of development funds, has to be fulfilled taking into consideration the effectual existing claims, when expanding the borrowing of machines. To solve this task, there seems to be a realistic possibility beside the mentioned systems in the development of commercial lending. To realize the commercial lending, the initiative of the enterprises AGROTEK and AGROKER will be fairly necessary.

The commercial lending must be based - contrary to the practice realized by the two systems - mostly on machines of own property and handling. First of all, the machines suitable for the performance of fundamental operations and such of strongly specific tasks should be lent. The lending fee should correspond to time and performance to incite the avoidance of superfluous capacity take up. The performance-proportioned fee items may be based on the already mentioned shift hour. The condition of this is the installation of the machines with reliable

shift hour measuring instruments, counting on the ground of exact, uniform principles.

A further possibility is given for the machine purchase by the organization of a second-hand machine trade. We have to overcome the present practice of trade based on newspaper advertisement and other individual initiatives.

The putting again into production of second-hand machines, still fit for use, respectively, repairable with relatively low cost, represents a fairly large reserve. The prospering farms, that are able to change their machine stock in an adequate measure respectively dispose of considerable quantity of still usable machines on account of their adaptation to market requirements, can sell these to farms needing them. This kind of sale is today not especially flourishing and this has according to my opinion also comfort causes beside the regulators not ensuring the direct personal interestedness.

The regulators fundamentally ensuring the company interestedness, the comfort factor is worth transforming. This would be served by the organization, that would take over these machines for sale or would mediate between the interested people. The task of this organization should be the estimation of the real technical state of the machine and its price and probably also the performance of lesser repairs. With this service the responsibility of the seller and the arising of later discussions could to a great extent be diminished. Also in point of view of the buyer is the estimation made by an objective judge more comforting, and this would make the sale of superfluous machines more stimulating.

The basis of this network could be assured by agricultural farms, that are already in our days engaged as sideline activity in taking to pieces and selling second-hand machines. The expansion of their operation field to agricultural machines would not mean either particular material or professional difficulty.

The trade of second-hand machines should be unified and the enterprise, organization entrusted with trade should care also for preliminary technical control and usability of the machines coming this way into circulation again. The material and organizational conditions of this are, today however, not yet given. Its assurance in the future is, however, an important and urgent task.

On the ground of experiences and of what has been told above, it may be proposed beside the present machine-lending forms, the wider spreading of so-called machine associations, where the purchase and running of target machines of high value and performance are jointly done by the farms participating in the association. To ensure the opti-

imum utilization of machines, these farms agree with each other as regards their agronomical tasks, making thereby the timely drawn out utilization of the machines possible, for instance sowing time, species, sowing area, etc.

It is to be mentioned here that where a farming is run, able to meet the mentioned conditions, there the farms are in general not the poorest organizations.

It is practical to make use of the superfluous machine capacities existing with some farms either through hired work or lending in the sphere of authority of the given farm.

The basis of the settlement of work done may be the measured shift hour. The conditions of a reliable shift hour measuring are to be ensured.

The appropriate solution to deliver and put newly into production of machines in farms, not used but fit for use and not yet fully written off, must be found.

For this purpose the organization of the trade of second-hand machines seems to be practical. Through this organization second-hand machines could be sold after suitable technical checking, perhaps repairing, fit for use, at a value-proportionate price. As a quick change is difficult to imagine in farms not disposing or only in a limited measure of development funds, there is anyway necessity of a solution assuring the machine, that requires the minimum development fund. As such a possibility seems to be the leading and trade of second-hand machines.

KARDOS, János: Az energiaigény csökkentését szolgáló műszaki megoldások és ökonómiai értékelésük. /Technical solutions for decreasing energy requirements and their economic valuation./
Budapest, AKI, 1983.

The possibilities of instrumental measuring in the running of agricultural machines

In the decisive majority of agricultural farms there exists today the requirement for the application of instrumental measuring of various scale. The farms are expecting much first of all from the installation, application of instruments fostering energy economy. The problem is not to be sought in lack of application readiness. It is a greater problem that the farms cannot make use on an adequate level of the data gained in the course of the running subsequent to installation of the instruments. There is, therefore, a need for the construction

and putting at disposal of suitable program packages, serviceable with personal computers.

An other considerable difficulty is the sensibility given by the technical solutions of instruments. One part of the applicable instruments had not been made above all to agricultural utilization. They cannot, therefore, stand in all cases an increased use without breaking down. The adequate service and repair of the instruments cannot yet be considered to be solved today. In many cases this is the impediment of the development of an administrative system on the basis of measured data. It is evident that in a settlement system, based on exact, systematic data service, the deficiency of same may cause serious difficulties.

Conditions of spreading in farms

Within the agricultural works the sphere of instrumentation, namely, which characteristics, on which machines should be measured, is fundamentally determined by two factors:

- the aim to be reached by the instrumentation /for instance fuel saving, increases of capacity exploitation, etc./,
- mode of the use of measuring results.

The designation of the machines taking part in the observation may be advisably made on the basis of the expectable success of instrumentation. As here also the price of instruments is a considerably influencing factor, the view has universally spread that with more expensive, complicated instruments /for instance the fuel consumption meter/ first of all machines of great values are worth being equipped. If we take into account, however, that in the case of tractors more than 70 per cent of total gas-oil is used by tractors under 75 KW /their share is on the ground of worked shift-time above 80 per cent/ it is evident that this category cannot be excluded from observation, at most it is to be considered, whether a full of representative examination is necessary.

The circle of machines drawn into instrumentation is decisively influenced by the way the measured data are built into the information system of the enterprise, that is to say how they are made use of.

The introduction of whatever depth and goal of the instrumentation of utilizing farms being decided, at the same time their recording, administrative order must also be prepared to accept and value the data found as a result of instrumental measuring and to any possible intervention. This system is to be developed in a way that the processing of data flowing in should be made promptly, that in the given phase of work modifications may be executed still effectively. Here we have to count on the wide utilization of personal computers.

On the basis of this the parameters, the measuring result of

which represents the basic certificate of an activity, require a wide-spread and plant-like observation. Such may be for example the running performance as wage accounting, or fuel consumption, as fundamental certificate of material management.

A systematic but temporary observation is necessary if the instrumental measuring is used first of all to develop and control of norms /maintenance/. With the help of adequate, well measurable comparison basis /shift-time or machine work or operational performance/ norms of performance, capacity and fuel consumption of satisfactory accuracy may be developed, on which an efficient normative accounting system may be built. At the present mechanization, planning level, this utilization mode may come into prominence. Besides, tasks claiming individual observation may arise, for instance work organization.

Material conditions of instrumentation

The instruments to be applied may be grouped as

- signalling,
- registering,
- intervening instruments.

The signalling instruments are showing in general the informations connected with the working mode, technical state of the machines, their majority installed in the factory and fundamentally necessary for the running /oil pressure, degree of water temperature, charge, etc./. On the ground of signals, there is mostly a need for intervention, and the estimation, decision is wholly up to the operator. These subjective decisions have impact on the result of machine working and represent thus a considerable reserve, the more as they cannot be shut out of the process, but may be turned in suitable direction. For instance, the fuel consumption is to a great extent depending on the management style, and if the operator disposes of the necessary feed-back /momentary value of fuel consumption or motor loading, etc./ he may make modifications in the handling technics accordingly, as the situation requires it. Naturally, the success of this depends not only on the instrument, but also on the selection of suitable persons.

The registering instruments either register continuously the momentary values of all selected parameters or record the aggregate data of the examined period.

To this group belong shift hour meters, running time writers, fuel consumption and kWh measuring instruments.

These instruments are suitable for producing the basic data of records connected with machine working and marking divergences. The intervening instruments not only mark in the case of divergences from normal operation circumstances, but intervene in the interest of removing the

faults in the running of the machine /for instance grain loss meter, that is able to change the speed of the combine, etc./.

The selection of the types of instruments to be applied requires great circumspection. The most important requirement is that it should not disturb the normal machine running and that it could not be disconnected, that is to say the measuring be falsified. The building up of an instrumental measuring system is to be realized in more phases. There are instruments, that are necessary for every machine. These are the shift hour counters. Today our power machines practically dispose of such instruments built in by the factory. The trouble is that the work safety of such instruments built in by the factory and of mechanical solution is indeed very low, their repair unsolved. Consequently, the users are building their administrative system not on the measured shift hour. As a first step it must be considered that every power machine, working in the workshop should obtain a reliable, work-safe shift hour counter. It is important that in the workshop instruments of identical running principle and operational region should be utilized. This way a uniform accounting system may be created. Also the scheduling of repairs and maintenance can be done with an adequate accuracy, taking the real wear and tear into account.

Out of shift hour counters which are suitable, a fairly wide choice is at disposal at acceptable prices. There are, therefore, no practically particular obstacles of their spreading.

To the second grade we may rank the instruments, that are not unconditionally necessary at all times and to all machines. To this group belong above all the instruments, instrument combinations, which are intended to deal with the forming of norms and with their control procedure. The fuel consumption meters, registration instruments and running time meters belong to this group. On account of their tasks and possibilities they may be exploited also in various norm-forming procedures, tasks.

With running writers first of all lorries should be provided, that are often away from the farm. On these vehicles there is a place for lasting equipment, but also the fuel consumption measuring instrument may be used on these lorries with controlling character. It may become a generally applicable practice that the instrument may be installed to the vehicles according to a previously determined time-table.

It may be necessary to provide the smaller and medium tractors with shift writer. Of the power machines, belonging to the smaller draft power category, the considerably large idle running is characteristic. This may have several causes. The greater place of work discipline, necessary to reduce idle running, may be realized if backed up by working

time writers. We find in the running of tractors of great hauling power in general a greater grade of organization; these machines and their operators are kept better in view. Precisely, therefore, here the application of running time writers is - according to my opinion - of lesser significance, as the data, informations given by them may be traced by other methods, too.

In connection with the running of large tractors, the reserves lie in the better exploitation of draft power capacity. These possibilities must be mapped and for this purpose the load-proportional shift hour meter renders big help. On the ground of the data given by the instruments, there is a possibility to make conclusion of the loadedness, utilization grade of draft power capacity of the power machines. The instrument of this character is being installed today on all high performance machines. The efficient application of the instrument is, however, only then fully realized, if on the basis of the values obtained also the necessary alterations, work organization tasks are performed.

Finally we may make it clear that in connection with the instrumentation of agricultural machines as a first rate aspect must be taken into account that the instrumentation cannot be an end in itself at any rate. The supply with instruments must be subjected to production interests. Only solutions should be accepted, where there is a possibility to react to the production process making direct use of measured parameters.

KÓBOR, Kálmán: Adalékok a feldolgozottsági fok értelmezéséhez és szerepéhez az élelmiszer-termelésben. /Data to the interpretation and the role of processing grade in food production./
Budapest, AKI, 1983. No. 13. 91 p.

The development of the food production in the seventies was characterized by a transition from extensive to intensive way. This process has necessarily emphasized the economical question of the processing grade of food.

After the starting favourable experiences the contradiction of the processing grade has come to the surface: the increase of the processing grade has been connected generally with a diminishing efficiency. In this first of all the rise of the inputs of food industrial production has played a role, but also the tendency, appearing also in the world market, that the price of raw materials and less processed goods has increased more than that of the highest processed commodities.

Although the economic policy has set the economical increase of the processing grade of agricultural raw materials as a target, in the

recent years - in connection with our paying difficulties - the aim of the income of higher foreign exchange volume has become a decisive factor and this has overshadowed the consideration of efficiency. Thus, short range targets have come into prominence.

Out of the causes of the movement of reversed proportion of the processing grade and efficiency, the change of raw material and energy prices had played a great role, which cannot be realized generally in the price of finished goods. This presents itself as regards agriculture and food industry in a way that the increase of food industrial selling prices lags behind the growth of raw material prices. It is further characteristic that in the course of the processing procedure the surplus life- and objectified work inputs loaded on the raw material of agricultural and other industrial origin are not accepted in the price, neither by the inland nor the foreign markets. Over and above this, the performance of food industry and its better acceptance is held back by the servicing background industry, which is lacking from time to time and is of a very low level. Without modern industrial instruments /machines, packing and other materials/, however, no competitive product can be turned out even from the best raw material.

In the periods to come we cannot give up the increase of food export, therefore, basic attention is to be paid to the right choice of processing grade of the always marketable product structure. This is really motivated in the short run by momentary market conditions, but in the long run care must be taken by continuous creation and modernization of capacities in the interest of the stabilization of elastic adaptation capability, that makes different level processing possible. This is naturally connected with the fact that in this industrial sphere such a reserve capacity is created, the degree of utilization of which is accompanied by the satisfaction of market need at any time.

The topic of the problem of processing grade is worth approaching first of all in market-consumer view, because the efficiency of food products is after all becoming evident on the market. The inland and foreign markets decide with what grade of processing we may appear in the market on occasion. At the same time we must be aware that in food production the increase of processing grade, the improvement of the level of product packing make the increase of our most important means of production, the gross output per unit quantity of arable land, possible. We may not give up, therefore, to follow with attention the change of the processing grade, and it is necessary to form conceptions also in the long run.

The comprehensive valuation of the performance of our food production in respect of processing grade is fairly complicated. Price

system and valuation built on it give only then some orientation on the economic situation of processing grade, if we are expelling result-comprising indices from the circle of analyses. The distortions of result indices of gross and net character and of prices are generally concealing the difference of processing grade, as the prices reflect not the real inputs and not the proportional profit. At macro-level it is very difficult to give account of the otherwise unquestionable increase of processing grade. In the past two decades the increase of processing grade may unambiguously be stated, as

- the distribution structure of food industry has been moving in the direction of higher processed goods;
- in the cost structure of products the cost quota of agricultural basic materials has been reduced;
- the processing costs have risen, within it first of all the inputs of packing and other different industrial materials.

At the same time, it may not be left out of attention that in the branches requiring agricultural material utilization, not even in the cost structure of the products processed in the highest grade, are the processing costs decisive; in the case of winter salami for instance 1/4 of the total cost and of canned ham hardly more than 30 per cent are made of this cost.

Looking at the domestic structure of the demand for food, it is characteristic - even beside a stopping short of the last period - the rise in the demand of highest grade processed food. This phenomenon is mainly characteristic of the so-called changing quota of demand: of the market of articles of not fundamental character and of high luxury value. The claims for food satisfying basic needs are more stable, the change and increase of choice are of lesser grade.

Speaking about foreign market demand, the markets of different relations are to be set aside; the valuation of those cannot be called identical at all, as regards processing grade.

The world market food demand of socialist countries is above all characterized by products of large volume, satisfying fundamental needs, and therefore, of low processing grade. The traditional or high processed Hungarian export goods /winter salami, canned ham, etc./ serve only to meet special requirements. These markets do not mean a pull for the Hungarian food industry.

In the food demand of developed capitalist countries often show themselves similar phenomena though on account of other causes. Not that an unsatisfied demand could be observed for less processed food-stuffs in the markets, but because the trends for better exploitation of the processing capacities and the the acquirement of profits raised

in the course of processing are inciting this. The processing - without any input of the previous phases - is, namely, essentially profitable.

Looking at the markets of the developing countries, the possibilities of export are theoretically not limited: the unprovided, often starving countries are in need of large volume food, first of all of basic articles, thus they are not looking for processed food. In this relation the material security of importers raises problems. Such characteristics of the foreign market requirements add to the dilemma of "maximum foreign exchange volume or economical export". In the foreground of our present economic decisions stands the target of restoring the economic balance of the country and to this - in the long run - the otherwise justified requirement of the augmentation of export efficiency cannot be entirely realized. We cannot always meet both ends in the midst of our present resource situation and economic circumstances.

The choice of the processing grade is not a question of decision but of adaptation to the market-economic circumstances. By increasing the processing grade the gross output volume may be enlarged also in an efficient way. But its augmentation at any price is not rational, because after all the valuation of the market is decisive. The growth of the processing grade in its tendency is resulting in the possibility to create larger and larger finished goods value by the utilization of raw material unit of the agricultural origin, that is to say, the raw material is better realized and the areal productivity - on the basis of gross yields - higher. The inputs of the processing phase are not significant compared to those of the former transformation step, thus, the augmentation of production is not unconditionally disadvantageous in food industry.

Taking into account the divergent input structure of agriculture and food industry, we may see that the produced agricultural raw material is worth passing through industrial processing. This is especially in our days important, when the quantitative increase of production is not required by the market. Under such economic circumstances the possibility of augmentation, of increase is the transformation of the raw material to a product of higher value, in which procedure beside the processing grade, an appropriate rank must be assured to packing, to presentation, in brief, to product distribution culture, too.

Also the economic consideration renders a basis to this, that in this development period the technical, technological development of food industry comes with a stronger emphasis into prominence than that of raw material production. The relative quick growth of agricultural commodity production was, however, not always followed in the past periods by an adequate expansion of food industrial processing, thus, the appropriate level of the processing of agricultural raw materials

knocked from time to time into obstacles.

The conceptions of the long range development of foodstuff production are forecasting recently an annual 2 per cent agricultural production growth and a 2,5-3,0 per cent food industrial production increase. This means also that production structure of our food economy will not essentially change; the present structure of the agrarian-industrial block will remain also in the long run characteristic.

From the global approach of development conceptions, however, it is not right to draw far-reaching conclusions. On the other hand, the product structure of food industry has to be transformed. In respect of food industry this may mean the starting point of a qualitatively new road, the basic requirement of which is the elastic adaptation to market claims.

KOVÁCS, Kálmán - ROTT, Nándor: A melléktevékenység jelentősége és szerepe a mezőgazdasági nagyüzemekben. /Significance and role of auxiliary activities in agricultural large-scale farms./
Miskolc, National Conference of the Agro-economic Society of MAE, 18-19. November, 1982.

The activity of farms beyond basic activity is extraordinarily rich, colourful, varied and changing. The food industrial activity is today already fully accepted and consumers would miss if the meat, sausage, cooked meat, milk, cottage cheese, ice, ice powder, bottled wine, tomato juice and other food industrial product turned out by agricultural large-scale farms would have disappeared from the market.

Today it is also accepted and natural that agricultural large-scale farms are engaged in trade of food and catering, that they perform hire transportation, help with various agricultural services the household farmers and everybody, who is engaged in agricultural small-scale production, they provide for their material supply and for the purchase of their products and help their activities with professional advice, instruments and otherwise.

The large-scale farms are, however, active in a much wider circle. Thus, for instance

- they burn and slake lime, bake bricks, build stables and family houses,
- manufacture rabbit cages, discs, roller vehicles, ceramic table sets and diver pumps,
- turn out rubber pads, dust-proof gaskets, fur caps, children coats, women sandals, wall paper and paints, crates and loading plates,

transformators and condensers, refrigerator accessories, and agricultural machine parts, silver button accumulators and trailer side heighteners,

- undertake tyre reconstruction, galvanisation, chrome-plating, hire storage and commodity handling, preparation of paper and textile labels, highpolish lacquering, record lacquering, distillation of volatile oil, production of drugs,

- repair wheel-barrows, trailers, engines and electric motors and cars and take cars to pieces,

- pursue laboratory research, soil and fodder research, diagnostic measurement, give professional advice and train professional workers,

- are engaged in shock protection and safety technical equipment manufacture, environment protection planning, disinfection of granaries, container fabrication, galvanisation on metals, furniture accessories production, and we could go on with the almost endless looking enumeration.

The activities beyond basic activity are well compatible with the latter, what is more they are of help to it. Lime burning goes well hand in hand with small seed production, construction of family houses does not interfere with that of farm building. Turning out wall paper makes possible the high level seed production, the processing of textile does not push out propagation material production, artificial material manufacture horticulture. Beside cutting, galvanisation, petrol pump certification it is possible to maintain industrial training workshop and to instruct good agricultural experts. Beside riveting and place cutting an excellent breeding pig may be kept, tyre reconstruction and hire transportation are competible with comparative species experiments of wheat and corn, printing with agricultural organization expert advice, production of aquarium and terrarium with high standard fish breeding.

The joining of these activities - taken from real life - is demonstrating that the framework of enterprisal activities of agricultural farms is very flexible, a lot of activities have a harmonious place in it.

Fault and distortion may naturally arise everywhere. Our experience - certifiable also mathematically - are showing, however, that the activity beyond basic activity does not increase endlessly, though the characteristics of its augmentation are connected with its genesis and are forming mostly depending on which motive has created the activity and for the satisfaction of what need.

The varied richness of the activity reflects the respectable endeavour, with which the agricultural farms try to get rid of their pressing income situation, adapting themselves to their particularities and possibilities and with which they look for possibilities and enterprisal deve-

lopment. The motive is in general the increase of enterprisal income, that can be achieved on the basis of various endowments. This can be the labour force or a special qualification, the existence of some object /for instance a bulldozer/, but also some special managerial knowledge or organizational experiences, natural resource, possibility of the establishment of a mine or stone-pit or as well the agricultural or forestry product turned out in a large quantity.

The particularities may be made use of in connection with the possibilities. A decisive role is played in it by the economic activity, industrial-economic development grade of the narrow-wide region. In lively economic circumstances it is easier to join in the activities of industry and servicing branches, while for the agricultural farms placed in economic "vacuum", the organization of industrial contacts is extraordinarily circumstantial and expensive. The activity beyond basic activity is created in an individual-personal way, not uniformly and is an activity typically and purely producing for the market. Thus, it is understandable that the industrial-economic environment to be achieved by the farms is playing a very important role in the establishment and development of the activities belonging to this circle.

The enterprisal role, size, dynamics and may be also the future of the activity beyond basic activity make the outlining of more groups of enterprises possible.

There are farms that are looking for the vertical improvement of their high level agricultural production this way. These are mainly engaged - but not exclusively - in the processing connected with the basic activity and develop this activity of theirs to a very considerable measure.

An other group of farms would like to develop through auxiliary activities; its expressed aim is the augmentation of income and by it the prosperity of agricultural production. There are farms, that are almost desperately looking for possibility of survival in their strangling situation and have reached the decision to support themselves otherwise, if it is not possible to do it with the basic activity. And there are farms, that cannot grasp even that possibility amidst their cruel natural and economic conditions.

Finally, a further group of farms is working at a high level, with significant profit and does not feel the necessity to diversify its activity. Yet, it is a question of principle that the diversification of economic activity augments the security of the enterprise, it is becoming more and more the fundamental condition of the growth of the enterprise.

The activity beyond basic activity does not become anywhere an

end in itself and does not detach itself from the basic activity. At the start it withdraws generally assets from the basic activity, but later replaces them and contributes with the replacement of generated sources to the improvement of the quantitative and qualitative characteristics of the basic activity. The contact of the two activity groups depends at a given time mostly on what phase of development the enterprise is in.

Today the auxiliary activity is not a sectoral question anymore, nevertheless, we may not disregard the characteristic difference existing between agricultural co-operatives and state farms in this respect. The difference may be experienced in the direction structure of activity and be described that in the state farms it is more closely connected with the basic activity. As regards their size and proportion, food and wood industrial productions are playing a typically great role in the auxiliary and complementary activities of state farms, what is more, the processing industrial activity more connected to the agriculture /agricultural machine manufacture and repair, production of instruments and equipments used also in agriculture and so on/. The producers co-operatives are also engaged in such type activity, but besides, the industrial activity wholly independent of agriculture is much larger and more varied. The cause of this is probably that in the work of state farms direction and consciousness is valid in this respect, too, whilst the co-operatives, more left alone, look independently and individually for the possibilities of their development.

We have to take note of the still defensive tone, how agricultural enterprises often declare their opinion about this activity. It seems that socially the judgement of the activity beyond basic activity of agriculture is not yet comfortably accepted.

Yet, there is no cause to be ashamed and defensive. We may state that this is the most dynamic sphere of the Hungarian economic life and corresponds mostly to the modern economic-political guidance aspirations. The auxiliary and complementary activity of large-scale farms is the real, strictly considered market sphere of economic life. It should be undertaken here and risk be assumed. This production is turning out direct and strictly for the market, and justifying its grounds in the market. Here, the work is daily measured and estimated, one cannot perform a faked work and lean on central social resources. Here is a competition, work; enterprise and man are taken asunder, here does survive only one adapting himself to conditions, and who is not able to do this, will necessarily fail. Here, hard work is often done in primitive circumstances, but everyone enduring the competition, will succeed personally.

We think, the limitation of this activity would be a great loss, not only as regards the economic size and significance of the market segment, but because we would lose the generalizing experiences of the economic guidance, which may be obtained in this field - and for the moment it seems - exclusively in it. Therefore, this sphere of economy is not to be limited, but a lesson drawn from its experiences and applied same to promote other regions of the economy, too.

KOVÁCS, Kálmán - ROTT, Nándor: A gazdasági növekedés vállalati útjai a mezőgazdaságban. /Enterprisal roads of economic growth in agriculture./

Scientific Days in Gödöllő, 31. August - 2. Sept. 1982.

Outlines of the research

The economic growth may be interpreted to relate to the whole, to branches and to individual enterprises alike. Within our fundamentally macro-level /resp. mezo- as national economic branch/ research, we are examining here the main factors and coherences of the growth of agriculture, embedded into the whole of the development of national economy, that may be regarded to be dominantly of macro-level. The medium, "mezo-level", concentrates on agriculture itself as a branch of national economy and looks at the relations of national economy and of enterprises rather as a background. The third level contemplates the national economy branch as an aggregate of its enterprises and looks for answer to the question, how the growth types of enterprises had been added up to the development of the whole agriculture. In this writing we try to give a picture of our research at this level.

The examination of economic growth in agriculture is mostly applying a static method, in that data of the starting and ending time of the period under review are compared /though in the meantime also dynamic moments may be found/. The dynamic method is not confined to the comparison of starting and ending time of the examined period, but tries to determine the road of development and the coherences between the shaping of development road and the dynamics of influencing factors. The dynamic examination of enterprises and their groups is also impeded by the lack of indispensable data to the approach of organization identity, but this is already leading to the problem of organization relevance methodology.

Organization-identical and organization-indifferent approach

In the organization-identical approach we are surveying the growth of such enterprise groups which consist of the same enterprises. The organization-indifferent approach is not considering that the examined

group of enterprises /for instance, the category of the lowest gross income per head enterprises/ consists not of the same enterprises, during the period under review. Some growth examinations may be performed in organization-indifferent way, other very important questions may, however, be analysed evidently in the organization-identical approach, thus among others what production factor combination changes belong to the enterprise groups, going to identical development course or showing similar growth rhythm. The reviews of this latter approach are first of all impeded by organization-identical enterprisal data not being at disposal.

As the first partial success of our above described research, we were able to create the organization-identical stock of agricultural co-operatives in a way, that going back from the stock of 1981 we have determined up to 1970 of which association of what farms in what year /etc./ had come to existence the today operating co-operatives /so to say we have succeeded in determining the family tree of the co-operatives/. Aggregating the data of production value and production factors of several legal ancestors, we are able to bring the previous years to an identical level with the present organization. We are awaiting from the approach on this basis that it makes organization-identical examinations in the former sense possible, and within this it possibilitates especially the measurement of centralization and concentration and their impact, respectively, their numerical expression within the process of growth. We consider this as an important object and direction of our research.

Principles of aggregation and their dimensions

As similar /in sphere and volume/ organization-identical researches have not been undertaken by others according to our best knowledge for the time being, we are only supposing that there will be such typical enterprisal development courses, that have been followed by more enterprises and thus, groups of enterprises /for instance, enterprises of equally or fluctuating quick growth, or stagnating/ following the characteristic expansion road may be formed. These groups may be formed by /mathematically/ formalizable description itself of the picture /illustrated by a curve/ of the development curve. There are, however, such distinctive features, on the basis of which the group-building is more problematic. Such are, for instance, the categories of the average annual growth during the examined period or that of the income size of a given year. The previous surveys based on similar group-building have mostly arbitrarily determined the intervals of groups. In the preparation period of our research we have come to the conclusion on the ground of the critical analysis of these surveys and of our own calculations

that the group-building may not be arbitrary and therefore, we have considered the rational group-building principle as important methodological basis of further research. We are dissolving the enterprises ranked according to the size of the feature serving as a basis of this rational classification into decade groups that the average of 1-1 per cent of the population should constitute the limit value of the two outside categories and dividing this interval into ten equal parts.

The organization-identical approach makes a more dimension group-building possible. Thus, for instance, we are grouping the enterprises in a matrix, that takes into consideration on the one hand the average annual growth rhythm groups during the period under review, on the other the income size positions achieved in the closing year of the examined period.

The forming of groups may be extended, for instance, the third dimension should be constituted by typical growth roads, but also further dimensions may be imagined.

We are awaiting from the more-version extension of the dimensions of group-building that they will reveal such enterprisal growth coherences, that had been hidden up to now /that is, we deem it of heuristic importance/.

The research according to the above-mentioned is looking for a reply to whether it is possible to determine a significant coherence

a/ among rhythm and income size categories of various growths

b/ what typical roads of growth, respectively, income position changes correspond to various category combinations, and

c/ what production factor-providedness, respectively change belong thereto.

Factors of growth

Our basic conception is that the economic development of agricultural enterprises is determined by more factors. The main factors determining the roads of enterprisal growth are beside the traditional production factors, land, work, means /capital/ the production structure, new technics /technical development/ and its spread, centralization and concentration, regulating system, organization and level of management /quality/. In tight connection with this the development of the human contacts within the enterprise is definitely divergent, but according to our basic hypothesis there are such typical growth roads, that are characteristic of whole enterprise groups. The fundamental target of research is the verification of that hypothesis, a further aim of ours is on the one hand to define theoretically and logically the impact mechanism and coherence system of the main factors determining the typical growth road, on the other their qualification, the numerical

verification of the theoretically defined coherences.

The coherence system of the many factors influencing the enterprisal growth, what is more, the relevance of their quantitative possibilities may be solved - according to our judgement - only by a gradual approach. Therefore, as a first step we undertake to determine the impact of traditional production factors and that of the "so-called relative efficiency" factor. The relative efficiency factor compares the result of other enterprises with the most successful one among those disposing of identical /or near identical/ production factor combinations, as a quasi achievable norm and expresses thus the performance measured to possibilities in a percentual form. The relative efficiency expresses the impact of other than traditional production factors which we may consider in first approach as the joint influence of organization-management level, quality of human contact and acceptance of new technics. In this period of research, we would like to survey the impact of concentration and centralization on enterprisal development. As we had been able to solve the fundamental method problems of the formation of organization-identical enterprise stock and database, we see a possibility to form an objective measuring figure to quantify the measure of concentration and centralization, and to try to express by numbers its impact on enterprisal growth.

In the second "step" of research we are endeavouring to divide and determine the components expressed in relative efficiency. Here, we attach outstanding significance to the role of technical development in the growth of the enterprise. Our problem is a double one; on the one hand how to determine the technical development relevant to enterprisal growth, on the other, how to measure the penetration of technical development into the enterprise. We think to have succeeded in forming a method to measure roughly in what scale enterprises are able to accept new technics.

In the third "step" of research we would deem the time ripe to try to reveal the human factors of enterprisal development. On the basis of numerous foreign researches our work hypothesis is that a significant correlation must be between the stimulating "company atmosphere", fostering the development of the creativity of employees, the structure and style of organization-management on the one hand and the development and profitability of enterprises on the other. We have, therefore, set as an aim to survey the quality of the mentioned human, organizational-managerial factors, and to try to reveal the interactions in the enterprises, that had been found the most successful in the previous phase of research and were quickly developing or especially lagging behind.

Researches made by the method of comparative statics

We have examined the development of five groups of agricultural co-operatives according to income size /gross for one worker/ with the method of comparative statics in organization-indifferent approach. Our target has been on the one hand to determine whether the differentiatedness is growing or decreasing and how this all influences further development. As a more distant aim has been set to repeat the same examination with dynamic method and in organizational-identical approach, and to be able to make also methodological research comparing the results.

The already performed analyses have lead to the finding that the economic growth rhythm had been considerably differentiated among the co-operatives belonging to various income categories. In the lower income categories the rhythm of growth had been generally lower than in the higher income groups. It would, however, be hasty to conclude from this to a balancing out of the growth, as at the same time the absolute quantity of growth had essentially been larger in the higher income categories.

The differentiation accompanying growth had been shown most sharply in the increasing difference of results among income categories. The "distance" had been increased by growing volume of loss in the lowest income category and by increasing volume of profit in the highest income category. The development fund per one employee in the highest income category was almost sevenfold of that in the lowest income category, became in 1981, however, more than fortyfold. In the lowest income group/s/ the development fund-piling diminishing not only in proportion but also in absolute amount leads necessarily to problems of fixed asset management.

LUGOSSY, Györgyi: A termelészövetkezetek fiatal vezetőinek közéleti tevékenysége. /Public activities of young leaders of agricultural co-operatives./

Magyar Mezőgazdaság, Budapest, Vol. 38. No. 33.

In agriculture compared with all other national branches is the highest of the number of leaders under 35 years of age. Their role is gigantic in the social and economic life of the village. On the one hand the planning of the agricultural production, the shaping of works and work organization, mechanization and chemicalization are unbelievable without experts of theoretically, practically high grade qualification. On the other hand, the role of agrarian exports is constantly growing in the improvement, direction of the social life of the village.

The instructing educating work, the cultural life, the health and professional administration, the organization of production are setting more and more greater tasks on the agrarian intelligentsia.

It is not enough that they should be qualified, informed in economic questions, but it is a requirement equal to professional skill to join in the political, social life of the village.

Also the process of acquiring knowledge necessary to perform the production has been transplanted from the family framework to a social level and thus to the circle of communities. Formerly the peasant youth had to learn the whole production process, as almost all levels of agricultural work had been done by everybody. In the peasant farms built on manual work this knowledge was passed over empirically from parents to children. Contrary to this, in our days, the road of development is - owing to the improvement of the division of labour and mechanization and other factors - meant by specialization of a greater and greater measure. The knowledge required can only be obtained in the framework of state education.

There are quite a number of party members among those under 30 years of age, but while it is expressly high their proportion in the age group of 26-30 years, it is very low with those under 25 years of age. All in all, however, the age composition of the membership in case of co-operative leaders may be said satisfactory. The share of the members of KISZ /Association of Communist Youth/ is also higher in the circle of those disposing of higher grade school qualification. On the contrary, the membership of other social organizations is not so tightly connected with school qualification. The professional workers' and the low grade school qualified co-operative leaders' larger share participates in the work of other social organizations than those disposing of medium or high school qualification. The wish of a good part of young co-operative leaders is to participate in the work of some social organization, to be elected member of leadership there. It is a positive phenomenon that a smaller proportion of younger age groups consider the honest daily work as a public activity. We have obtained from their words a picture that they are anxious to have more, than is social work, too. The honest work, namely, performed in economic organization is an obligation and is meant as public activity in so far that it is realized in the framework of a given economic organization. From the public activities the most valuable is, where there is activity behind it. Such are declaration of opinion, social work. But the membership in various organizations, the participation in different programs are contrary to the former ones rather of passive character. Consequently, the youth is to be educated, encouraged to dare undertake acting, probable clashes, then without this the

original functions of public authority are not realized.

MÁTYÁS, László: A magyar mezőgazdaság és a Közös Piac országainak összehasonlító költségvizsgálata. /Comparative cost-survey of the Hungarian agriculture and the Common Market countries./
Gazdálkodás, Budapest, 1983. No. 3.

All producer utilization of industrial origin of the Hungarian agriculture - reflected to gross national production of branch units - is placed about the average of similar Common Market values. This proportion is higher than in our country in the Benelux countries and Great Britain, lower in France and Italy. Taking also natural factors into account, this refers to the low efficiency of the utilization of fertilizer and plant protection materials.

The share of the own, branch producer utilization of our agriculture projected to the gross national production of branch units is reflecting a certain autarchic feature of the branch, as this share is much lower in all European Economic Community countries. The main cause of this is that the processing grade of producer utilization inputs is much higher in E.E.C., thus, the inputs of similar goal are considered in these countries to be of industrial origin, whilst in Hungary of agricultural origin.

The material utilization of the inland agrarian branch represents a much higher proportion of the whole producer utilization than in the other countries under review. This is explained by the relative underdevelopment of services.

Further interesting conclusions may be drawn if we survey all producer utilization of the branch also at producer and realization prices. According to this at the beginning of the seventies the current production cost in Hungary, projected to gross production, was far higher than in France and Italy, but lower than in other E.E.C. countries.

By the end of the seventies this picture has been significantly modified and the Hungarian Agriculture has got in this respect in a more unfavourable situation than the other countries.

Comparing the share of the gross national production of the branch in relation with all national economic gross national production, with the share of the branch producer utilization and of the total national economic producer utilization, we may come to the conclusion that in respect of producer utilization the agriculture produced at the beginning of the seventies more cheaply than the other branches. That is to say in respect of input the situation of our agriculture has been formed

more unfavourably in the above projection.

Finally, it becomes evident from the study of import that the import material need of the Hungarian agriculture is by far higher than that of the countries under review. At the same time it may be observed that the specific import material need of the Hungarian agriculture is less than the average of the other branches of national economy.

NAGY, János - ARATÓ, Katalin: A magyar mezőgazdaság 1960-1980 közötti fejlődése mutatóinak elemzése és prognózisa 2000-ig. /Analysis of the indices of the development of Hungarian agriculture between 1960 and 1980 and forecast up to 2000./

Manuscript, prepared in the framework of the common research in 1982-83 of AKI and the International Institute of the Economic Problems of Socialist World-System

The national economic weight of the Hungarian agrarian sector is significant, its share in 1980 - projected to gross and net production alike - was of 16,7 per cent. Its favourable climatic particularities and necessary production experiences make the satisfaction of the needs of population in all temperate zone plants, what is more, even the export of a considerable volume possible. The agricultural production grew rapidly in the period under review showing a 62 per cent increase between 1960-1978. At the same time, the number of active employees working in agriculture sector had fallen back to almost half during 20 years though in the recent years the decrease has stopped, what is more, even a small increase has arisen. Also the structure of employment had considerably altered, the share of those engaged in state farms and producers co-operatives increasing to the detriment of individual farmers. The division according to professional structure had also improved. The considerable growth of production had been realized parallel to the diminishing of agricultural arable land. At the same time, also in the division of cultivation branches had changes arisen, at the effect of which the production structure had undergone a modification. The expansion of production had been accompanied by an increased growth of producer utilization, in consequence of which the efficiency of agricultural production had deteriorated. The share of utilization materials of non-agricultural origin had increased within the total utilization.

The stock of means of the branch has grown to double in the course of the past 10 years. As a result of this, the fixed asset value difference per worker has decreased in the totality of agriculture and national economy. It is worth, however, mentioning that the agrarian sector,

beside an asset and investment stock less than its national economic weight, takes a share of 22,4 per cent of export, and only 8,4 per cent of import.

In the course of the recent years the proportion of imported machines has grown within the agricultural machine investments /to 57 per cent/. Beside this a further shift may be observed in favour of capitalist purchases, the proportion of which was insignificant at the beginning of the period.

Parallel to the development of agrotechnics have improved the conditions of irrigation and the indicators of fertilizer utilization. The quantity of fertilizer for 1 hectare agricultural area had grown between 1960 and 1980 to more than ninefold.

The formation of the volume and structure of agricultural production is fundamentally determined in our country by the internal consumer needs and those of the foreign market. Accordingly, in the course of the past 20 years significant changes have taken place in the composition and volume of production. In the second chapter of the study a detailed analysis may be found on the results and yields of crop production and animal husbandry.

Parallel to the structural transformation of production has altered also the structure and level of consumption. In 1979 the population used 45 per cent of its income for food. Since 1960 the average meat, milk and milk product consumption for one head has increased considerably, whilst the weight of cereals and potato consumed has diminished.

The expansion of production has made the growth of export commodity bases possible. The fact may be booked as a favourable tendency that the share of processed goods has increased quicker in the export than that of raw product. In 1980, 63,6 per cent of agricultural and food industrial export was given by food industrial products. The structure of our agricultural and food industrial export was divergent as per relations. To socialist countries mainly vegetal products and conserves, to western countries animal products, fresh and quick-frozen fruits, vegetables have been delivered.

The third part of the study gives prognostication relating to the period up to the millenium. The data of the forecast are based on proper calculations and comprise beside the formation of production also factors serving the development of production. The phenomena of world economy, the slowing down rhythm of the increase of COMECON countries and the present Hungarian foreign trade situation refer to a slow growth of agricultural production and food consumption, to its stagnation respectively decrease in some years.

NAGY, János - ARATÓ, Katalin: Az élelmiszer-termékek termelésének és kölcsönös szállításának egyes közgazdasági problémái. /Some economic problems of the production and mutual transportation of food products./

Budapest, AKI, 1983. Manuscript prepared in the framework of the common research in 1982-83 of AKI and Socialist Worldeconomic Institute of COMECON

The development of the agricultural production of the COMECON countries may be divided into two periods. At the beginning of the decade a rapid, at the middle and end a slowing down increase was perceptible. The growth of production was realized with considerable annual fluctuations. The indices of food production per head prove unambiguously the above statement. The Hungarian agriculture was characterized by a relatively smooth growth of production.

The volume of agricultural investments has considerably increased up to the end of the decade under review in most countries, an unambiguously decline may be perceived only in the case of Poland. The investments of food industry increased in a rhythm surpassing those of agriculture. In 1981, however, the tendency characteristic of the whole decade turned in favour of agriculture. In the seventies the proportion of active agricultural employees decreased in each of the COMECON countries within the active population, but the rhythm of the decrease was different. When examining the Hungarian employment structure, the fact is to be taken into account that a part of the cultivators of small-scale farms are not agricultural labourers. At the same time the complementary production line form had been spread, in the frame of which the members pursue also activities of not-agricultural character.

Further on, the production results achieved by individual countries in the seventies are analysed in respect of the principal product group. The picture outlined with the help of concrete production data is completed by indicators relating to meat and cereal production per one head.

Our country has attained considerable results in the development of cereal production, in the formation and spreading of production systems. The outputs of meat and milk production are similarly high on COMECON level, though the further improvement of these two fields is problematical in sale and structure aspects.

Between 1970 and 1981 the population of the COMECON countries grew by 9,3 per cent. At the same time in the course of the decade the national income per head increased by an average of 68 per cent. The expansion of retail trade was of 63 per cent, within this the sale of

food products increased by 53 per cent. The growth of population and incomes set the food economy enhanced tasks.

From the examination of the change of consumption by countries two more important conclusions may be drawn. On the one hand the differences experienced in the consumption structure of the member states have diminished, on the other the changes show in the direction of the formation of the more healthy nourishment customs.

In the foreign trade of the European COMECON countries the agrarian products play an important role. The member states have a considerable agrarian export and import turnover, but a not-negligible part of the agrarian foreign trade is done with capitalist countries. In the home trade of COMECON the share of agricultural articles is lower than in the capitalist one.

In the case of several product groups the COMECON countries appear on the world market as net importers. Thus, for instance, as regards cereal and fodder kinds neither in the long run may be counted on a solution of the problem within the COMECON. In the internal trade of COMECON the role of competitive products has increased. A good part of these is being traded today in various construction settlements quite differing from the general one.

In the foreign trade turnover of our country the member states had in 1981 a proportion of 55 per cent of the whole. In the food trade this proportion is of 51,9 per cent. The export-import proportions have, however, considerably altered. While in 1971 43 per cent of food import and 56,1 per cent of export was given by the trade with the member states, in 1981 this proportion was 25,6 per cent in import and 61,8 per cent in export. 16,1 per cent of our foreign trade with socialist countries is at present food, that is higher by 4 per cent than it was in 1971.

Our most important partner is the Soviet Union; in 1982 72,2 per cent of our socialist food export was sold there. Our second most important partner is the German Democratic Republic, but the volume of our export to her has fallen back in recent time. This tendency may be observed also in the case of other member states, as the share of our food trade in this relation has diminished to about half. Among the causes of this the introversion, the strive for self-sufficiency of the individual countries may be mentioned.

The application of some forms of the co-operation with the COMECON countries, for instance, contracts of production, manufacture specialization and interstatal agreements, co-operation between producing enterprises and its improvement may greatly contribute to the deepening of contacts among member states.

NAGY, Kálmán: A racionális termékszállítás és -fuvarozás lehetőségei a mezőgazdaságban. /Possibilities of rational product transport and conveyance in agriculture./
Budapest, AKI, 1983. 19.52.

Transport is the largest volume work-operation of the agricultural production. 60-65 per cent of machine hauling power performance, 10-35 per cent of production prime cost is made of transportation, material moving works. The decrease of the cost of transportation influences, therefore, considerably the management results of agricultural plants. At the same time, one reserve of the increase of yield is constituted by work done in optimum time, that demands the well organized, smooth performance of tasks. The third essential condition of the efficient transportation is the structural organization and the formation of the adequate interestedness relations of the organization engaged in transportation. The mentioned problems necessarily raise the survey of the rationalization of operative transportation, of the economical, organizational and interestedness questions.

The volume of agricultural transport is reaching at present 230 million tons yearly. The special situation of transport is determined by the seasonal and volume-like character of agricultural production, the diverging particularities of conveyed products and the place of transport processes in the national economic relation system. In the agricultural transports also vehicles of other national economic branches take part, thus, in product transportation a mixed process chain had been formed.

One of the important conditions of the operation of transport system is the character and satisfying state of the existing plant network of roads. To the planned spreading of vehicles of great load-bearing capacity the modernization of cart roads, their reconstruction to macadamized roads are necessary. On account of the growing traffic the annual load of roads /at present 600/800 t/km/ is increasing and owing to the enhanced use, there is a need of continuous road maintenance.

The average distance of operational transports - except the plant and centre of the farm - is everywhere about 10 km or even exceeding it. The present average carrying capacity of 4,7 tons of the lorries is not enough anymore, the great number of IFA lorries constituting the bulk of stock, practically determines the carrying capacity. It would be desirable the spread of 10-14 tons agricultural lorries. The modernization of the stock is to be achieved in future by changing the type structure, within it by increasing the carrying capacity.

In transportation the capacity proportion has shifted from the tractor hauled trailer to the lorries, its further proportion increase is, therefore, an objective necessity. But with some work operations the conveyance by tractors is still dominating on account of short transport distance, road and terrain circumstances.

Out of the crops the specific transport performance indicator /tkm/ha/ of potato, vegetables and fruits is outstandingly high, that is to be explained by the long transport distances /from the place of production to the storage place, maximum 60 km/ and by the several movements of material /for instance in the case of apple eleven times, of tomato 3,5 times/. The transport tensions accompanying harvest are due to the scarcity of capacity. In the plans the transportation task can be performed in the period of cereal harvest only at the expense of considerable overwork. The measure of this is from time to time surpassing by 80-100 per cent the legal working time. In recent years the proportion of hired transport has risen and reaches today even 1/6 part of the shift time. The transport performed for others is often preferred even to campaign targets. We meet this especially in units of small group manage-

We see the possibilities of the rationalization of transport in

- the development of new transport vehicles /agricultural lorries of high carrying capacity, half-trailer to the existing lorry chassis, collecting-transloading cars, lorries and trailers of raised loading space for terimé materials respectively swath-collecting trailers, self-loading fruit-carryin trailers, etc./,
- the formation of new transportation modes, of technological systems /two-phase transportation mode in case of cereal and sugar-beet harvest as well as of moving and scattering of organic manure, that of cylinder large-bale harvest of straw, etc./,
- the realization of new interestedness forms and organizational systems /small group interestedness, decentralized transport system/.

New system transport technologies make it possible that also transport enterprise should join in agricultural product transport already at the production place, for instance with the transport of sugar-beet and cereal to the collection place.

In the process of fertilizers we have proposed the introduction of self-unloading railway carriage fertilizer transport model system - at present formed still only for the agrochemical centre - for the offsetting of transport tensions developing at the joining points of arrival.

The agricultural product transport represents 12,5 per cent in the volume of transport by rail and a share of 2,2 per cent in the transport of public utility. The public commodity transport may be used with success mainly in goods moving to small and medium distances. In case of

transport by rail the greater average distance /200-250 km/ may be explained by the decentralized form of product transportation. In the public transport this distance is smaller /in case of agricultural products 35 km/, because the transport relation of agricultural regions and town requires a shorter distance.

To the successful running of agricultural plants belongs the development of a more appropriate work organization. The centralized transport organization is the characteristic of smaller agricultural plants. Its advantage is its simple, flexible way of assessment. The work of operative guidance on the other hand increases. In the partly centralized organization of transient character generally farms with expanded sphere of activity are working. The daily transport tasks are ranked, the division of labour is jointly performed by transport section leaders. State farms and agricultural combines are making use of the decentralized transport organization form. The sphere of activity of transport leaders is here limited to the direction level of lorries and tractor hauled vehicles. The preliminary planning of transport campaign is in this case often uncertain, the work organization product-centric, the administrative work exaggerated.

In the semi-independent, self-accounting system the transport organization is decentralized. The direction of transport tractors and lorries is organizationally divided. One part of the lorries is held at the exclusive disposal of branches, "lent out". Switching to a semi-independent system the organizational transformation of the modernization branch may become necessary.

On account of the semi-independent management the registration of transport requires a more detailed treating. We have, therefore, proposed in the case of these farms that the machine repairing workshop should belong organizationally and in respect of accounting to the transport section.

The fuel and lubrication material saving has been regulated by the public authority. The long-distance transport /over 100 km/ regulation refers to the limitation of idle running of lorries and penalizes with the payment of surplus fuel cost in the form of compensation fee. The effect of this measure on the better exploitation is - according to our opinion - limited in agricultural farms. The limits of improving the exploitation of running are given by the character of agricultural transports, because the traffic is mostly in one direction, without any return cargo. The exploitation of running may be estimated to be of 55-60 per cent in agricultural farms.

The accounting of transport activity outside the farm happens with the application of the items of valid lorry tariff. In the inter-

nal accounting it is advisable to approach the national norms. The weight-tariff shows an incitement system on the form of additional charges. The mass-product transport tasks are booked generally with weight fee.

Within the organization of agricultural farms semi-independent units based on small group interestedness system are being formed. From the new small venture forms the transport units of industrial and servicing co-operative specialized groups are satisfying mainly the transport needs of the population, making use of the lorry park of the farm. The lump-sum accounting transport section is a semi-independent unit of the agricultural farm, that manages separately and completely the tasks of venturing, commodity taking over, charge calculating and document handling. It may perform transportation for anybody in all three conveyance forms /traditional transport, hiring and placing at disposal of vehicles/. The transporting economic work communities are - contrary to specialized groups and sections - to be considered private persons and, therefore, have a divergent special legal regulation. This for instance, prescribes that they may undertake transportation for farming organizations only in case of certain conditions. If outside working time the community performs a transport task given by a farm, it is called drivers enterprisal work community. In the internal accounting system of transport company the normal-hectare indices of statistical reports are not suitable for appropriate registration. Instead we propose the general introduction of shift hour basis.

For the internal accounting of transport section tariff items have to be established, in the amount of which the actual prime cost and income contents of definite proportion are included alike. We propose that the internal accounting tariff items of the farm should be identical or similar to the national lorry tariff or should calculate with 10-15 per cent lower prices than its charge-items.

To stimulate the interestedness of drivers individually, we propose the introduction of a more inciting wage system, that would be combined with the minimum hourly wage, the performance wage according to kilometers accomplished as well as with the premium on return cargo performance and cost payment on fuel saving.

ORBÁNNÉ NAGY, Mária: Az élelmiszer-fogyasztás várható tendenciái hosszabb távon. /Expectable long range trends of food consumption. Budapest, AKI, 1983. No. 17.

We have worked out regarding the consumption of the quantity of principal food and consumer goods a prognostication in two versions, leaning basically on two different growth rhythm of real income. In the first alternative we have calculated that the average growth rhythm of real income will be 2,5 per cent up to 2000, and 1,6 per cent according to the lower version. The characteristic of both alternatives is that it supposes a held in growth of real income for the eighties and a quicker for the nineties.

When forming the long range prognostication of consumption we have leant on mathematical-statistical methods /calculations of trend and one and two variant regression/, international comparative researches, direction line given by nourishment norms and analysis of consumption influencing factors /income, price, demographics, self-sufficient production, strata characteristics of consumption/. From the examination of the expectable tendencies of food consumption up to 2000 the following summarized conclusions may be drawn:

1. About one quarter, one fifth of the total consumption to be expected by the millenium is given by food as against 29 per cent of the year 1980.

2. The present level of our food consumption corresponds to our economic state of development, reflects a relatively good nourishment state and an over-nourishment in some foods /for instance, cereals, sugar, fat/. The shaping of the structure of consumption approaches the more valuable foodstuff carriers - meat, milk, egg-, while the consumption of cereals has gradually been decreasing since the sixties, and the former rapid growth of the biologically unfavourably high /31 kg/year/head/ fat consumption has stopped.

The problematic elements of our nourishment are the high sugar /38 kg/year/head/ and slowing down potato consumption. Neither can we be contented with the present quantity of vegetable and fruit consumption. Our vegetable and fruit consumption was in 1982 totally 155 kg/head.

3. In the almost two decades up to the millenium, especially in the nineties the improvement of the quality of consumption against the increase of quantity comes into prominence.

The following positive changes may be expected in the structure of food consumption up to 2000:

- the consumption of products containing animal protein will rise

in totality by 20-28 per cent. Within this the consumption of milk will grow most rapidly, the present 175 kg/year/head consumption may rise by 2000 to 200-220 kg. From the meats poultry will increase relatively dynamically, in chopped meat we are counting - especially in the eighties - on a rather moderate growth. The total meat consumption of 76 kg/head in 1982 will expectedly be higher by 10-15 kg at the end of the nineties. The shaping of egg demand will be determined by the change of consumption of the former two protein sources:

- within the stagnation and later small-scale decrease of the total fat consumption, that of the now very low vegetable fats /7 kg/year/head/ may increase to one and a half;

- the consumption of cereals per head will decrease from the present 112 kg by further 15-20 kg by the end of the century;

- in vegetable and fruit production the principle season will spread, the consumption of vitamins will on account of the domestic processing, the growth of the consumption of bought conserves and deep-frozen products be more equal - although not satisfactorily, considering the desirable health reasons. In the whole we may count on a vegetable and fruit consumption of 170-190 kg/year/head by the millenium.

4. A slight change can be anticipated of the sugar, potato, vegetable, fruit, fish and alcohol consumption. Without conscious influencing of consumption /for instance, efficient health advertisement, new, up-to-date products, modification of price proportions, secure production background/ the consumption of these products will hardly approach the level held to be healthy. This topic is dealt with Gábor-Kóbor-Nagy-Nagy: "Forecast of the development of food industry and food consumption up to 2000" study.

5. In the more and more difficult conditions of food consumption level improvement a very great role is played by the agricultural small-scale production /household and auxiliary farms/. After a continuous decrease lasting more than a decade the share of self-supporting consumption is rising again from the end of the seventies in the total food consumption. The volume of self-sufficiency in meat, fats, potato, fruits, wine has increased. The decrease has been moderated to minimum in case of vegetable, and the choice of vegetable has fortunately expanded. The tendencies of self-supporting consumption, reported above, will be maintained expectedly up to the middle of the eighties, in case of the second version of the forecast up to the beginning of the nineties and besides, also the commodity producing character of the small scale production will get stronger.

6. The important task of the 20 years ahead of us will be - beside the realization of healthy nourishment - the satisfaction of the

differentiated consumer need either in the low or middle and high income strata, and the approach to each other of the differences of consumption depending on the income and number of supported children. Nowadays, still it is very considerable the quantitative difference of the food consumption structure and of the consumption of biologically important food between the strata differentiated as above, especially in the consumption of meat and vegetable-fruit per one head. It is an illustrative example of this that in the families of high income /above Ft 3800/month/head/ one and a half more meat - projected on one head -, by 60-80 per cent more fruit, respectively, by 50-60 per cent more vegetable is consumed than by those belonging to the lower income categories /below Ft 1800/month/head/.

The sensible approaching of these strata consumption differences requires a conscious consumption policy /for instance, support for the strata of low income, price proportion modifications, expansion of cheaper food, rich, however, in protein/, especially at the time of the stagnation of real incomes, in the first half of the eighties. Although we cannot get rid of the consumption divergences shown above up to 2000, the differentiation of consumption will expectedly - except vegetable and fruit - decrease up to the millenium to such an extent that also the strata of lower income will be able to have healthy nourishment.

PAPP, Zsolt: A szőlő-bor verticum helyzete, költségvetési kapcsolatainak alakulás. /Situation of the grape-wine verticum and formation of its budgetary connections./

Budapest, AKI, 1983. No. 8.

Our wine consumption has decreased considerably - by almost 5 litres - in the past decade, and thus, the consumption per head is today altering around 33 litres. At present the balance of demand and supply on the home market has lastingly disintegrated. The offer of quality wines is higher than necessary, but the quantity of low-priced, table wines does not even approach the needs. The greatest problem is, therefore, the lasting looking scarcity of adequate choice, that is connected with the valid price regulation and with the system of turnover tax. The profit-key system of the catering industry is increasing the share of higher price products and moderating the offer of cheaper wines, too. On the contrary, the pricing of the retail trade does not offer - in spite of the free price form - many possibilities for the shaping of wine prices better expressing the quality. The creation of the harmony of price and quality is of fundamental importance in respect

of the inland market. The assortment may be expanded only with the fulfilment of this condition, respectively, with the possibility that the turnover and consumption of the so-called "cheaper wines" should grow, even if in a modest measure. The growth of the wine consumption would hold out, however, promises of the moderation of the consumption of spirits having had become of a socially insupportable scale. The attainment of these desirable goals demands, however, the unlimited success of the free price form and the alteration of the turnover tax system.

In the development of the grape-wine branch the export interest-ness has in the last decade become determining. The wine export surpasses at present 2,5 million hectolitres, with more than 200 thousand hectolitres champagne within it. In our days - unalteredly - the export to socialist countries is of decisive quantity, the capitalist export has only a share of 25 per cent /35 million \$/. It is a favourable tendency that the export of bottled goods has expanded in Rouble relation, in the \$ settlement export, however, the share of goods in casks is more significant. The position of Hungarian wines in the socialist markets is stable - as regards selling -, in the capitalist export, however, there are many uncertainty factors. An essential increase of price and expansion of sale possibilities are, namely, not to be expected on these markets, what is more, in 1982 even a considerable price decrease had ensued. But neither the possibilities of a further rise of Rouble settlement prices are encouraging with the present COMECON pricing principles.

In the case of a further increase of export we have to prepare ourselves to a rapidly waning efficiency on the capitalist markets and to increasing quality requirements and to price growth of very modest measure in the case of our socialist partners. In the knowledge of these circumstances the quantity increase of wine export seems to be hopeless and futile, the present level is to be maintained, however, at least up to the beginning of the nineties on the ground of the long range COMECON wine agreement. In the case, however, if we give up the further expansion of export, a favourable possibility would be created to increase the efficiency of export and mostly to improve the domestic supply. It must be added that subsequent to the year of 1982 having produced an outstandingly high - more than 6 million hectolitres - wine output -, also the expansion of export is becoming temporarily necessary on account of the present size and composition of wine storing places. For this, however, above all the socialist market offers possibility, because - in 1982 - also the vine-growing countries of the E.E.C. had achieved outstandingly high outputs.

The total vine-growing area decreased in the past decade by more

than 60 thousand hectares. The analysis at sectoral level has demonstrated that the decrease of vine areas of the small-scale farms exceeded that of the large-scale farms. We have to be prepared also in the near future to a quick rhythm clearance of old small-scale plantations of traditional cultivation, this process cannot be moderated by various interventions either. There is, however, a growing necessity of increasing the small-scale planting in order to maintain the present lively planting interest. The stimulation of small-scale planting does not require - contrary to large-scale farms - first of all the increase of planting support, rather does it mean the improvement of propagation material supply, a stable guarantee of the ownership of plantations and the survival of the present turnover tax system in the long run. In spite of the growing small-scale plantings, any planting target is unalteredly unfounded, that would contain the full replacement of the clearings. The large-scale farms are not sure to be able to keep their vine-growing areas on level with their present accumulation possibilities and on the basis of expectable replacement tasks. The whole vine-growing has remained in the past 10 years on almost the same level, the average yields have, however, risen by 21 per cent as an average of the two Five-Year Plans. At the same time, it may be observed the considerable annual fluctuation of average yields - for instance in 1981 and 1982 - due above all to weather conditions, but its measure also expresses the unfavourable age composition of the vine plantations. The size of the average yields is considerably different as per social sectors and production areas. The production level of the state farms is the highest and that of the household and auxiliary farms is mostly lagging behind. Thus, on the ground of the present level of the production a considerable further increase of outputs remains further on as an unaltered requirement. According to our today's knowledge and on the basis of our conditions, to comply with this requirement a favourable possibility is first of all offered by the raise of individual interestedness and the spread of relevant work organization forms - part work performance and various entrepreneurial relations. - The outputs of small-scale block plantations and large-scale plantations given to part-work performance are, namely, in all cases surpassing the average yields of plantations of "common cultivation".

The costs of vine-growing have - similarly to other agricultural production - considerably risen in the last years. The unalteredly high share of the indirect costs - 30 per cent - gives less and less chance to the realization of cost-saving technologies and enhances by all means competitiveness of small-scale production. The growing costs and the rentability becoming unfavourable are also characteristic of the viticulture and wine-bottling. Out of the costs of the vine verticum the

costs of raw material and bottling have risen the most rapidly, at the same time the share of the cost of wine-handling has diminished. The considerable differences of the costs of bottling by farms call the attention, however, to the fact that there is a possibility - above all by better exploitation of existing bottling capacities - to moderate the costs or at least to slow down further increase.

The often asserted unfavourable economic position of the grape-wine branch naturally urges the consideration of the possibilities of improvement of the profitability by various phases of the verticum. The experiences of recent years - especially those of 1982 - have shown that first of all the increase of the level of vine-growing is to be achieved, the reserves of which being very considerable. That is proved by the output of the plantations given to part-work performance surpassing those of former years and alas also by the fact that our backwardness from the international forefront is unalteredly significant. To make use of the possibilities hidden in the raise of average yields there are no too favourable conditions at present, therefore, the increase of the individual interestedness of large-scale farmers, respectively, the spreading of work organizational forms and small-scale ventures making it possible - and promising higher average yield - will be more needed in the near future.

In respect of the improvement and success of the grape-wine verticum the role of budgetary contacts are unalteredly considerable. The grape-wine branch undertakes a considerable - already traditional - part in the increase of centralized income, but its development requires a support of changing amount. The size of support is above all in connection with vine-planting and commercial assistance of determining proportion. The subsidies of various functions concern in divergent measure the agricultural and industrial phases of the verticum, the social sectors participating in the production and the situation of the small-scale production are on the basis of their share the most unfavourable. From the withdrawals the turnover tax is of determining size. The general experience is that the amount of turnover tax on the produced, respectively, sold wine is of growing tendency and through it the support relating to the grape-wine branch, respectively, given to it, is recovered. At the same time, the transforming role of the turnover tax is very unfavourable. The withdrawals touch upon all sectors and their measure per unit area is higher in the state sector.

In the interest of a better survey we are summarizing how the balance of the supports and withdrawals concerning the grape-wine verticum is taking shape /Ft/ha/:

	1961	1974	1979	1980	1981	1982
Total support	1949	1645	5213	9499	11252	11971
Total withdrawal	<u>11556</u>	<u>11750</u>	<u>13728</u>	<u>15384</u>	<u>17476</u>	<u>19962</u>
Balance	-9607	-10105	-8515	-5885	-6224	-7991

The sum and mode of function of the budgetary relations are expressing unalteredly and unambiguously in spite of the growing supports the aspiration directed to the increase of central financial bases. The situation is unfavourable if we are examining the production regulating role of budgetary relations; we think that this function has got in certain respect into background, above all as a result of the high payment obligations. The low production level, the disproportionate age composition, the great output fluctuations and unfavourable interest-edness all urge the improvement of the production regulating role of budgetary relations. For instance, the change of turnover tax system, the limitless realization of free-price form but also the alteration of other elements of the withdrawal system.

Beside a negative balance also the costs of vine-growing per unit area have considerably risen. The increase of the input prices has only in part been balanced by the shaping of average yields; on the rentability of the vine branch first of all the rising wine prices had a favourable effect. More contradictory is the rentability of the viniculture and especially that of wine export. Finally, it must be emphasized that probably the above picture should be modified if we judged - taking also the forming of budgetary relations of the verticum into consideration - the efficiency of the production and inland and foreign distribution of our wines.

PILLING, András: A vezetési alrendszer sajátosságai és fejlesztésének néhány kérdése a mezőgazdasági termelészövetkezetekben. /Peculiarities of the directing sub-system and some questions of its development in agricultural producers' co-operatives./
Közgazdasági Szemle, Budapest, 1983. No. 12.

The article gives in the first half a survey on the peculiar formation of management sub-systems of the producers' co-operatives and states that in the majority of cases - contrary to the classic ones - first the organizations were developed and only afterwards could the aims be set and the organization adapted.

These peculiarities - which are the consequences of the fact that a considerable part of the present producers' co-operatives has been

formed by amalgamations - give explanation for the relatively frequent reorganizations and refer at the same time to the possibilities of organization development.

In the second part the article introduced the present types of management sub-systems, emphasizing their special features.

The third part gives a survey on the management levels and on the division of labour in them. It looks for an answer to why are management levels so variegated and why the division of labour is so multicoloured at individual management levels.

In the fourth part it comes to the definition of the important conclusions in respect of development. Thus, among others to the following:

When setting the strategic aims, not only the outside environment of the enterprise /producers' co-operative/ but also the internal qualities have to be taken into consideration. Out of these the natural endowments are fundamentally influencing the production structure, on which also the dimension and articulation, the labour force situation, the instrumental providedness, the possibility of sale and purchase and many other circumstances have an effect.

From all this the conclusion may be drawn that there are such permanently influencing factors, that give a relative stability to the management sub-systems. Therefore, all three types of management sub-system will survive for a reasonable time, as it is also natural that there will be considerable changes - compared with the present forms - in consequence of the growth of sectoral characteristics. All this is following unambiguously from the fact that owing to the development of production means the concentration is increasing and the specialization deepening.

Finally, two characteristic features of the expected development must be mentioned: namely, the increasing gaining ground of the functionally operating staff of the management sub-systems organized on areal bases and the concentration of the vertically built branches into one organization unit in the management sub-system built on branches.

Coming to the other part of the topic, to the managerial levels and their division of labour, it must be first of all mentioned that in the future a tighter harmony of the sphere of authority, of jurisdiction, of responsibility and interestedness must be created. It is also without doubt that a state cannot be long maintained, where the high level leaders are materially interested only to a certain extent in the increase of results and beyond that only the moral interestedness stimulated.

The riches of forms that is characteristic today of the division

of labour of the high level leaders, will further get richer, whilst the enterprisal environment, becoming more and more severe, will enforce such a rational organization that decreases to minimum the overlappings, disproportions and other co-operative disturbances.

We may count with great probability on a further growth of the role of staffs, working at the side of the leaders, in which also expert helping the solution of outstanding tasks will get a place. In many producers' co-operatives there is an aspiration to put an end to the troubles that may be found in the division of labour of the middle level leaders by perfecting the interestedness system. The preliminary conditions of all this are, however, to have an appropriate information system, that is today being realized in a way that beside the formal information system there is an informal, too. It is today totally evident that the modernization of the information system is a task not to be delayed, and it follows from this that the obstacles of the timely revelation of the troubles in the division of labour of middle level leaders, appearing in this field, will come to an end and consequently more favourable conditions develop to create an adequate interestedness system.

The increase of the material interestedness of the leaders of working place is justified by more circumstances. First of all that on leaders of working place, who are able to solve problems, may only be counted if the surplus they are giving as compared with skilled workers, is appreciated. Otherwise a good skilled worker will not assume a leadership of working place. It is also an inevitable requirement that the leaders of working place should have an authority corresponding to the tasks, as without this they cannot assume responsibility, neither induce subordinates to work.

RÁKI, Zoltán - TÓTH, Béla: A gyepfelújítás és az intenzív gyepművelés néhány ökonómiai kérdése. /Some economic questions of grass renewal and intensive grass cultivation./
Budapest, AKI, 1983. No. 12. p 72.

The results achieved in the field of grass cultivation development are rather modest and partial. A progress worth mentioning has been made by research, which has preceded obviously the broader practical production and has created the theoretical basis of development. On the basis of results the national economic plan wanted in several cases to ensure the growing proportion of mass-fodder base by an output increase of quick rhythm. Between the significant, also under plant

circumstances tested research findings and the moderate output increase a tension has arisen. As a joint effect of several factors a wide-ranging initiative has unfolded in recent time to promote the production of the branch. Systems have been organized for the task, which compile the most essential technological elements of grass cultivation in a production program and represent peculiar types of development.

The promising aspirations raise the hope that outputs may be increased also on grass areas in effect. The real development of grass cultivation is not to be imagined without adequate economic result. The question is in any case with what inputs and efficiency may the surplus output be achieved and with what method can both cost level and output increase be made acceptable.

The study examines the intensive directions of grass cultivation development. It looks for an answer to whether the cost of the increase of intensity are recovered at various intensity scales and whether the formation of input-output relations restricts or fosters the growth of production level.

The grass area of the country has been forced back in the past 80 years to regions of weaker productivity. Even of the larger part of productive grass areas - owing to utilization during decades, erosion, insufficient recovery - low feedstuff level and weak average yield is characteristic. The fertilized area grew until 1978, since then it has diminished. The share of irrigated area has gone back and only one third of the areas with irrigation equipment is being irrigated.

The grass output - similarly to arable land mass-fodder - does not appear direct as a commodity, but is made use of through ruminating animals. The success of intensification is, therefore, influenced by the income conditions of cattle and sheep breeding. It causes difficulty that the grazing cows in milk consuming the largest mass-fodder quantity and case by case of young cattle is often limited by the placement of the grass, concentration of animal stock and its circumstantial moving, level and phase of production and by organizational difficulties. As regards the situation of the other utilization branches, the export efficiency of the one-oriented beef is not favourable, that of sheep breeding is essentially better, but cannot be considered determinant because of its smaller share.

Our grass cultivation may be qualified in its totality as extensive, confined to the collection of outputs. One main problem of the intensification is whether it is worth investing considerably to the production of grass. Is it not more practical to make use of the particularities and instruments /machine, fertilizer, irrigation/ making intensive production possible in other fields.

The concept is general that the existing pasture is not suitable. It had developed on such a low level of nutrient that had not made the strengthening and multiplication of valuable crops possible. Therefore, the main road of development - and of intensification at the same time - is the vitalizing of the existing pasture. Two - well separable - modes of this are known:

- replantation with ploughing, and
- over-sowing.

In respect of technology there are many versions of plantation and renovation of grass and also their costs are rather divergent. The cost of plantation and renovation may come according to our calculations to between Ft 6350-15 100 in case of replantation with ploughing and between Ft 4170-12 410 in case of grass renovation by oversowing. It is remarkable that the higher cost of over-sowing is almost double of the lower cost of replantation with ploughing. Within the planting costs the seed and fertilizer costs are determining. Contrary to the general opinion the operation cost is of relatively smaller weight /20-23 per cent/. The annual cost of intensive grass cultivation /without irrigation is of 2870-7659 Ft/ha, with irrigation of 4305-13 005 Ft/ha/ is by 2,5-3 times more with higher input than with lower input. Also with the simplest and more complex technologies a considerable yield /4,9-12,4 tons hay value per hectare/ may be achieved, but with decreasing technical and economic efficiency.

Considering that the average yield is in a smaller proportion increasing compared with the costs, the more modest inputs of intensive grass cultivation may give more favourable economic results. The production costs of grass products are being formed within very wide limits - taking the varied possibilities of input of means and modes of harvesting into consideration. The difference may be due to the innumerable solution versions of production, the more important may be characterized as follows:

- Compared to the lower level of production inputs, the higher increase the production costs by 22-42 per cent. The production cost-lowering role of the lower inputs - the cost-saving soil preparation and seed, the more serious fertilizing - justifies the emphasizing of the scales of lower level intensive grass cultivation.

- In case of intensive grass cultivation the irrigation raises considerably the production costs. In spite of this, irrigation may be applied with tolerable production costs increase - beside a lower shaping of other cost items. The average yield increase to be expected from irrigation covers only 53-58 per cent of the excess input.

- As compared with grazing the production costs of harvested and

stored grass fodder - taking also the losses of harvesting, conserving and storing into account - may be higher by 21-100 per cent. It follows from this that the intensive grass cultivation might first of all be coupled with grazing utilization. In practice, however, a reversed tendency may be experienced.

The production costs of the end-products of intensive grass cultivation is essentially higher than that of ancient pasture, utilized with minimum input. In case of sensible and economical farming it may be inferior to the production costs of the feedstuff of arable land mass-fodders and may have a favourable impact on the formation of the input of utilizing branches.

The large volume fertilizer utilization and irrigation - especially if it is not accompanied by the growth of the share of grazing utilization - raise the production cost of starch value in such a measure that it will be by 7-67 per cent higher than that of silo maize, its digestible protein production cost may surpass by 156-322 per cent that of lucerne.

If the aim of the increase of intensity of grass cultivation is the liberation of arable land area, this may alter the estimation. According to our calculations with the putting into intensive cultivation of 1 hectare productive, until now extensively cultivated ancient pasture a mass-fodder producing arable land area of 0,20-1,55 hectares may be liberated. In case of dry cultivation and with 200 kg/ha nitrogen fertilizer - including the relevant phosphorus, respectively, potash - the liberated arable land is free of excess cost of nutrients; above this, however, the income of plant produced on 1 hectare liberated arable land has at least to balance out - Ft 320-1590 in case of dry cultivation and Ft 4130-7480 in case of irrigation - increase of nutrient stuff production cost per hectare.

Considering the possibilities of grass cultivation development it may be stated that even a moderate development requires considerable input and, therefore, it is questionable whether the farms will be inclined to spend their narrowing down resources to the improvement of grass areas at the expense of arable land production.

ROTT, Nándor: Bevezető Harry Nyström Kreativitás és innováció c. könyvének magyar kiadásához. /Introduction to the Hungarian edition of the book "Creativity and innovation of Harry Nyström./ Budapest, Közgazdasági és Jogi Könyvkiadó, 1983. 208 p.

The book of professor Nyström is endeavouring to build the general theory of enterprise development on the interactive notion, respectively, phenomenon of creativity and innovation.

The work is first of all actual, because its author makes a difference between the relatively simple, little changing, stable and the complicated, quickly changing, unstable economic environments. It is not difficult to realize that since the world market price explosion of the seventies and in the wake of repeated economic and political shocks striking the world economy and amidst the waves of revolutionary technical development the unstable economic environment will further on be characteristic. To these two basic versions of environmental conditions two types of enterprises - position-maintaining and innovative ones - and the harmonizing enterprise organization and strategy correspond.

It is original his solution that he puts creatively in the centre of innovation and extends it to the whole of the operation of enterprise, of different solutions of organizational structure and strategy. In the approach of technician view of works dealing with innovation this fundamentally psychological category is, namely, mostly playing a peripheric role. This may play a valuable role in the orientation of the Hungarian reader, as we are though mentioning the creativity - certainly mostly as a motto -, but its coherences with the operation and organization of the enterprise had not yet been analysed with scientific claim.

In Nyström's model the innovative, position-maintaining and intermittent periods are more or less cyclically following each other in the course of enterprisal development, pressed by environmental impacts and in consequence of the change of reacting ability of the enterprise. It seems that also generalisable experiences underline that the development of enterprises is ensuing really in cycles of such boom-innovation and following stagnation-decline periods. It is also probable that in this a role is played by the concept, situation judgement, target setting of the executives of strategic decisions, that is to say by everything, which is summed up by Nyström under the title "Cognitive psychological approach of the formation of strategy". The modelling of the cognitive psychological elements of decision is, therefore, inducing to meditation. In our days both the scientists and researchers shaping the economic public opinion and those directing the economy policy are more and more decidedly emphasizing the significance of intellectual creative

work, economic management, enterprisal strategy, organizational and decision structure in the improvement of our national economy. Nyström does the same and tries to build up decisively from these factors the model of enterprisal development. His concise and sketchy synthesis contains necessarily a couple of open questions and many disputable or strongly problematic solutions. If the reader, discovering them, tries to find better solutions or inserting new, more realistic factors strives to transform the model, correcting it where he deems it necessary, then the Hungarian edition of the book has achieved an important goal. The exploitation of intellectual capital with innovative, creative thinking is, namely, today probably one of our greatest and most important development reserves. The considering and rethinking of the embedded enterprisal strategies and of the sketched coherences of relevant factors may be an important active force of the innovative creativity, we are so much in need of.

SEBŐK, Emilia - UJHELYI, Tamás: Mezőgazdasági termékek termelői és a felhasznált ipari eszközök mezőgazdasági beszerzési árainak nemzetközi összehasonlító elemzése. /International comparative analysis of producer prices of agricultural products and purchase prices of industrial instruments utilized in agriculture./ Budapest, AKI, 1983.

The most important statements of the research for the revelation of international price proportions are as follows:

The price level of wheat is approaching in the USA and E.F.C. countries, but the difference is still considerable. The average purchase price in France was formerly almost double of that in America, is at present only by 20-25 per cent higher. The price of corn is lower than that of wheat; the difference is essentially greater in the USA than in the Western-European countries; in 1981-82 the price of corn was 70 per cent that of the wheat in the USA; 98 per cent in France, 95 per cent in Hungary. The price of sugar-beet is 17-25 per cent of that of wheat in Western-Europe /was in 1981-1982 17 per cent in Austria, 19 per cent in Denmark and 20 per cent in the Netherlands/. In Hungary, the price proportion is more favourable for the sugar-beet /29 per cent/ and as the sugar content is lower, the difference in favour of sugar-beet is in reality even greater. The price proportion of slaughter animals is essentially more strongly diverging among the countries than that of cereals, because the animal husbandry technologies are different and from this divergent production costs are given and also the qualitative difference

is playing a role. The slaughter pig price was in 1981-82 generally 80-110 per cent of that of slaughter cattle /97 per cent in Austria, 86 per cent in the Netherlands, 110 per cent in Denmark/, in Hungary the price proportion is similar /88 per cent/. The slaughter chicken prices are around 50-80 per cent of the slaughter cattle, the spread is even higher than in the case of pigs. Remarkably high is the chicken price as compared to the average price of slaughter cattle - expressed the other way the price of slaughter cattle is low - in Hungary /81 per cent/, while it is 54 per cent in Denmark, 60 per cent in the Netherland, 64 per cent in France, 75 per cent in Austria. In the interest of the security of production, respectively, of the protection of producers the maintenance of stable price proportions are aspired at in exporter countries. The price proportion of slaughter pig and corn is in Hungary essentially more favourable for the pig than in Western Europe and the situation is similar in the USA. In Western Europe, importing corn in a decisive measure, the purchase price of 1 kg pig is identical to the price of 4-6 kg corn, in Hungary and in the USA the proportion is almost the double, 10 kg corn. There is a divergence not only in the price proportion but also in the change tendencies; in Hungary the corn has become cheaper in recent years as compared to slaughter pig, in the developed countries, however, the fodder has become more expensive. Also the slaughter chicken price is relatively high in Hungary; in 1981-82 the price of 1 kg slaughter chicken corresponded in Hungary to the purchase price of 3,4 kg soya-groats, in the USA only to 1,9 kg. The Hungarian price proportion is more similar to the Western European one /2,8 kg in the Netherlands, 2,9 in Austria/ and differs strongly from the USA, where the chicken is the cheapest compared to soya-groats.

The fertilizer prices have changed differently in recent years, the general tendency has been unfavourable for the agriculture; to purchase a unit of effective substance the sale of agricultural products of larger quantity is necessary. In this, beside the change of production costs and foreign exchange rates, also the sale policy of producer enterprises had a great role. In 1981-82 the price of 1 ton nitrogen active substance was equivalent in Western Europe to 3-4, in the USA to 2,5 tons of wheat, in Hungary in the average of 1980-82 the nitrogen was similarly cheap /2,5 tons/. The phosphorus active substance was in Hungary by 15-30 per cent cheaper compared to wheat than in the developed capitalist countries and essentially cheaper is in Hungary also the potash active substance than, for instance, in Austria.

The purchase price of agricultural machines compared to wheat is on the contrary, essentially cheaper in Western Europe than in Hungary, the price of a four-wheel drive tractor of 120 KW performance corres-

ponds in France to 230-320 tons, in Hungary to 620-740 tons of wheat, the price of a combine of 4,5 m cutting width is in the German Federal Republic equal to 315 tons, in Hungary to 730-840 tons of wheat. In the case of sugar-beet harvester the difference is smaller.

SOMKUTI, István: Vállalkozáson alapuló belső érdekeltségi rendszer a szentesi "Felszabadulás" termelőszövetkezetben. /Internal interestedness system based on undertaking in the "Felszabadulás" producers' co-operative in Szentes./
Budapest, AKI, 1983. 72 p.

The co-operative in Szentes belongs to the circle of farms that are initiating the improvement of the interestedness system. The target of these initiatives is such a transformation of the internal organization of the enterprise, in the centre of which stands the establishment of economic units of independent interestedness. These aspirations have in Hungary significant historical traditions, the application of stimulating wage and premium methods had an important role in the process, as a result of which the Hungarian agriculture had arrived at a prestigious level even if measured with international scale. We are witnessing a strengthening of these aspirations in the last years, special groups are spreading more and more, modern forms of partial cultivation appearing and self-accounting semi-independent units founded.

The "Felszabadulás" producers' co-operative in Szentes fits into this process on the ground of its initiative, but the concrete mode of solution /the so-called Szentes model/ is at present unique, differing from any up to the present.

The main aspiration of the leaders of the producers' co-operative is that the ability of working, the innovative creativity withdrawing to the "second economy" should promote the "first economy", that is to say that they want to create the conditions of the realization of entrepreneurial attitude within the organizational order of the co-operative. The "Szentes Model" is built on the hypothesis that a strong increase in performance may be achieved if it is made possible for the employees, their groups /who have not assumed market risks until now/ to enter an entrepreneurial situation, that is to say to perform activities on the basis of autonomous decisions, competing with each other, assuming risk the standard of value of which is the sale on the market.

The basic principle of the "Szentes Model" is that the units of co-operative property should be run, led by one person, who undertakes in the long run with responsibility the most efficient operating and

increase of it. The right of running the units of property is decided in public competitive bidding. The most efficient running of a unit of property in the long run is expressed by a fictitious capital value, the income bringing ability of the given unit of property. This capital value is made of two parts: on the one hand, the upset price, expressing the profitability expectation of the producers' co-operative, on the other, the amount of the highest bid made on the tender. The winning entrepreneur on the tender undertakes the payment of the interest of fictitious capital value thus formed. The amount of payment is given by the multiplication of capital value and the rate of interest of 20 per cent. The paid in sum is divided in two parts in the proportion of the upset price respectively bid. The former is augmenting the account of the producers' co-operative, the latter that of the entrepreneur.

On account of the size limits of the summary we are not presenting the whole of the "model", only mentioning that the mechanism of tender, realizing the basic principle, is completed by rules relating to lending, amortization, settlement procedure in case of failure by the entrepreneurs, their employment, wage and registration of their performance.

The study analyses the performance of entrepreneurs after having presented the theoretical model and the more important events of the annual operation of the interestedness system. Comparing the performance of those undertaking transport activity respectively poultry keeping with that of those performing the same activities under traditional interestedness conditions, it may be stated the "superiority", more stimulating character of the entrepreneurial system.

The final chapter of the paper sums up the experiences of the one year operation of the interestedness system. It may be told that the model, considered in the course of preliminary discussions by many to be unreal, is fit for life, working. The putting into practice of the theoretical model may be said to be successful. The supposition of the model that it assures for the entrepreneurs working in its framework a vigorous personal interestedness, has been proved acceptable. The effect of interestedness has unambiguously been proved /in economical material utilization, in the augmentation of their production, performance/.

In the frame of the model a rational mechanism void of subjective elements is operating, that is shown both in the revelation of real performances and in the selection process. Contrary to the hiring system, the entrepreneurial interest is not connected only with maximum of current output, but also with the maintenance of the long range ability of the unit of property /capital/ to bring income, because the venture is not for a determined time.

The period under review has also revealed certain problems. The

followers of the model could not resolve convincingly those misunderstandings in the co-operative public opinion, according to which the internal interestedness system offends the co-operative autonomy, is contradictory to co-operative principles. The relations of the entrepreneurs and those opposing the model are laden with superfluous temper, conflicts. Neither is the business federation of the outside relations of entrepreneurs solved, they are often in a squeezed situation, facing monopolist organization - in want of means of enforcement of interest.

The dissertation is demonstrating also the change, that has ensued in the standpoint of guiding organs in connection with the model. The initial support has given place to the disapproval of the spread of the model to further units, respectively, to the tax resolution which is unfavourable to the already operating units and holding back their performance.

At the end of our elaboration we argue that the present experiences are not yet enough to a founded appreciation of the model and we are proposing to create the conditions of a further progress.

SZABÓ, Márton: Piac, nyereség, vállalati célok. Egy tejipari vállalat példája. /Market, profit, corporate objectives. A case study of milk industrial enterprise./
Budapest, AKI, under edition, 110 p.

The study sums up the findings of the first period of a longer, to more food industrial specialized branches spreading research.

We have stated that the enterprise is depending on the decision of the trust in the most important fields of management /decision on development, size of participation fund, wage development/. It has practically to process a given quantity of raw material with a capacity structure for middle range to a product structure given by the needs of home trade and of partner enterprises. In the considerable sphere of production only the know-how of technical solutions is entrusted to the enterprise and it has only in the long run a possibility to some alteration of the product structure. One of the causes of this is the lack of self-financing capacity.

There is no drafting of independent enterprisal interest. The responsibility of the most important decisions is divided between enterprise and trust and thereby the responsibility of both is reduced.

The general form of the relation between trust and enterprise is bargaining, in which also the trust is depending on the enterprise of stable economic situation. From the bargaining follows that the enter-

prise cannot know the limits of its movement area, only feel them.

The target of the enterprise is first of all the meeting of its collecting and supplying obligations, the restful, continuous production without any chronic tensions. Against these the profit interestedness is only of secondary significance.

The main problem of the enterprisal interestedness is that the criteria of successful farming are not unambiguous, there are too many requirements, they are often modified and contradict each other, preferences are not yet cleared up.

The enterprisal strategy cannot be an offensive conception formed upon market impulses, but much rather a defensive conception born under the pressure of circumstances.

The enterprisal tactics are aimed at the accumulation of internal reserves in the interest of avoiding exposed situations. The aim of reserve accumulation is the increase of the flexibility of production, but they are not generally mobilized at the direct effect of market impacts but subsequent to outside restricting measures. The commercial activity represents rather the fulfilling of obligations, not a dynamic business policy. The satisfaction of consumer needs, the expansion of choice, the improvement of quality of its products are an economic interest of the enterprise in a measure in which they promote the desirable /not unconditionally the maximum/ level of profit. The sale of the goods of other enterprises does not influence direct the size of profit, is in this respect indifferent. A further impulse is given by the claim of the trust for the augmentation of consumption and expansion of assortments, in the supply province of the industry branch the supplying role, assumed by the enterprise, the requirement of the local party and council organs for a high-level supply.

On the basis of the survey of the consumer market of single product groups it cannot be stated that the market of the majority of milk products is a supply market. From the most modern, sought for articles a certain shortage may be experienced, on which the reserve of consumption increase is hidden; their weight is, therefore, much greater than their present share.

In the years under review the change of profit had been decisively influenced by the general and trust regulating systems and especially by the alterations in prices. The regulating modifications have in a significant part of the cases not mediated market effects. The enterprise could with its means /volume increase, product structure change, prime cost reduction/ at the most only mitigate the unfavourable effects.

The trust system of profit regulation:

- nivellates in a manifold way the performance of enterprises,

- creates basic interestedness,
- contains also subjective elements /corrections/,
- values the enterprises in part independently of their performance.

In consequence of all this its stimulating effect is weak, it is not in the interest of the enterprise to increase profit in a maximum measure, it is interested at the most in results of solid measure, smooth growth.

On the ground of our calculations, in the profit of the examined enterprise essentially less role is played by the favourable particularities than it is attributed by the regulating system of the trust.

We have stated of the role of profit in the enterprisal interestedness that

- a stable profit creates the possibility of restful work,
- an enterprise increasing its profit is able to build a somewhat larger development, participation base; the premium of leaders will be greater,
- the enterprise and its management with outstanding profit have a prestige within the branch and local environment.

The raise of profit above a certain level is not anymore in internal aim of the enterprise, but rather an outside one, first of all on the side of the trust.

The stable, high profit is, however, connected with disadvantages, too. Some production political and operative decisions of the trust may, therefore, afflict the enterprise under review, because its profit can tolerate the burdens.

SZEDERKÉNYI, Ervin: A burgonyatermelés helyzete és a kibontakozás lehetőségei. /Situation of the potato production and possibilities of development./

Gazdálkodás, Budapest, 1983. No. 4.

The concerns connected with the potato branch are breaking forth since the end of the sixties up to our days with irregular cycles, almost with elementary force. In the first quarter of the seventies ensued a radical change - as an effect of very considerable and without doubt successful measure of the authorities. The change of species had taken place, the large-scale farms undertaking potato production had received technical means and technologies of modern large-scale production with significant state subsidy. The result had not lagged behind, because where the new production technology was consistently applied, the average yield grew rapidly. There was, however, a price to pay: the new

means of production, the increased use of chemicals have strongly increased the production cost per hectare. This was at the beginning balanced out - beside essentially unaltered collecting prices - by the growth of average yields and it seemed that the branch is a stimulatingly profitable one.

The production costs leapt by 1975, however, so high that with the crop outputs at that time and taking the peculiarities of the branch into consideration, the production of potato had become in many farms hardly profitable or even loosing. The agricultural farms reduced - as a natural attitude - or - if they could - stopped the production of potato. It follows of this that the output of the reduced production area in 1976 was not enough to satisfy the need at that time and in want of other possibilities edible potato had to be purchased with grave foreign exchange sacrifices from capitalist countries.

The authorities raised the state producer price in the autumn of 1976, as an effect of which the production mood and accordingly the sowing area of potato had significantly increased.

Since the bottom of the potato production in 1976 - although the collecting prices remained later below the average state producer price of 1976 - there were no supply concerns, what is more, in some years even the rational disposal of output surpluses exceeding need caused problems.

A similar economic situation than that in 1976 developed in the year 1983. It seems that only at the price of extraordinary high standard and quality discounts - harmful to consumption - will the satisfaction of the need of population be ensured up to the crop of 1984.

The costs of the large-scale farm production, building the basis of supply, have rapidly grown. A decisive part of these - price growth of machine, energy and chemicals - may be parried only to a minimum extent by the producers. Also the tendency of the growth of average yields has strongly been moderated. The cause of this is that a hardly profitable, what is more, in the latter time unambiguously loosing branch is not induced to develop technology that requires unconditionally financial resources.

The sowing area of 1983 will at any rate further decrease if there will be no change in our production policy. It is necessary that the income should be stimulating in the average of several years, of which the branch can renovate itself with a realistically expectable output level. In the interest of this producers have to augment the average yield and improve the quality, and the share of productivity would have to approach 90 per cent. It is imaginable that potato would be - like other vegetables - a product of free price. Then, the price could be differ-

entiated according to quality, the market mechanism could operate well. Producers would be interested not only in the quantitative but also in qualitative production. There is a need of the modernization of circulation, too. A healthy competition should be formed - in favour of the consumers - among the distributors. If we do not yet consider the free price distribution of potato timely, then from year to year we have to reconsider with circumspection - and if unconditionally necessary to change - the producer and consumer prices to balance out the inevitably following cost increase, respectively, that it could be counted on a realistically expectable output growth. A fluctuation of outputs between years /on account of our climatic particularities/ may further on be taken for sure. The rational disposal of possible output surpluses is to be solved, even by intervention purchases, for which a financial basis is to be created. It is further imaginable the sanctioning of unjustified production increase, too. Without solving these problems the economic position of the branch will further on be expected to fluctuate cyclically.

SZÉNYAI, Lászlóné: Az élelmiszeripar fejlődésének és strukturális változásainak főbb tendenciái 1971-1980 közötti időszakban. /Main tendencies of the development and structural changes of food industry in the period of 1971-1980./
Budapest, AKI, 1983. No. 10. 147 p.

The end of the fifties, respectively, the beginning of the eighties have brought a change in the economic life of the world and within it in that of our country. With the fifth Five-Year Plan a development era had actually closed down. During the sixth Five-Year Plan our economy has to proceed more and more in a new course of growth. The roots of the problems are, however, always in the past, therefore, the assessment of the previous period and the summary of experiences of it are fairly necessary. Starting from this hypothesis we have looked back in our study to the development of the food industry and of all its branches during the decade of 1971-1980.

In the course of the survey of the growth of production it has become unambiguous that while in the special branches of food industry the gross production value has altered contrary to plan - and especially to the fourth Five-Year Plan - although increasing continuously, the net indices of production /added value, net production value, net income/ have decreased in the course of the period, first in a less measure, later unambiguously and vigorously. This fact is due to the value-

building prevailing in the national economy, respectively, to the price proportions, because the value of net indices of production is a function of the value-building respectively of price system.

The analysis of the structural changes of production has been directed on the one hand to the revelation of the division and changes of the food production according to the processing of the two main groups of agricultural basic materials - vegetal and animal products - on the other of the movements of the shares of single special branches within these two main groups, further of the harmony of the raw material quantities placed at disposal by agriculture and of processing capacities. Contrary to the concept of the plan, the weight of the special branches processing animal products has increased - in rough harmony with agricultural production - in a very small measure /except milk industry/, the weight of special branches processing crop products has, also to a small extent, decreased, whilst the production of certain crop products has much more vigorously increased. Consequently, in more cases tensions have arisen on account of the lack in capacity harmony between producing and processing plants /for instance in vegetable oil industry, sugar industry, crop and conserve industries/, but their relaxation - except crop and conserve industries - has continuously taken place. In these latter two special branches the creation of harmony is the task of the next period.

We have ranked to the strengthening factors of the qualitative side of production the innovation processes presenting themselves more and more vigorously and marked by the change of processing grade, the introduction of modern production lines and the increase of the number of yearly appearing new products. The last years reflect the speeding up of these processes although the possibilities are not at all exploited in this field. We will touch upon the obstacles of the regulating system in the next part of our analysis, directed to the revelation of the coherences of the profit-shaping and regulating system.

Determining factors of the results achieved in enterprise management are quantity and composition changes of the inputs spent in the interest of development. We have correspondingly examined the coherences of inputs and outputs. We have estimated as inputs the quantity and composition changes of both fixed and current assets bound by the production and that of live and objectified labour.

We have analysed separately the tendencies of the change of fixed and current assets. The fixed asset stock of food industry has in the decade under review continuously - although in a rather divergent measure - increased; in the first period of the decade slower than the growth of production value, in the second to an extent exceeding the gross pro-

duction value. Some specialized branches could develop during both plan periods more vigorously than the average/e.g. meat industry/, others with an essentially slower rhythm than the average /e.g. tobacco, conserve industries/. Originating from the difference of the development necessity of some special branches /from the side of raw material/ and the national economic and enterprisal development possibilities, the fixed asset stock of the meat, milk and vegetable oil industries increased the most vigorously up to the end of the decade. The poultry industry had surpassed by far the average growth rhythm and the sugar, sweets and cold-storage industries were even higher.

The growth of the gross fixed asset stock was without doubt one of the most essential but not the sole determinant of the increase of production. Within the gross fixed asset stock a significant factor is the proportion of the net value of stock of means, that is to say, the grade of the wear and tear of means, further the material-technical composition of the stock and the dynamics of its change. Examining both factors we have stated that the grade of wear and tear of fixed assets has improved very slowly, by 1-2 per cent yearly, having changed from 60 per cent to 72,1 per cent relating to socialist food industry, beside a special branch dispersion surpassing 25 per cent point. We have illustrated the tendencies of change of the technical level by showing the proportion of machine fixed assets. In the last decade this proportion may be judged as slowly rising /from 39 per cent to 43 per cent/, and compared to the industry /from 47 per cent to 50 per cent/ - taken in its totality - as low.

When estimating the input of means we have touched upon the change of lastingly bound current asset stock, as it is an essential element of the utilization of means, its lasting increase debiting the development fund, and the increase of which is not justified by the expansion of production in the case of each of the industry branches.

After this, we have analysed the live and objectified labour inputs. The most exact measuring figure of the live labour input is the number of employees and its change, further the shaping of the physical and non-physical proportion of the employees. The number of employees grew in the first years of the seventies almost smoothly - by about 2 per cent annually - totally by 15 thousand heads. In the second half of the period under review the number of the staff rose first slowly, then somewhat more vigorously and was reduced in the last years of the plan period again to the 1975 level. From the specialized branches the number of staff rose more dynamically there, where new capacities entered owing to relatively larger developments; on the contrary, in some spe-

cialized branches the reduction of staff depended in part on the replacement of physical work by machines; it is rather the consequence of the harsh circumstances existing still in some specialized branches of food industry and of the labour movement owing to the lower income possibilities than the industrial average in general.

The change of objectified labour input is a determining factor of food industrial production, as its proportion is more than 80 per cent of the total inputs and its proportion compared with the total costs was almost unaltered in the period under review. As regards the whole of food industry, the objectified labour input grew in the first half of the examined period slower than the live labour input, more rapidly at the end of the period, that is signalling that we have entered from the extensive period of production into the intensive one. Further on, we have analysed the tendencies of the change of material claims in the specialized branches and its causes, emphasizing the tendencies of material utilization of agricultural origin, of energy cost and of import material utilization.

The indices of net character, used for the analysis of the coherences of inputs and outputs and signalling efficiency, are - on account of deficiencies in our price system - appropriate only to compare specialized branches among each other. The indicators of efficiency are better than average in the economically exporting /e.g. corn, vegetable oil industries/ and consumer good producing tobacco, refreshment drinks, sweets and alcohol industries of positive budget balance.

We have worked out and valuated for the measurement and analysis of efficiency the so-called complex and partial efficiency indices; further on the indicators of work productivity, of providedness, usefulness and exactingness of means.

The work productivity grew continuously during the examined 10 years and while the growth of production originated in the first 5 years under review by 76 per cent from the increase of work productivity and by 24 per cent from that of the number of staff, in the second half of the period under review the growth of production came totally from the increase of productivity. The indicators of the usefulness of means deteriorated during the examined period - especially in the second half of it - the exactingness of means rose parallelly, which is the consequence of the technical development of not satisfactory level beside many other factors of work organization, of organization-system and others impeding the usefulness of means and not assessable numerically out of balance data.

All in all we may say that the food industry has complied in general with the requirements set by national economy - especially as regards

the quantity of products - together with the development of the agriculture and based on it in the majority of specialized branches. Also the structure of consumption has favourably changed in the last 5 years in respect of the fullest possible satisfaction of biologically optimum needs, that is to say the consumption of products of animal origin has increased, that of cereals diminished. The protein quantity consumed by the population has increased by approximately 5 per cent, within it the quantity of animal protein totally by nearly 13 per cent beside a decreasing carbohydrates of 3 per cent.

In certain field, however, we could not raise either the quantitative requirements to the planned level /for instance in vegetable and fruit consumption/. What is more, even at the end of the fifth Five-Year Plan such long known and chronic structural problems of the food production could not be solved, that would serve the satisfaction of higher needs of consumers and a better than hitherto utilization of the prosperity possibilities of export markets. We will revert to the details of these in our study dealing jointly with the coherences influencing the productivity of food industry and being in connection with the economic regulation.

The structural change of food industry
in the seventies

Figure 1.

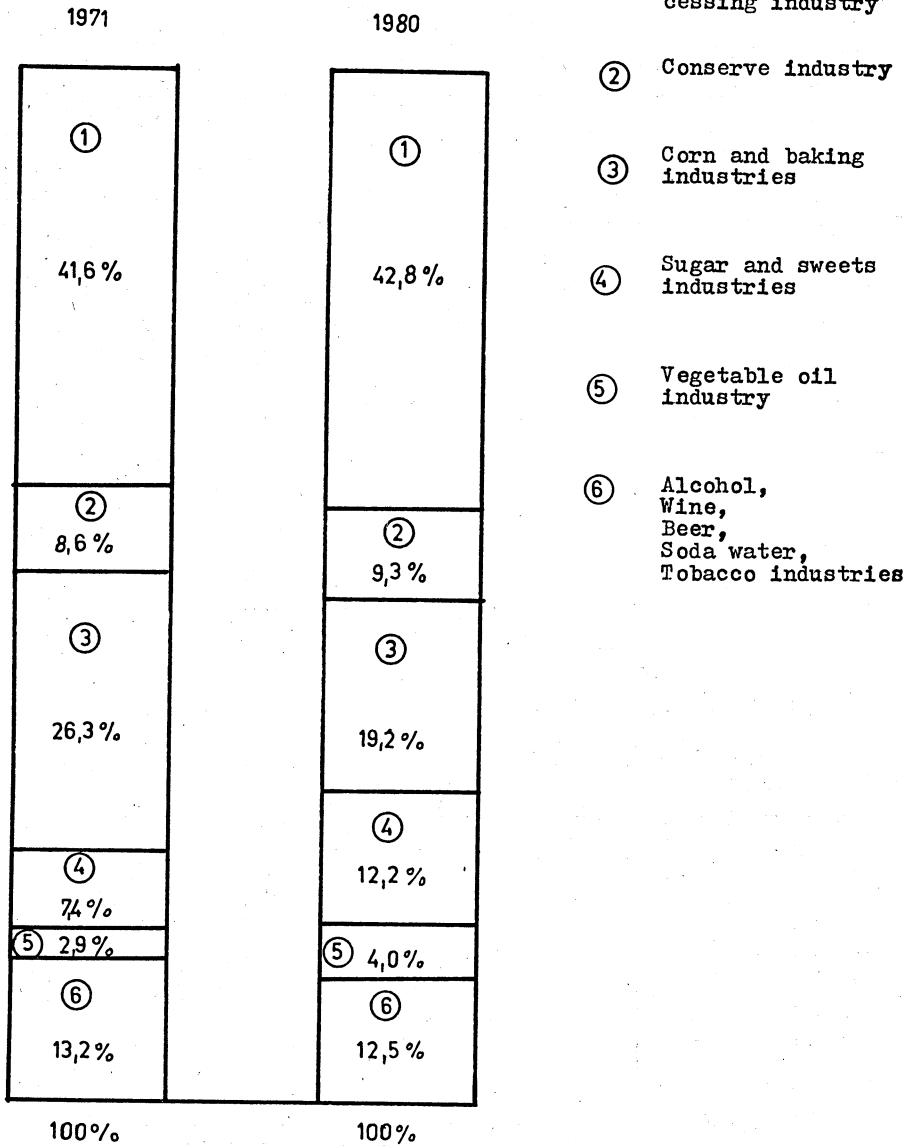
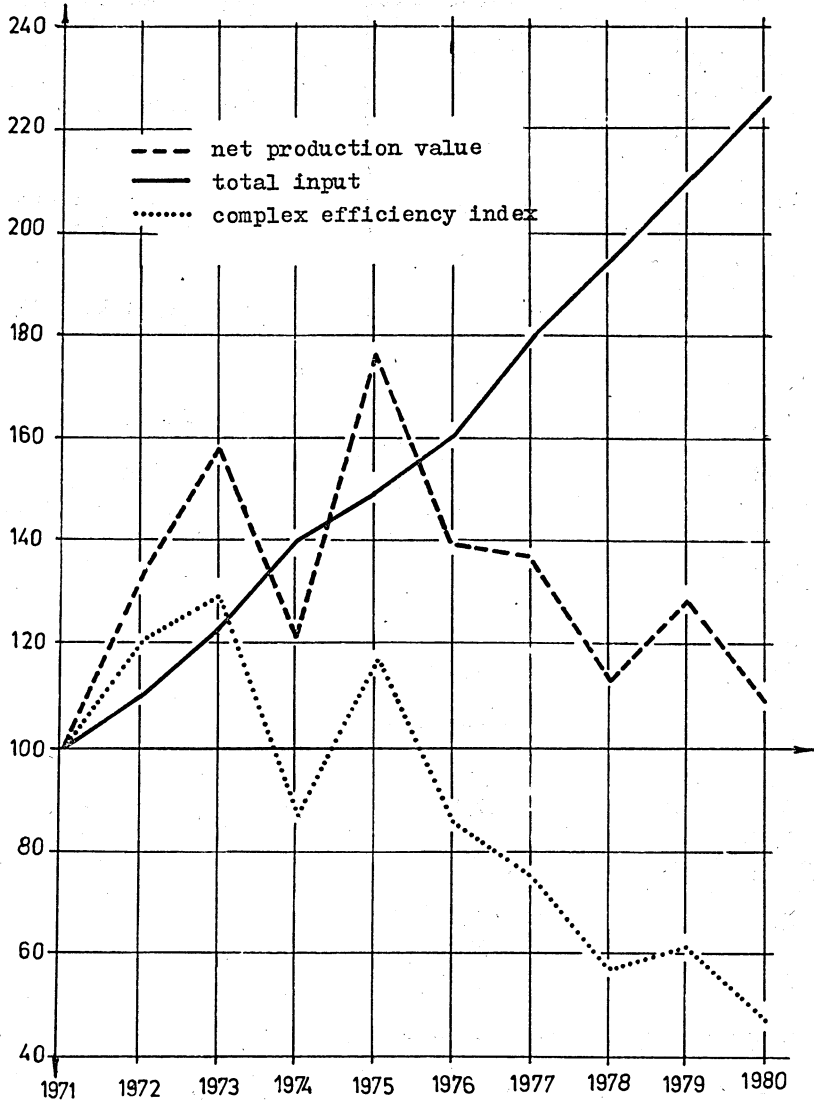


Figure 2.

Shaping of production, resources and efficiency
in food industry



SZIJJÁRTÓ, András: Az innovációs folyamatokat befolyásoló vállalati feltételekről. /Conditions affecting the innovation process in enterprises./

Gazdálkodás, Budapest, 1983. Vol. 27. No. 7.

According to our opinion all such new or developed solutions are to be considered an innovation, which did not exist in the given farm /enterprise/ and which has brought success after having been realized, introduced. The innovations of agricultural enterprises may be realized in manifold forms /for instance, introduction of new products or services, market research and diversification, application of new technical means, technologies, making use of new materials, energy carriers, establishment of new buildings, constructions, application of new plant, respectively, animal species, modernization of enterprisal organization and of internal mechanism, etc./. All this may be realized as a result of enterprisal /technical/ development, of the innovation movement or even of the independent sphere of activity initiative of experts. These three domains of the innovative activity exist at the same time, supporting and complementing each other in the practice of the enterprise. We could express it that these are so-called innovation routes, the input of which is the idea, the output on the other hand the realized, successful initiative. These routes, processes may be divided into periods: 1. birth of the idea; 2. decision preparing, proposal period; 3. decision; 4. implementation; 5. measuring of the success. In the enumerated process periods - practically amidst the "individual development" of the innovation - there are many important conditions acting. We have come in the course of our research to the conclusion that in each of the process periods 1. informational; 2. organizational; 3. material; 4. personal; 5. interestedness and 6. objective conditions may be interpreted.

The empirical researches have had - on the basis of the sketched methodological approach - the target to examine in which process periods and on the impact of which internal enterprisal conditions are slowing down the innovative processes.

The researches until now seem to certify the hypothesis that non-material conditions have a considerable influence /braking/ in the successful, scheduled realization of new, progressive initiatives, developments.

We are presenting below some impeding factors taking place within the enterprise very frequently.

- only high-level leaders, respectively, experts working in the centres of farms are able to get informations about new professional

results, solutions,

- experts are materially not or only scarcely interested in looking for new solutions, the majority of them seeking new but from affection for the profession or desire of creation,
- the organizational framework of research and development is casual and not yet developed in agricultural enterprises,
- the decisions for innovation are made in a significant measure at higher level and more exclusively than justified,
- the efficiency of decisions is impeded by the absence of competent experts /giving ideas, making propositions, implementing/,
- the implementation of innovations are unorganized, therefore, the co-ordination of simultaneous developments requires continuous operative interventions of higher level,
- the measuring of the success of innovative activity is not, or only belatedly performed,
- in the promotion of leaders, experts the susceptibility of the new, the inclination for initiative play at present a smaller role than they should.

SZOLLÁR, Györgyi: A mezőgazdasági ár- és költségviszonyok alakulása az 1970-es évtizedben, összehasonlítva világgiazi tendenciákkal. /Formation of agricultural price and cost relations in the 1970 decade, compared with world market trends./
Budapest, AKI, under edition

The changes of the world economy in the seventies, the energy price explosions in 1973 and 1979, etc. have started a couple of structural transformation processes. The production of energy and raw materials as well as the importance of agriculture have received higher appreciation. Food has become a strategic article, though its exchange proportions have deteriorated against the energy carriers. In the formation of the foreign trade balance of Hungary the shaping of agricultural and food industrial export has since long played a great role. For instance, in 1979, 25 per cent of the Hungarian agricultural production could be sold in foreign markets. The foreign trade balance of the branch was active by 35 billion Forints. Although the world market price of agricultural products rose in the seventies very considerably, the price level of agrarian products was still lagging behind that of the energy carriers, and compared with the price of industrial finished goods of leading technical level, was formed unfavourably, our exchange proportions had deteriorated.

In the seventies the culmination of the growth of world market prices of food coincided with the oil price explosion, with the overturn of value proportions. After the following short-stop the prices rose only with a slower rhythm on account of the decrease of world market buying power. All this was influenced by the fact that on the solvent markets self-sufficiency increased, the support of agriculture, the maintenance of inland food prices at a low level and thereby the braking of inflation entered the centre of the economic policy of governments.

The importance of the topic is emphasized by the acknowledgment in the whole world of the extraordinary development and dynamics of the Hungarian agriculture, further by the fact that without a systematic growth of the export surplus of the food industry the deteriorated international balance of the Hungarian economy cannot be restored within a reasonable time. /This must not, however, be overestimated, neither underestimated/ neither is the solution of all problems of the national economy to be expected from the export surplus of the food industry.

In our study we are following up the changes of the relations of price and cost of the seventies in the Hungarian agriculture, on the world market and in some Western European countries.

Taking the aspects mentioned above into consideration we are looking for answers mainly to the following questions:

- What relationship may be ascertained between the formation of inland and export prices. How do export prices mediate foreign effects towards the producers, taking into account that the supply obligation of the agricultural production is an important socio-political aspect and the formation of prices is strictly connected with the realization of political goals of level of life. In other fields of the national economy the co-ordination of inland and world market prices is already in a more advanced state, though beside positive results also many problems present themselves in these fields, too.

- How is the formation of the cost relations of the past ten years reflected in the prices and in what direction influenced this the rentability. In what measure have prices given orientation to right economic decisions, in what measure have they been modified by the state and what income could be ensured thereby.

During the seventies the Common Market agrarian producer prices rose to almost 2,5fold, whilst the inland state collection prices to only 1,5fold. Consequently, the annual average growth rhythm was in the former case 9,2 per cent, against the inland 5,7 per cent. Neither the Hungarian state collection prices, nor the Common Market producer prices are following the large fluctuations of the quoted Exchange prices, but while the Common Market prices are placed above them, the Hungarian

state collection prices had remained always below the quoted Exchange prices, the Common Market producer prices and the Hungarian export prices.

The effect of the world market impulses, valuation on the state collection prices and thereby its mediation toward the producers is of not satisfying measure. It may not be expected that our prices should follow up foreign market changes in every minute, but the following and mediation of fundamental tendencies toward producers is indispensable and also the quickening of the reaction to this is necessary.

The reaction to price changes in increase of volume was in the period under review in Hungary and in the Common Market countries more vigorous in animal husbandry than in crop production.

The price alteration of the elements of producer utilization shows in Hungary a similar tendency to the Common Market with the deviation that these alterations are taking place owing to price regulations in our country not continuously but gradually as a consequence of our cost-following price mechanism. The reaction to the world market price explosion, that is to say, the price change of the elements of producer utilization calls our attention to the differences of the industrial background of agriculture, too, and thus, where there is a strong and world-level industrial-technical basis, it was possible to put on the brakes to the price growth of the elements of producer utilization even under such world-economic circumstances.

The survey of the harmony of input and output price changes has shown that in the Common Market countries the price increase of the end-products covered until the second oil price explosion the price increase of producer utilization, but thereafter the price of the elements of producer utilization grew quicker. The increase of the net production cost could be ensured by such input, output price change only in France, and also in the German Federal Republic aspirations were directed to this end. In Hungary the price increase of end-products was always bound to the raise of import prices. The aim of price regulation was not the increase of net production value, but the stopping of the decreasing process, respectively, its turning back, because that jeopardized the maintenance of production interest, respectively, the necessary increase of production.

The relation of the gross production value ensuing from the basic activity and net income shows that while in the Common Market countries the gross production cost is followed by the growth of net income, in Hungary the continuous, smooth increase of gross production cost is accompanied by a large fluctuation of net income and it may be proved

that the net income started to grow only at the time of price regulation, but this increase turned within 1-2 years to decrease.

The study analyses the following questions:

- coherences of export and state collection prices;
- our price proportions and the valuation of the world market;
- realization of the effect of prices and price proportions on production;
- directions of the changes of purchasing and selling price proportions and their income-forming role;
- the connection of net income and production growth.

The main conclusions to be drawn are:

Our internal price proportions hardly changed owing to the minimum alteration of the state collecting prices during 10 years, respectively, they returned after some smaller movements to the proportion of the beginning of the period. In our export prices the price proportions are showing large fluctuations on account of changes of export prices.

The prices of end-products have continuously grown in the Common Market countries, while in Hungary, the rise of state collection prices has taken place as a push following the price changes of the elements of producer utilization.

From the comparison of the growth of gross production value and net income it may be stated that while in the German Federal Republic and Hungary the growth of net income is not following the rise of production, a vigorous fluctuation may be experienced with decreases of great measure, in France the increase of net income goes always hand in hand with the rise of production. /This shows the theoretical prevalence of the guarantee of income./

TEKNÓS, Péter: A kiegészítő tevékenység szerepe a mezőgazdasági nagyüzemekben. /Role of complementary activities in agricultural large-scale farms./

Lecture held on the 7. June 1983 on the scientific conference of the Tyimirjazev Agricultural Academy in Moskow, under edition

After the introduction of the 1968 economic reform the production of the branches beyond basic activity started in agricultural large-scale farms a rapid development.

The development had been made possible first of all by traditions. In the villages, agricultural small and large-scale farms alike food industrial processing, transportation, handcraft had been dealt with. The existing abilities and accumulated experiences contributed to a

rapid graining ground of traditional peasant auxiliary activities.

But the shaping of varied activity forms has been accompanied by another kind of development: the interenterprisal integration and co-operation directed by the market. These processes comprised in the first step food processing and product distribution. In the second step the enrichment of activity forms had spread to the manufacture of means of production, to the sphere of repair and service. In the third step - beyond the satisfaction of the needs of food economic sphere - a part of the large-scale farms reached the total enlargement of the sphere of activities, which means that the creation and maintenance of all other industrial and servicing activities is justified, if in the given farming unit

- it serves the full employment;
- the full labour force need will be met this way at the time of work peaks;

- it is connected with continuous returns and thus enhances the liquidity of the enterprise;

- it increases the total profit of the enterprise.

It is understandable in the light of the above that between 1970 and 1981 in the agricultural co-operatives against a growth of 73 per cent of the agricultural production that of the industrial branches grew by 264 per cent, within it that of the food industry by 234 per cent and the activity of trade by 159 per cent.

The activity beyond basic activity - first of all those far from agriculture - is regionally very unequally divided, as 52 per cent of the price income of the industrial branches falls on three counties out of the country.

The complementary branches are playing a very important role also in the creation of net income for the farms. For instance, in 1980 in the industrial branches /except food industry/ an average security amount of Ft 59,0 fell on Ft 100,0 accounted production costs, as against Ft 23,0 in the agriculture. Though the rentability of both the agricultural production and the industrial activity has deteriorated equally since the middle of the seventies, this negative process has less influenced the industrial branches. The examinations of the efficiency of means have brought similar findings.

The creation of auxiliary plant units, the rapid growth of their production had been made possible by other factors, too. The co-operatives disposed - contrary to industrial works - of many advantageous conditions. They had unoccupied, in a cheap way transformable buildings. In the wake of the mechanization of crop production and in part of horticultural branches a numerous, above all feminine labour force had been freed, who had to be, however, engaged in consequence of the ownership

character of the co-operatives. A similarly important factor was the lower wage level of skilled workers in the region far from industry centres. An almost unoverlookable advantage in the settlement of auxiliary plant is meant by the less strict environment protecting rules.

The auxiliary plants of co-operatives - and this is may be the most important - may be considered such flexible small and medium-scale plants of changeable profiles that quickly react to the needs of the market and are missing or at least had been missed until 1982 almost entirely from numerous branches of the Hungarian industry. The rentability of agricultural branches has been reduced, the reserves mobilizable in basic activity are almost run out, since 1979 the farms can especially difficultly obtain development means. The attention of the co-operatives has understandingly turned toward auxiliary branches, that could ensure a larger net income for them.

The economic guidance has supported - in a necessity - the pragmatic solution that the agricultural plants should make use of the income produced in branches beyond basic activity, first of all in industrial ones to maintain at level, may be to develop the stock of means of the basic activity. This principle had been raised to the rank of official economic policy especially in connection with plants of unfavourable qualities forming one third of the co-operatives.

TOMPA, Béla - SZAKONYI, László: A vállalati differenciáltság vizsgálatának módszerei és eredményei mezőgazdaságunkban. /Methods and findings of the study of enterprisal differentiation in agriculture./

Közgazdasági Szemle, Budapest, 1983. 30. köt. No. 5.

The relatively large number of enterprises operating in agriculture, their divergent natural and economic circumstances, very different production structure have stimulated for more than two decades the researchers to build homogeneous groups of enterprises.

This topic has been dealt with by numerous excellent representatives of inland and foreign agrosience.

The present researches are of several directions. The arrangement according to the size of gross income per head is held the most appropriate for the formation and alteration of the taxing system and other regulators. Elsewhere the coherences and interactions of specialization and production results are analysed. A very great role is unalteredly attributed by economists to the coherences of company size, efficiency and success.

We have tried to enrich all this by the examination of multivariant regression functions. The applied procedure is based on the hypothesis that there is a tight connection between production resources and results /respectively, between the indices reflecting them/, that is to say the production results are even there the most favourable, where they are achieved with the possible smallest input of resources.

Method of calculation

We have performed the ranking of farms making use of data of individual farms and of estimated equations on the basis of the following quotient:

$$\frac{|y_{ik} - \hat{y}_{ik}|}{y_{ik}}$$

k = 1,131 = state farms

k = 1,1350 = agricultural co-operatives, where

y_{ik} is the k-th real enterprisal value of the i-th index

\hat{y}_{ik} is the k-th estimated enterprisal value of the i-th index.

On the basis of the value of these quotients per enterprises we have performed the ranking in two steps.

a/ first the ranking of farms has been performed separately on the basis of four efficiency indices,

b/ then according to the average of four results indicators the procedure was as follows:

$$\frac{\frac{1}{4} \sum_i \frac{y_{ik} - \hat{y}_{ik}}{y_{ik}}}{\frac{1}{4} \sum_i \frac{y_{ik}}{y_{ik}}} = \frac{\bar{y}_k - \bar{\hat{y}}_k}{\bar{y}_k}$$

The quotients received by the above formula were ranked in diminishing sequence, that is the farms of the best efficiency were placed best, obtained the highest serial numbers.

The result of the calculation has greatly verified the hopes. The value indices, which may be taken into account in respect of efficiency, namely:

- the regional productivity /gross production per unit of area/,
- the work productivity /gross production value per one labourer or accomplished work hour/,
- the efficiency of means /gross production value per unit of fixed and current asset/,
- the input / output quotient /expenses incurred and output of production

may raise in themselves many problems of principle and methodology. In the case of index a/ it is dubious that the whole agricultural production or only the output of crop production should be compared to the

arable land. In the case of index b/ especially the quantified content of the denominator is disputable: number of staff or accomplished working time? In the case of index c/ we have compared static means indicator with gross production. In the case of index d/ index methodological problems arise. There is, namely, no cost index in the accountancy, which could be set against the gross production value.

It was a problem that the change of indices has in recent time been of contrasted direction.

There is no possibility to create groups that can be put in unobjectionable systems in every respect. But on the ground of the joint examination of more aspects or may be of the results and inputs of more years we may draw more reliable conclusions of the quality of farming.

We have taken the joint result of more characteristics in the procedure, that will be made also numerically known later on. Five independent /explanatory/ variants, the expansion and quality of land area, the value of means, the net production cost, the net material cost and total working time as well as four dependent variants /plant., resp. unaccumulated production value, gross income, net production value/.

On the basis of equations supposing linear coherences we have divided the estimated value of indicators by the real value per farms. We have ranked the farms in the decreasing sequence of the quotient thus obtained one by one and in average according to the results. This procedure was based on the hypothesis that the efficiency is the most favourable there, where the four results had been produced by making use of lower than average inputs and resources and more unfavourable, where the unit of result /gross, unaccumulated, net production/ had been reached with an input higher than average.

Our hypothesis has been verified, as:

- the ranking according to regression function coincided with other indices of the quality of farming, respectively, with groups of efficiency order of rank composed in an other way,

- the outside values of groups ranked according to the regression function showed a larger deviation than groups of farms composed in an other way.

Difference of production structure

From the data, ranked and grouped with regression calculation, the two outside ones, the group of the worst and the best are worth introducing.

Going from the group of the lowest level efficiency toward the higher, the role of non-agricultural production is gradually growing. Nearly 90 per cent of the gross production of the lowest group originated from agricultural production, while in the highest group only 28 per

cent. /In the division of the price income per branches there is a similar proportion./

Also in the structure of crop production are there very considerable divergences among the groups. In the worst group more than half of the price income was given by cereal and this proportion decreases going up in the order of rank /we mention that not, however, the proportion of maize/. Similarly decreases the role of industrial plants and fruits in the price income. On the other hand, the significance of potato, vegetables and vine branches is growing. In the group of the best, these three branches have given one third of the price income, in the lowest, however, only 13 per cent.

The structure of animal husbandry shows even more definite divergences, than that of crop production. Especially, the collation of the cattle and poultry branches. 60 per cent of the animal husbandry price income of the lowest group came from the cattle branch. The same was the weight of the poultry branch with the best. The other side of this coherence is also true: in the group of the weakest the poultry branch represents only 13 per cent, in that of the best the proportion of the cattle branch was of similar measure. This cannot be said of the pig keeping, the proportion of the price income of the branch is fairly equalized, between 15-30 per cent.

Difference of production results

In the lower group of agricultural co-operatives, ranked on the ground of regression function the production is less intensive. The input is less - the cost per one labourer is half of that in the topmost group - but the outputs of crop production, the density of animals and the product of one animal unit are also low. Except the fruit production, in other crop production branches the value of product quantity obtained from one hectare sowing area is doubling between the two outside groups. In animal husbandry the extremities are not so great - especially in cattle breeding - in pig and poultry keeping, however, are of 50 per cent.

The correlation of the production per unit of area is giving an unfounded result, as in the highest groups a good part of production is connected not with agriculture, with the arable land. The price income of agricultural products per area is significantly spreading, is Ft 11 000 in the lowest and Ft 36 000 in the topmost. The gross production value compared with the number of engaged shows a twofold difference and also the productivity measured by accomplished working time is similarly spreading. The difference of the efficiency of means is threefold, but in this the far greater proportion of non-agricultural production of lower needs of means in the good farms belonging to the topmost group

plays a role.

In the good farms the recovery of cost - despite a higher level input - is more favourable. The divergence of the amount per labourer of net production value /gross production - current input + difference of amortisation/ is threefold. The net production /the new value turned out/ covered in the lowest group only the wages and in the next decilis contained only in 25 per cent net income, while in the farms of the uppermost group only 40 per cent of it was paid for wages.

Efficiency divergences

Previously it was said that the productivity of live labour was on the basis of regression function in the farm belonging to the weakest group only half of that in the topmost group. In the efficiency of fixed assets the differences showed about threefold value. We have computed also an efficiency index, in which we have presented jointly the live and objectified labour inputs. We have taken into account besides such a complex indicator, where the value of land was also considered.

According to the indices the efficiency spread of the outside groups is much more obvious. Especially the result indicator, as in the first group the year of 1979 had been closed with a loss. At the same time in the topmost group 40 per cent of the complex inputs had been made by the profit and it reached even 36 per cent of the inputs increased by land value.

In the farms of the lowest group the net production formed 40 per cent of the complex inputs and 30 per cent of the inputs increased by land value. The production of the topmost groups surpassed the complex inputs, what is more, even the value of the inputs increased by land value.

It is obvious that the consideration of land soils in efficiency calculations even more the result of the weak against the good ones. This is to be explained by the fact that although in the farms of the lowest group the quality of the land is weaker, the arable land per labourer in agricultural production is larger and the production is much more bound to the arable land than in the enterprises of the uppermost group.

Difference of development possibilities

In the upper group of the producers' co-operatives ranked according to regression function the providedness with fixed assets - as compared to the arable land - is lower. This is also to be explained by the significant proportion of non-agricultural production. The technical equipment of live labour is lower, too, which is the consequence of sometimes less need of fixed assets of non-agricultural production. The group of better farms disposed, however, of essentially more current

assets /mainly material/. The farms of the lowest group have reserved only 6 per cent of the gross income for development, and because in this group the gross income is anyway low, the development amount per one head was in 1979 only Ft 16 000. The good ones developed by 17 per cent of gross income, the amount of which per head having been Ft 26 000. The value of operative fixed asset stock - compared both to the land and to the number of employees - is in the higher group of less value, at the same time owing to more favourable development possibilities, the value of investments is in the upper group higher. In the topmost group the value of investments per employee was in 1979 already by about 30 per cent more than in the first. As compared with the value of operative fixed assets, therefore, the invested amount is even more favourable.

The determining weight of co-operatives and state farms in the agricultural production demands that the coherences of the means of production and production efficiency should be presented more and more shadedly in the future, that we should call the attention to the awkward factors hidden in farming regulations and possibilities, and that we should show the road to a better, more effective state intervention.

Summary

The ranking of agricultural enterprises according to economic efficiency, built on more objective, shaded differentiative value indices with the help of mathematical model is a tool to reveal the causes and consequences of differentiation.

The economic indicators that may be taken into account in respect of economic efficiency; the so-called regional productivity, the productivity of work, the efficiency of means, the production level /intensive farming/, the quotient of input-output are raising such theoretical and methodological questions, the utilization of which influences the sequence of efficiency. These are:

- may the comparison be performed with the whole agricultural production or with a given quotient of it in the case of the so-called "regional productivity",
- the economic content of the denominator is disputable in respect of work productivity,
- what impact may have the static characteristics placed in the time-dimensions of fixed and current asset stock on the index of efficiency of means,
- may the content circle of the so-called "tightened production cost" mean a methodological problem with respect to input-output quotient.

The systematization of the efficiency sequence of farms on the ground of the mentioned economic indices reveals tendencies that may be

made useful for the theory and practice alike. These are:

- the coefficient /value/ of the economic efficiency index is the function of the enterprisal production structure,
- a/ the weakest result is the characteristic of farms engaged predominantly in agricultural production,
- b/ to the farms operating with the highest efficiency may be ranked those, in which only quarter-half production value originates from crop production and animal husbandry.

TÓTH, Tibor: Az egyéni és vállalati érdekeltség kapcsolata könyv-
viteli információk alapján. /Connection of individual and enter-
prisal interests on the ground of accountancy informations./
Gazdálkodás, Budapest, 1983. No. 11. p. 16.

The enterprise is the structural framework of the productive preliminary conditions made useful with responsibility by the employees, of the operating means of production and of the application of obligatory management rules. The structural framework, however, cannot have interestedness, but the collective, working within it, can, therefore, instead of the individual and enterprisal interestedness the motion: individual and collective interestedness of the working people is more expressive.

The employee is on the one hand interested in the increase of his personal income /how much wages does he receive for one hour's work, for a unit of performance/, on the other, as a member of a working collective he is interested

- that production and working circumstances should be improved /development/,
- the management security should be strengthened /reserve/,
- the social, wealth and culture providedness should be broadened and increased,
- the possibility of professional development and refresher courses should be enlarged,
- and he should participate in the result of the produced surplus in just proportion.

The balance of the personal and collective interestedness of the employee is a basic requirement, therefore, it may be put down as a general rule and measure that his collective interestedness cannot be lower than his personal one, that is to say, the sum of the collective interestedness basis should be of identical size as the wage basis.

As at the comparison of enterprise the production costs computed

by divergent real wage hides different income and personal interestedness, the covering amount is not income but the joint cover of direction cost and income, the difference of output value cost is illusory and not realizable income in the case of products turned out for internal utilization, etc., therefore, the index of the assessment of the branches and activities should be: how much income - remaining with the enterprise /wage basis + net profit/ - is being produced and this index should be applied in the introduction and analysis of the activity-selecting, technical, technological, organizational, etc. solutions, measures, too.

The expression of the coherence by formula is:

$$j = \frac{\tilde{A} - /K-M-\tilde{E}/}{\overset{\circ}{O}}, \text{ where}$$

j = the income produced in one hour,

\tilde{A} = the net price returns,

K = total costs /together with the withdrawal of income and profit/,

M = the amount of the price of the make /wage/,

\tilde{E} = the depreciation /remaining with the enterprise/,

$\overset{\circ}{O}$ = the sum of the working hours used.

The total cost is to be reduced by the amount of the price of the make, because the method is making use - in interest of a better expression and perceptibility of interestedness - of the working hour in the course of computation and by the value of depreciation, because it is at enterprisal level - owing to its being added to the development fund - an income, not a cost. /The formula-like coherence is expressing the logic of the first step of the calculation procedure applied by the method./

The utilization of the working hour of certain commodity producing activities comprises the direct working hour, the other working hours appear in Forints in the tightened cost of maintaining plants, auxiliary plants, main branch and centre guidance, unfinished production and of products turned out for own utilization, therefore, we are taking into consideration instead of wages the working hour, while the other costs are remaining unaltered. The former uniform cost is, therefore, in a double division at disposal, partly as working hour input, partly as other cost.

The verticality of agricultural production, the building of the branches over each other determine also the sequence of the examination, analysis of activities. First stand the activities ensuring the functionability, the utilization of preliminary conditions, means, the last ones are the commodity-producing, outward performing activities. In detail and put into sequence:

- maintaining plants,

- auxiliary plants,
- products utilized, produced for internal use /and their unfinished production/,
- main branch guidance,
- central guidance,
- commodity-producing branch /and its unfinished production/.

In practice we are decreasing the total cost of the examined commodity-producing, outward performing activities by the utilized cost of previous activities and instead of it we are debiting to the just examined activity the working hour and cost in the proportion of their performance and the quality of product.

After summing up the direct and indirect working hour inputs and the costs of commodity-producing, outward performing activities, we are computing in the knowledge of price income the joint personal and collective interestedness index on the basis of the following coherence:

$$j = \frac{\text{net price income} - \text{cost}}{\text{working hour}}$$

The absolute value of the index should be at least the double of the average hourly wage, because the personal and collective interestedness of the employees is only in this case ensured. If the interestedness index does not reach the mentioned value, the activity in question is to be cancelled from the production structure, is to be stopped.

TÓTH, Zoltán: A Sió márkájú ivólevek fejlesztésének innovációs tapasztalatai. /Innovation experiences of the development of Sió brand juices./

Gazdálkodás, Budapest, 1983. No. 7. pp. 54-57.

We have tried to reveal some of the problems arisen in connection with developments belonging to the sphere of activity of food industry by a short description of the history and circumstances of the birth of Sió brand juices. The example of the Sió brand juices may not be considered as typical despite the features that may be generalized, because in our case the fortunate coincidence of different level interests has facilitated the start of development. After the realization of investment and starting of production such difficulties had arisen, which had almost put the whole program to an end.

We should like to mention here, that the examinations at the State Farm of Siófok represent a part of a larger, comprehensive research process, the aim of which is the fullest possible revelation of the factors impeding the development of the innovative activity chain in the

field of food production. What does explain the not satisfactory effect of the innovation process, the slowness of implemented developments, the frequent contradictions of technical and economic aspects? In the course of our work we are looking for answers to these questions. Our first undertaking partner was the State Farm of Siófok.

I would like to call the attention to two factors - out of the observations described in the article - impeding the development of innovation and pretty fairly occurring.

One of these problems is - that seems to be corroborated by the meanwhile performed surveys - the lack of adequate enterprisal development concepts. It is true that - remaining with the sphere of activity of the canning industry - we could bring numerous positive examples from the circle of enterprises, state farms and co-operatives, that have made great steps forward in this question, but at the same time the planned, worked out development concepts are missing in the case of the majority. Consequently, one important element of the innovative activity chain, the market-oriented development strategy, giving impetus to innovation denouement is missing as a matter of course. We know numerous conserve factories, where innovation is not considered a key problem, others[■] start innovations on some outside impulse - case by case, occasionally - while finally there are very few enterprises, that dispose of concrete, conscious development plans and of adequate market strategy.

The other seemingly general problem is connected with the background industry, - in some cases - with its lack or with its not appropriate preparedness.

The greatest problem of the development and production of Sió brand juices was - and is by the way still at present - the not appropriate preparedness of the background industry. The production of the so-called "throw-away" bags out of inland basic materials is a problem not even today solved. The Tiszai Vegyi Kombinát[■] had not procured the suitable target machine to the confectioning of manylayer /laminate/ foils. Instead, they have transformed a machine suitable for the preparation of artificial or cellophane bags. In consequence of the "loosening" of technological level about 40 per cent of the raw material bought through capitalist import had got lost, although in case of the application of an appropriate equipment the waste could not have surpassed 1-2 per cent.

■ The majority of state farms and co-operatives performing canning industrial activity

■ Tisza Chemical Combinat

As regards the technological side of development, such and similar "good-will" substitution solutions cause further problems, as the technical parameters of these are not suitable for technological requirements. At the same time, they are mostly unjustified, as instead of the rational utilization of assured foreign exchange, they result in prodigality. In our case the waste of time caused by packing problems may be put at 4 years.

Beyond the unsolved questions connected with the production the questionability of the informedness of the decision centres assenting the developments and giving credit and of the foundedness of their resolutions, not always properly and comprehensively assessing the circumstances may arise.

VARGA, Tibor: Ágazatirányítási modellszámítás szükségessége és lehetőség a húsiparban. /Need and possibility of branch-guidance model calculation in meat industry./
Budapest, AKI, 1983. No. 16. 84 p.

In the study we are presenting a new branch-directing model. We are treating its novel utilization in the course of so-called enterprisal behaviour researches. We are dealing with questions of the formation of necessary database.

The regional economics knows two - basically divergent from each other in view - roads of regional development. One is the so-called "balanced regional increase", the other the conception of "growth poles" /centres/. The regional economic policy, hall-marked by the 1971 government resolutions, went in its practice in the direction of balanced regional increase. The present economic situation /slow or nil increase/, however, is rather in favour of the realization of the conception of growth centres. The logic and results of branch guidance macromodels have well supplemented the planning instrument stock of centrally planned balanced increase. The concept of the emphasized development of growth centres, central places, is building increasingly on the entrepreneurial behaviour of producing enterprises. The successful examination model of this conception may be the procedure, that tries to depict the series of enterprisal decisions on probability calculation bases, for instance approaching with stochastic processes. The ability to react of the enterprisal sphere may be most successfully measured by comparing the efficiency and profitability indices. The efficiency indices used at present are measuring enterprisal efficiency of national economic view. From the value of the result of the presented linear branch-

guiding model such an efficiency index may be formed, the reality of which is better than that of hitherto known and applied types, as it represents better the enterprisal efficiency of national economic view. With the utilization of result data of the linear branch-guidance model and of efficiency and profitability indices such indicators may be formed, which may be used as input data to stochastic processes of enterprisal behaviour researches.

The basic idea of stochastic process researches is the procedure, in the course of which we may conclude from the empirical division of a phenomenon to the character of the process bringing it about. We may perform the mathematical deduction of this in a way that we make a generator function built from the actual partial differential equation system of a stochastic process correspond to the general function of some division and consider thus the division as the realization in a given time of the actual derivative of a stochastic process.

We are performing the stochastic process research in a way that we are building with the moments of empiric divisions, as parameters, theoretical divisions. Subsequent to this, we identify the empiric division - performing insertion examination - with the appropriate theoretical division. Finally, we may conclude from the accepted theoretical division to the stochastic process bringing it about. We consider the stochastic process as the expected formation of enterprisal decision. This is, however, already a part of the analytic work, the end-result of which may be also the proposition made for the modification of economic regulation.

The mentioned stochastic processes are of such nature that we are making the probability of the entering of a new element into an aggregate, dependent in linear way either on the number of already present element or on the strength of the impact of a circumstance influencing the entering. In our case the aggregate is the value of the enterprisal index under review, its element, however, is a unit part of it. The entering of a new element means, therefore, the increase of the value of the index, the probability of entering on the other hand the probability of the increase of the index. The increase may expectedly continue quickly or slowly or even stagnate.

We may at present conclude from seven divisions to the stochastic process bringing it about. Three of them are basic divisions, the further four may be produced as their combinations.

The special branch organization model worked out for meat processing is able to solve other tasks beyond being utilizable at the formation of indices necessary to stochastic process studied. These are the following:

- it may show differences between the real value and the value according to the expected branch optimum:

- as per regions,
- as per regional integrations,
- as per sector,
- as per the size of plants,
- as per development grades;

- propositions may be made on the basis of revealed remarkable differences for the modification of economic regulations;

- propositions of structural character may be made later for the co-operation and division of labour of the food industrial enterprises showing gradually enterpreneurial features;

- may propose conjunction /not legal!/ forms for the co-operation of plants belonging to separate sectors;

The model is a linear programming task, that is designating an optimum producing, full processing network, which is possible under ideal circumstances by determining the production structure and the directions and values of deliveries. In its target function the price cost minimum of branch is shown, that may be achieved by co-operation. This is, naturally, in the majority of cases diverging from the product structure based on enterprisal profit-interestedness and delivery dispositions. As today the engine of the economic growth is the profit of the enterprise, it is not the goal of the model - and it cannot either be - the forcing of the calculation results on the enterprises, it merely wishes to give tendency-like signals with "shadow plan" character to the economic guidance in respect of the success of orientation.

The model - as regards its construction- considers the space structure and values of slaughter animal husbandry as particularities as well as the space structure and values of consumption. It tries to establish between these two blocks, regarded as constant particularities an optimum slaughtering, meat processing network structure, further on optimum deliveries between them and the constant regarded blocks. The model is not counting on the establishment of new plants, only on a more rational running of the existing ones. The rational meat processing system, based on HUR chemical meat classification, is suitable for meat processing /V.: Erdős, Zoltán: Meat classification system, Húsipar, 1982. Volume XXXI. No. 78. p. 81./ in the framework of meat economic system and able to take into account the circumstances of the meat frame-economy - which has by today lost its significance. It is able to build reserve capacities of innovation goals as well as give optimum solution for the chopped and classified meat part deliveries, too.

The necessary database of modelling is accessible, and missing data may be constituted with satisfactors accuracy.

VARGA, Tibor: Sztochasztikus folyamatok az élelmiszergazdasági térségi viszonyainak vizsgálatában. /Stochastic processes in the study of area relations of food economy./
Élelmészeti Ipar, Budapest, 1983. Vol. XXXVII. No. 4. pp. 124-138.

The growing interest of economy guidance in economic-sociological and behaviour-theoretical questions has turned our attention toward the analysis of phenomena, processes of such view, and we have tried to get near to its comprehension through the handling of various enterprisal indices as probability variables.

With the drafting of "regional conditions" in the title we wanted to make perceptible that we are judging the adaptability of the method to be presented below much more wide-ranging than to use it only to reveal the contacts given by regional neighbourhood.

In the first half of the century one started to deal extensively in the field of planteology, bacteriology and entomology with the approach of regional division of phenomena through theoretical division and with the conclusion from the characteristics of joint division to processes forming them. For instance, they examined the regional division of various plant-associations, the arable land division of the eggs of certain butterfly species /Neymann, 1939; Thomas, 1949; Skellam, 1952; Greig-Smith, 1952, 1964/. Thereafter appeared probability division studies in the accident statistics, as analyses of the realization of stochastic processes in given time /Arbous and Kerrich, 1951/. Also natural and economic geography have treated these questions /Bunge, 1962; Hudson and Fowler, 1966/; they were applied by Gomar, Martin, Raguillet and Rogers /1969, 1971, 1972/ for settlement-geographic and economic research in their common studies. The mathematical and statistical part problems of the method has a considerable professional literature.

1. Theoretical foundation

The basic idea of the method is that certain probability divisions may be considered as realizations of certain stochastic processes. To prove this Arbous and Kerrich /1951/ have worked out a procedure, which will be later presented in short. The task is in our case to join the existing sample division to a known theoretical division and to determine thereafter the adequate stochastic process and to fill up its logical structure with content taken from the circle of scientific regularities of the professional area under review. The review has to be followed by an analysis and assessment, in the course of which we demonstrate and determine that the revealed regularities are desirable or harmful, correspond to expectations, plans or differ from them, are perhaps contradictory. Finally, the analysing work is closed by pro-

posals for modification of the system or mechanism. We want here to deal with only the first part of the task with the examination from methodological aspect and demonstrate on an example - with character of case study - its application - emphasizing that rather the documentation of the applicability of the method is dominant in the course of our calculations than the informative value of the obtained findings.

As the circle of known probability division functions may theoretically be expanded without limit and with the procedure of Arbous and Kerrich /1951/ an adequate stochastic process may be found, there are no obstacles of the improvement of the method in principle. Now, we deal - first of all in the footsteps of Rogers /1969/ - with such co-ordinations to be found in the accessible professional literature.

Basic division	Stochastic process
Poisson	The probability of the entering of an element into a part-aggregate does not depend on the number of elements already there, neither are certain circumstances determinant to the formation of the number of elements of the aggregate.
Binominal	The probability of the entering of an element into a part-aggregate is not the function of time, but it is decreasing in a linear way with the growth of the number of elements already there or with the strengthening of the impact of certain factors.
Negative binominal	The probability of the entering of an element into a part-aggregate is not the function of time, but it is increasing in a linear way with the growth of the number of elements already there or with the strengthening of the impact of certain factors.

Complex or generalized division	Stochastic process
Negative binominal	The process brings about such division - Poisson - the parameter of which is not constant, but is of Gamma division altering per part-aggregate groups, or such division, in which the part-aggregates are of Poisson division, the elements within the part-aggregates, however, are of logarithmic division.
Neymann type A	The process brings about such division - Poisson - the parameter of which is not constant, but is of Poisson division alternating per part-aggregate or such division, in which the part-aggregates are of Poisson division and the elements within the part-aggregates are also of Poisson division.
Poisson-Binominal	The process brings about such binominal division, the parameter of which is not constant, but is of Poisson division alternating per part-aggregate or such division, in which the part-aggregates are of Poisson division and the elements within the part-aggregates of binominal division.
Poisson-Negative binominal	The process brings about such negative binominal division, the parameter of which is not constant, but is of Poisson division alternating per part-aggregate or such division, in which the part-aggregate are of Poisson division and the elements within the part-aggregates of negative binominal division.

2. Practical application

Now we are trying to demonstrate its application on an example - clearer in respect of handling -, namely, on the regional division of the distribution places of baking industrial products distributed in the inner town of Szolnok.

If we divide the aggregate arbitrarily into part-aggregates, then in order that latter should dispose of the particularities of the former, we have to designate a permanent place /or area/ for the object of our examinations. We have, therefore, chosen a densely resided, with dwelling and working places covered area, where distribution places /food shops, catering places, working place and school buffets, etc./ could have been established at every point theoretically, therefore, - following our previous sequence of thinking - if we are forming part-aggregates of identical measure /area units/, the probability of getting one element /distribution place/ into them is equal.

How this retail trade network had been formed with time, whether in the determination of the distribution places /we are using this denomination only on account of the functional and organizational heterogeneity/ the relations among them or /and/ certain other factors played a role, we are looking for answer to these questions in our analysis.

The area under review is in Szolnok the part of the town bordered by Zagyva - Tisza - Mártirok útja - railroad. We have counted here 80 distributing places. We have laid square grates of different sizes on the area, which were considered part-aggregates and the distribution places belonging to them points.

As the size of the area is approximately constant, the number of elements just the same, we may count instead of optimum square size with optimum square number, too. On the ground of square number we have surveyed six empiric divisions and approached them with six theoretical divisions. P-NB cannot be counted, as the parameter of each is of negative value, we have on the other hand built two of P-B in the cases of $n = 2$ and $n = 5$.

According to our calculations the empirical division follows the Poisson binominal / $n = 2$ / division with great probability. Concluding back to the stochastic processes resulting in this division, we may state that

in case of generalized process the aggregate of distribution places is of such a nature, within which the part-aggregates /groups/ consisting in average of two members / $n = 2$ / are of Poisson division, with an average of $N = 0,0952$, within the part-aggregates, however, the distribution places /elements/ of binominal division / $n = 2$, $p = 0,105$ /.

Supposing a complex process, the division of distribution places is binominal / $n = 2r_1$, $p = 0,105$ /, but not "purely", as the average number of the distribution places of more part-aggregated /more neighbouring cells/ is not a constant value, but a probability variable of Poisson division, of $v = 0,0952$ average per part-aggregates.

If we accept as explanation the generalized process, then starting

from the average $V = 0,0952$ we may say that the two-element part-aggregate had been formed in average on an area corresponding to a 10,5 pieces square /cell/. This areasize may be expressed by numerals - as we have made use of a map of known scale, made by photo reduction of highly exact land survey basic maps when charting the distribution places. Within the part-aggregates the elements are of binomical division, therefore, the appearance of new distribution places is of very small probability, but already the getting there of the second was of small probability. That is to say, the distribution places are "thrusting" each other or certain circumstances are limiting the increase of their number.

VISSYNE TAKÁCS, Mara: Az állattartási beruházások megvalósítása az V. ötéves tervben. /Realization of animal keeping investments in the fifth Five-Year Plan./
Budapest, AKI, 1983. No. 3. 52 p.

The animal husbandry investments of the fifth Five-Year Plan have emphasized quickly implementable reconstructions, the application of energy-saving construction and operation methods. The plan clearly refer to the necessity of the increasing of efficiency, of better fixed asset utilization.

In the course of our work last year we confronted the investment plan of the fifth Five-Year Plan with the realization and analysed the relation of fulfilment and object-setting.

The objectives of animal production of large-scale level of the fifth Five-Year Plan have been fulfilled, what is more, even overfulfilled in more respects. The most outstanding result had been born in milk production, in five years almost 60 per cent of the increase had been on large-scale level, whilst the cow stock had grown only by 7,4 per cent. The milk output reflected on one cow was by more than 1600 litres in 1980 than at the end of 1975. During the plan cycle the production of slaughter sheep grew by 39 per cent, the wool output by 47 per cent, the production of slaughter poultry by 37 per cent.

The product growth had been accompanied by an animal stock increase of generally the same rhythm, except cattle breeding, where the outputs of intensive milk producing stocks had formed the internal structure of production volume, with a relatively moderate stock increase.

On the contrary, the investments of animal keeping planned in the fifth Five-Year Plan lagged behind both in capacity unit /place, m^2 / and in utilized cost volume. The poultry keeping in an exception, where capacity growth had surpassed the estimation by 221 per cent, the utilized

investment cost by 77 per cent. On the other hand, the investment volume of pig breeding had significantly lagged behind, where only 45,4 per cent of the planned places had been built and the construction rhythm of the planned store cattle and young cattle places, which achieved only 42,5 per cent of the estimated one.

Plan and realization are approaching each other mostly in the investments of cow places /86,7 per cent/ and sheep places /90 per cent/.

The explanation of the contradiction between growth of production and lagging behind of investments lies in the improvement of place utilization and in more efficient capacity management.

The place utilization has reached maximum in almost all branches. The place utilization of cattle breeding buildings is of 90 per cent, that of pig fattening buildings of 94,5 per cent, that of sheep-folds of 101,5 per cent. There are reserves only in the poultry keeping; here the utilization of basic area is of 86 per cent. In general, the conclusion may be drawn that the enterprises had balanced out the gradual limitation of financial possibilities by efficient fixed asset management, with the revelation of capacity reserves in the interest of production growth.

This is underlined also by the fact that about 40-60 per cent of the animal places put into operation during 5 years had been created by reconstruction or else had been a requalification from other utilization line.

Also the ideas of up-to-datedness had changed. The decrease of investment funds, the lifting of investment supports, the augmentation of energy prices had directed the tendency of construction from the over-mechanized, overheated buildings to the natural keeping methods. This tendency had found justification first in cattle breeding, then in pig keeping and it seems that it had reached also poultry keeping technologies having been handled as taboo for more decades, if we are taking into account the experiments with buildings of foil coverage.

Both the volume of reconstruction and the gradual change of keeping methods have brought about that also the volume of investment cost utilized during the fifth Five-Year Plan had remained deeply below the plan. 55,6 per cent of the planned cost had been used for cow-shed building, 64,6 per cent for sheep-folds and 21,3 per cent for pig fattening places. The investments of poultry keeping had on the contrary exceeded the estimation by 77 per cent.

The measure and formation of investments had been influenced to a great extent by the regulations at any time, but had not brought about always the attainment of the desired aims. Frequent changes had resulted in unhealthy periodicity of investments, a good example of which is pig keeping. The various construction supports had been of great sign-

ificance, but the dotations of the end-products have had the more important and balanced impact on the investments both in a direct and indirect way.

The economic regulators today definitely hold back investments, but give no adequate incitement in the field of personal and enterprisal interestedness to develop production without investment. In this field there are still numerous open questions of the creation of a balance.

Our examinations have also put light to deficiencies of the medium range planning methods. The changes in economic life require a reassessment of the planning methods applied previously, where the enterprisal possibilities and aspirations have to obtain a wider place than hitherto.

Summing up, we may state that the existing building stock of animal husbandry means still significant potential material and capacity reserves for the branches, the realization of which may be achieved by reconstructions. It is hardly disputable today that the expansion of plants disposing of infrastructure, the cost of the capacities obtainable through new keeping technologies are essentially lower than those of new constructions. The past Five-Year Plan has served with numerous good examples of reconstructions and plant enlargements, developed in various branches cheaply, quickly and in a very simple way.

This is worth attention the more, as reconstruction will remain the principal investment form of the future, too.

WAGNER, Hartmut: Az NDK agrárgazdasági helyzete az 1984 évi agrárreform előtt. /Agroeconomic situation of the German Democratic Republic prior to the agrarian reform of 1984./
Budapest, AKI, 1984.

The changed world economic conditions of the eighties, the tight foreign exchange situation expose the agriculture of the GDR to a grave test of strength, demanding at the same time a deviation from the agropolitical line having been followed till now. How much these changes are of basic character, what are the lessons to be drawn from the agricultural policies' of the past three decades both for the agrarian experts of the GDR and Hungary, and what consequences will be given to the Hungarian food export by the expected changes, these questions the study wants to give answers to.

As a result of the development of the past three decades, the agriculture of the GDR has reached also in international relation a high level. The basis of successful development is seen in the resolute,

consistent agricultural policies which has gradually realized the socialist agricultural production working with industry-like methods.

The spectacular development stopped short, however, in the second half of the seventies. First of all in the crop production stagnated the outputs, that led - in the interest of maintaining the animal stock - to a considerable fodder import. The deficiencies of the agricultural production came more and more into prominence, the agriculture is producing too expensively, the supply is irregular, there are problems with the efficiency of production and its organization.

Three high-level authorities have dealt in the recent years with agriculture; on the ground of the documents published thereof, we have to state, however, that the agricultural policy of the GDR will neither in the future take an essentially new road. For instance, there was no change in the system of plan breakdown, the independence of farms will further on remain an abstract notion. The solutions of the problems are first of all seen in a better exploitation of existing reserves.

What are the problems causing most of the concerns within the agriculture of the GDR?

1. One of the most earnest problems of the agriculture of the GDR is that the results achieved in crop production do not show in recent time such a growth, that would meet the increased needs of animal husbandry. The GDR was compelled, therefore, by the end of the seventies to import corn and protein fodder in a greater and greater measure, which is of extraordinarily adverse impact on the economy of the GDR under the present unfavourable economic circumstances. The X. congress of the party decided, therefore, a gradual reduction of the corn import. One of the key questions of this is the increase of soil fertility and its most efficient exploitation. In the agriculture of the GDR the deterioration of soil fertility is at present causing very severe concern, the effect - in spite of high fertilizing level - being first of all felt in the decreasing results of potato and sugarbeet production. In the case of cereals the decreasing soil fertility may still be balanced with adequate fertilizing - but this is accompanied by more and more increasing costs. The agrarian guidance of the GDR has since 1980 called the attention to the importance of feedstuff management and of the application of organic manure. They are awaiting a progress from the more careful application of crop rotation, that is, however, knocking against irreconcilable obstacles, owing to the inflexibility of breakdown system.

In respect of the better exploitation of reserves a new development has taken place in grass cultivation. Here, besides grazing, the preparation of hay - exploitation of cheap solar energy - came again to the centre of interest. The double exploitation of pasture has started

numerous researches.

In spite of the efforts the last two years have not shown a considerable step forward in fodder supply. The decrease of corn import or an autarchy in fodder remain after all still a faraway goal.

2. The animal husbandry was characterized in the seventies by industry-like keeping methods, the development of the branch at that time considerably exceeded crop production. The most important element of the growth of production was the increase of animal stock, but the measures taken to reduce fodder import had stopped this process. At present, the improvement of fodder exploitation is being emphasized, that caused concern above all in industrial keeping technologies. The conceptions are calling the attention to the reduction of specific fodder inputs, the replacement of grain crops by green or silo fodder and the revelation and exploitation of fodder reserves.

3. The direction line of the agricultural policies of the GDR is repeatedly emphasizing the importance of enhanced material interestedness. Instead of intensive material and energy wasting development, there is a need for rationalization, means-saving complex reproduction and for cost-profit analyses.

Most of the measures are taken in the interest of energy saving and maintenance. The most important element of the energy saving is the reduction of fuel and oil-fuel. Among heating equipments the alternative energy sources - instead of oil brown coal, heat-recovering equipments, biogas plants, etc. - are getting more important role. The energy saving is appearing also in the reduced utilization of fertilizers and chemicals, the central proposals recommend, for instance, of plant protective agents the application of biological factors.

Maintenance, as one form of reproduction obtains in the eighties a growing importance. On the one hand, the introduction of new machines knocks against obstacles due to tighter funds, on the other, the so-called "decreasing rhythm of moral wear" has been raised, that is to say that the machines and equipments should be utilizable beyond the period given in advance. A very important role is played by the production of rationalization means within the sphere of agriculture, in the course of which the grave spare part problems presenting itself also in the GDR is being tried to be somewhat decreased, which is above all given by the end-product-centric character of agricultural machine industry.

4. The process of co-operation and specialization in the agriculture of the GDR has led necessarily to a separation of the traditional production process; at present a good part of production is being performed in specialized crop production, respectively, animal husbandry farms. The economic collaboration is being realized through so-called

co-operations, the directing organ of which, the so-called co-operation council is planning and directing the common work. The activity is determined by annually concluded agreements, the keeping of which is theoretically obligatory for both parties. In case of not fulfilling, however, the co-operation council does not dispose of any sanction right, this causing several times severe problems.

In the interest of solving the problems aspirations in recent time have gathered strength on the one hand in order to give greater authority to co-operation councils, on the other, to elaborate such a premium system, which would make also the crop producers interested in the total result of the co-operation.

Taking the present situation, we have to state, therefore, that the agropolicy of the eighties has not yet reached the objectives set at the beginning of the decade. The deficiencies and problems may be felt both in production and in economic regulation. In respect of the economic regulation the agrarian reform planned for 1984 is the first significant step to change the situation. The agrarian reform results in totally new cost and profit relations in most farms, its effect for the time being dubious. The question is above all, how much are the new cost and price relations real, and how quickly and in what measure can the farms switch to new methods, from the convenient farming accustomed to during a long time.

WAGNER, Hartmut: A kooperáció az NDK mezőgazdaságában. /Co-operation in the agriculture of the German Democratic Republic./
Világgazdaság, Budapest, 1983. Vol. XV. No. 205. p. 4.

The development of specialization in the agriculture of the GDR has led to a separation of the traditional production process. The basic units of agriculture had been represented since then by collaboration forms of plant growing and animal breeding farms, the so-called co-operations.

The roots of co-operation in the agriculture of the GDR date back for about 15 years. The first co-operative sections /KAP = Kooperative Abteilung Pflanzenproduktion/ were formed in 1968 in crop producing KAP performed the arable land plant growing collectively on the common arable land of member farms, while the plots remained in the ownership of the participating co-operatives or state farms. The application of modern production procedures has led in most KAPs to a spectacular growth of production. Thus, KAP had become more and more the active force of agriculture. At the same time, their production independence grew and

contradicted more and more to the aspect of ownership. The claim asserted itself sharply that they should be legally independent beside being independent in management. The frequent conflicts given by ownership had become a problem impeding production.

The resolution of the IX. party congress of the GSUP in 1976 determined finally the road of the intensive development of agricultural production in the shaping of industry-like production of specialized agricultural co-operatives, state farms and co-operative units with the aim to ensure in the long run the smooth growth of the agricultural production. As a result of the resolution, the number of specialized farms had increased by leaps and bounds.

In the specialization process since 1975 more than 1400 crop producing and nearly 3500 animal breeding farms have been established up to now. In the interest of a better organization of the economic collaboration, inevitable among them, a new collaborative association form - the so-called co-operation - has come to prominence. In such a collaborative association a crop producing and 2-3 animal breeding farms are generally working together. The connecting role between crop producers and animal breeders is played by the so-called co-operation councils.

The co-operation council is dealing within the co-operation with fundamental economic questions; the operative work is being directed by various committees, the presidents of which are also members of the co-operation council. The three principal committees are those of fodder, economy and social affairs.

The high organization does not mean, however, that there are no concerns in the collaboration. Most of the problems arise from the fact that - though the prepared agreements are obligatory for the parties after assent and signature - there are many breaches and contract, unpunctual deliveries. Beyond the late deliveries also the qualitatively too weak and paradoxically the sometimes too good fodder mean concerns.

To solve the above problems the aspiration has gathered strength lately that the co-operation councils should obtain a wider authority and that they may apply such a premium system that makes the crop producers direct interested in the result co-operation, consequently, in the result of animal breeders, too. It is much hoped in this respect from the agrarian reform to enter into validity by the 1st January 1984. From this time on, new budgetary and sale conditions will be standard for all co-operatives, state farms and other co-operative units.

