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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

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CZECHOSLOVAKIA

ENVIRONMENTAL PROTECTION INVESTMENTS IN CSR VIEWED

Prague PLANOVANE HOSPODARSTVI in Czech No 10, 1983 pp 66-76

/Article by Eng Josef Jirat, Candidate for Doctor of Science, Czech Planning Commission: "Investment Activity for Environmental Preservation in the CSR"/

/Text/ We are living at a time when the results of the R&D revolution are bringing great changes to mankind. The conditions are gradually being created for the improved satisfaction of the needs of increasing numbers of inhabitants. The level of civilization and the standard of living are both increasing. These are important outcomes of human activity, the achievement of which requires more than a little effort. In his activities man is exploring all levels of the earth. In addition to their benefits, however, these explorations also mean increasing threats to and the pollution of the environment, and often even its destruction in the broadest sense of the word. This means that the air, water and soil are polluted, the biological balance of the landscape is disrupted, and its accumulated wealth and productive capabilities are damaged.

Our society possesses a particularly favorable foundation for a conscientious concern for the environment. This stems most of all from our socialist social order, the planned management of the national economy, and from legislative measures for the protection of the environment which are among the best in the world. Concern for the environment is today an inseparable component of overall state concern for the standard of living.

Present development is bringing, in addition to undoubted successes, also significant problems. And the problems related to concern for the environment cannot be underestimated. The consequences of neglecting them are usually not evident immediately, but are cumulative, assume a qualitatively different form and manifest themselves much later and often in a completely unexpected guide.

Our party and government agencies are aware that concern for the environment and the rational utilization of natural resources are becoming among the most important of public issues, the resolution of which will also determine the success achieved in fulfilling the development plan for the national economy, increasing the standard of living and developing our socialist society. This is only confirmed by documents of the 16th CPCZ Congress and the related program declarations of the CSSR and CSR Governments.

Creating the preconditions for the development of harmonious relationships between man and nature is not, however, a simple or inexpensive matter even under socialism. It is essential to increase expenditures on environmental protection, but here as well we must proceed in a differentiated manner consistent with our means.

For this reason, as early as 1974 the CSR Government proclaimed its agreement, in the form of resolution No 315/1974, with limitations on the most important industrial agglomerations of the CSR in which the negative environmental effects are concentrated, and where priority must be given to solving problems related to its protection (Prague, the North Behemian Brown Coal Basin, the Ostrava-Karvina Basin, the Sokolov-Karlovy Vary oblast, the Hradec Kralove-Pardubice agglomeration, Brno, Plzen and, since 1980, the Melnik-Kralupy-Neratovice oblast, per CSR Government resolution No 76/1980). Subsequently, at its third meeting in 1977, the government took under advisement a Set of Measures for the Long Range Development of Environmental Enhancement and Protection in these areas of the CSR. In this way the preconditions were created, from the viewpoint of environmental concern, for giving preference to these areas as opposed to other parts of the CSR in national economic planning, capital investment, public health and compensational measures, research and development, and the like. Steps were also taken towards a more rational resolution of the entire complex of negative impacts of the development of civilization on the environment, the health of the population, etc.

Environmental preservation measures take several forms. Among the most appropriate are those which reduce the production of environmental pollutants, thereby reducing also the need for the resources to counteract them. Among these are, for instance, the maintenance of technical discipline and the related technical measures in production and in plants, the reduction of pollution resulting from the operation of capital assets and the use of raw materials, an increase in product life cycles, the improvement of production technologies, the use of secondary raw materials from waste byproducts, etc.

A significant impact, usually in a short time, is obtainable mainly through investment.

What Volume of Investment Is Expended by Our Industrially Advanced Country on Resolving Environmental Problems on the Territory of the CSR?

The data published to date varies widely and is based mostly on rough estimates, and sometimes varied and indirect comparisons, or relates solely to measures directed at improving individual aspects of the environment (for instance, the construction of waste water treatment facilities), and therefore does not describe the overall state of affairs.

In connection with the first stage in preparing drafts for the Seventh 5-Year Plan for development of the national economy, economic development on the territory of the CSR was analyzed during the last 5-year plan. Within the context of this project, the first independent and detailed analysis of investment activity related to environmental protection was undertaken, utilizing all available planning and statistical information. The budgeted cost of

initiated construction projects was taken as the fundamental evaluated quantity. Attention was focused on the most important investment projects for for the preservation of the quality of water and air, and for either the use or the disposal of wastes, with budgeted costs /hereafter RN/ of more than Kcs 2 million.

The remaining problems in the area of environmental protection, which are connected, for instance, with noise, thermal pollution, etc., are not inconsequential, but no significant steps have yet been taken to resolve them in terms of investment, so no cost figures have yet been arrived at for them. Likewise, the analysis did not include a number of investment projects within the context of which additional environmental protection measures were implemented (waste water treatment plants within the context of new factory construction, heating plants in newly constructed apartment complexes, etc.) with overall RN of about Kcs 0.5-0.7 billion (estimated).

The following table provides an overview of selected final values of the analysis:

Overall Budgeted Costs for Construction Projects Related to Environmental Protection With RN Over Kcs 2 Million and Begun in the 1976-1980 Period (in billions of korunas)

	Opatření (1)							
	k ochraně čistoty vod (2)		k ochraně čistoty ovzduší (3)		k likvidaci a využití odpadů (4)		celkem (5)	
	počet akcí (6)	RN celkem/ stavební (7)	počet akcí (8)	RN celkem/ stavební (9)	počet akcí (10)	RN celkem/ stavební (11)	počet akcí (12)	RN celkem/ stavební (13)
Resorty federální (14)	28	0,35/0,22	80	3,69/1,94	14	0,38/0,27	122	4,42/2,43
Resorty národní (15)	52	1,59/1,00	113	1,56/0,78	8	0,20/0,19	173	3,35/1,97
Území ČSR (16)	80	1,94/1,22	193	5,25/2,72	22	0,58/0,46	295	7,77/4,40

Key:

1. Measures
2. To protect water purity
3. To protect air quality
4. To dispose of or use wastes
5. Total
6, 8, 10, 12. Number of projects
7, 9, 11, 13. Total RN/construction
14. Federal sectors
15. National sectors
16. Territory of CSR

During the Sixth 5-Year Plan construction was begun on 295 projects for the preservation of the environment with total budgeted costs of Kcs 7.8 billion (Kcs 4.4 billion of which was for construction costs in current prices). This

represented 3.5 percent of total budgeted costs for construction projects of over Kcs 2 million (including specially regulated construction projects such as the METRO, ZAKOS, etc.) begun during this period in the CSR.

Federal sectors began construction of 122 projects with total RN of Kcs 4.4 billion (Kcs 2.4 billion of which was for construction), which was 57 percent of the total RN for these projects within the CSR. The average budgeted cost for a project in this sector was Kcs 36 million (as opposed to Kcs 19 million for projects funded by national sectors).

The percentage of these resources provided by given sectors roughly corresponds to their share in environmental disruption, as shown by the table on the following page.

Investment resources for environmental preservation were channeled by individual sectors to those divisions which had done the most polluting through their operations. For instance, the Federal Ministry of Fuel and Power /FMPE/, Federal Ministry of Metallurgy and Heavy Engineering /FMATS/, and Federal Ministry of General Engineering /FMVS/ handled the decisive portion of air quality protection, while national committees handled almost two-thirds of water purity protection activities, and the CSR Ministry of Industry /MP CSR/ in about equal measure the protection of both of these major components of the environment /see the second table below/.

Percentage of Resources Provided for Environmental Protection Projects by Sector

Sector	Number of Projects	Total RN in billions of Kcs	Percent of total RN
Federal Ministry of Fuel & Power /FMPE/	73	2.93	38
CSR Ministry of Industry /MP CSR/	38	1.17	15
Federal Ministry of Metallurgy and Heavy Engineering /FMNTS/	23	0.84	11
Federal Ministry of General Engineering /FMVS/	14	0.51	6
CSR Ministry of Agriculture and Food /MZVz CSR/	41	0.46	6
Other (Federal Ministry of Transportation, Federal Ministry of the Electrotechnical Industry, CSR Ministry of Construction, CSR Ministry of Agriculture and CSR Ministry of Forestry and Water Management)	41	0.56	7
National committees	65	1.30	17

Utilization of Investment Resources for Environmental Protection by Their Selected Monitored Components (in percent)

Sector	Measures: to protect water purity	to protect air quality	to dispose or use wastes	Total
FMPE	2	85	13	100
FMHTS	18	82	-	100
FMVS	6	94	-	100
MP CSR	42	43	15	100
MZVz CSR	40	60	-	100
Other sectors	47	52	1	100
National committees	64	36	-	100
Territory of CSR	25	68	7	100

One-fourth of all budgeted costs for intiated environmental protection construction projects were accounted for by RN for water quality protection projects. Construction was begun on 57 waste water treatment plants /COV/ with total budeted costs of Kcs 1.4 billion. Among the most important projects under national committee jurisdiction were the upgrading of the Central Waste Water Treatment Plant /UCOV/ in Prague for Kcs 306 million, the expansion of the COV in Bruntal for Kcs 49 million, and the beginning of construction of new COV's in Jesenik for Kcs 175 million and in Ase for Kcs 69 million. Other important projects included the first phase of COV construction at Pardubice Synthezia VCHZ for Kcs 148 million under the jurisdiction of the MP CSR, at Galena Komarov for Kcs 51 million under the jurisdiction of the CSR Ministry of Health, and at the Bohumin ZD for Kcs 61 million under the jurisdiction of the FMHTS. In addition, construction was started on a further 49 COV's under "Project Z" with budgeted costs for the most part under Kcs 2 million, which are designed to resolve local water pollution problems (the Pecky City National Committee, Cernosice, Zakupy, the Kozlovice City National Committee, Tovacov, and elsewhere).

According to the CSR Ministry of Forestry and Water Management, in the Sixth 5-Year Plan 69 projects included in the environmental protection plan were completed with total RN of Kcs 1.4 billion, as well as almost 100 COV's of under Kcs 2 million RN within the framework of "Project Z." Of the larger projects, construction was completed, for instance, of the COV at the Zaluzi CSSP CHZ for Kcs 126 million--with an entrapment capacity of 2850 tons annually of 5-day biochemical oxygen consumption /BSK5/, the city COV in Teplice in Bohemia for Kcs 70 million--with an entrapment capacity of 2700 tons annually of BSK5, the city COV at Humpolce for Kcs 37 million--with an entrapment capacity annually of 810 tons BSK5, the city COV in Svitavy for Kcs 100 million, etc. Most of the larger completed COV's are adhering to their design parameters and, given the proper maintenance of their equipment, it has been possible to achieve higher than projected performance. The total capacity of the completed COV's represents an entrapment of about 20,000 tons of BSK5 annually.

Thanks to socialist competition and the improvers movement, the equipment at many older COV's was upgraded and their performance improved without large investment outlays. Despite these successes, however, we did not succeed during the Sixth 5-Year Plan in preventing a further worsening of the waters of the CSR, as documented by the following table on the development of water pollutant emissions in thousands of tons per year.

Indicator	Location	1970	1975	1980
BSK5*	CSR	148	141	198
	CSSR	253	262	334
insoluble compounds	CSR	235	190	241
	CSSR	381	345	418

*) BSK5 = 5-day biochemical oxygen consumption, an indicator describing pollution by degradable organic compounds.

This overview does not include "surface pollution" from agriculturally managed land.

An increasing standard of living combined with improved housing standards and increased water consumption has resulted in substantial increase in the volume and pollution levels of waste water.

The rapid development of agriculture, its shift to mass production forms, and its intensive use over broad areas of fertilizers and biocidal compounds to eliminate weeds, pests and diseases has increased the so-called surface pollution of surface and ground water, primarily by runoff from agriculturally managed land. The significant increase of nitrates in streams is particularly undesirable.

The ongoing progress of industrial production, relatively obsolete capital assets, and the slow implementation of low waste or wasteless production techniques and other factors have led to an increase in industrial pollution.

The water purity situation has been influenced negatively as well by frequent incidents of accidental pollution of surface and ground water. The State Water Management Inspectorate investigated during the 5-year plan more than 1,100 accidents caused above all by the escape of crude oil substances and agricultural wastes and compounds. The major causes of these frequent accidents included above all the low level of technical sophistication of the equipment used to store, transport and handle these substances as well as the failure of the human element.

The main cause of worsened water purity was the fact that COV construction did not keep pace with increases in pollution.

The significant decline in COV construction during the Sixth 5-Year Plan had a number of causes. Central investors included such projects in sectoral plans less frequently than in the previous 5-year plan. Attempts to solve

problems at the expense of water quality also appeared. Contracting organizations were not interested in undertaking construction projects, asserting that they did not have adequate specialized construction capacity, that they have problems in arranging for deliveries of the needed materials, and perhaps even out of fear of the technical difficulty of the projects themselves. COV construction is complex and demanding in terms of the requisite quality of all aspects of such a project, the labor output involved in all aspects of construction, the obtaining of materials that are in short supply, the equipment required--particularly the necessary subassemblies, etc. This difficulty in finding contractors was reflected in the failure to complete project designs and their consequent exclusion from plan proposals, as well as in the initiation of projects based on the most available contractor without bothering to consider its public importance. At projects that had already begun, construction activities were restricted due to transfers of employees to higher priority sites, lack of materials, etc., all of which caused significant delays in construction schedules.

The unfavorable development of water pollution also had their causes. Inadequate design preparation or even equipment shortcomings made it impossible over the long term at some new products to achieve the necessary and designed capacities (Novy Bor). A number of COV's built prior to 1970 became obsolete, and some city plants in particular soon ceased to be adequate in terms of capacity (Ceske Budejovice, Plzen, Tabor, Olomouc). Restricted availability of the proper equipment, machinery and materials made it more and more complicated at these COV's to carry out upgrading programs. For various reasons it was necessary to postpone planned operational stoppages at some plants with obsolete production equipment (sugar processing plants, starch factories, etc.) where it is no longer effective to build a new COV. On the other hand, inspection agencies learned that the capacity of certain COV's was not being fully utilized, due to inadequate and sloppy equipment operation, the delayed hookup or construction of new factories, sewage systems, etc.

Exceptional attention was devoted during the Sixth 5-Year Plan to the protection of air quality. A total of 193 projects were begun with budgeted costs of Kcs 5.2 million, which represents 68 percent of total RN for initiated environmental protection projects.

This is understandable because an economy with a high energy generation capacity, and where about 80 percent of the energy comes from domestic, mainly low quality coal, must exert a negative impact on air quality.

The distribution of emissions (the substances polluting the air) is at the same time very uneven in the CSR, and basically conforms to the main industrial areas with a link to the mining and use of coal (mainly to produce electrical energy).

Approaches to a resolution of the air quality issue are influenced above all by the fact that:

-- the main source of pollution are combustion processes which generate about 75 percent of all solid and gaseous emissions;

-- reducing solid emissions to an acceptable level is a technically solvable problem, but restricting gaseous emissions (the greatest percentage of which is sulphur dioxide) at the critical sources of pollution (electric plants and heating plants) is a very serious problem due to the quality of the coal which we burn.

Increased concern over air quality has produced positive results. During the 5-year plan many large and small sources of pollution carried out the reconstruction and modernization of obsolete separating equipment for solid emissions. This was the case, for instance, at two units of the Ledvice electric power plant, where annual emissions were reduced by 13,000 tons, at two units of the Tusimice I power plant (with reductions of 4,000 tons annually), at five units of the Tisova I power plant (reductions of 11,000 tons annually), at five units of the Melnik I power plant (reductions of 12,000 tons per year), at all six units of the Opatovice I power plant (reductions of 15,000 tons annually) and at the Ceske Budejovice heating plant (reductions of 750 tons annually), etc.

These very demanding and costly projects were financed mainly from operating resources and were not therefore included in a numerical analysis.

Special attention continues to be devoted to the entire complex of very difficult problems related to reducing sulphur dioxide emissions at large power plants. After evaluating existing and possible techniques, we deemed the Soviet megnetization method the most appropriate. This process involves removing the sulphur dioxide from the combustion byproducts, the drying and decomposition of magnesium sulphite, and the production of sulphuric acid. A number of discussions took place regarding the form of cooperation with the USSR prior to the realization of an experimental operational unit at the 200 megawatt unit of the Tusimice II power plant.

The need to desulphurize combustion byproducts does not apply solely to electric power plants; there are other important sources of these exhalants as well. At the Uzin A. Zapotocky Fuel Combine the most appropriate technology was verified for desulphuring expansion gases, the requisite contracting arranged for and construction slated to begin in 1982. At the Chomutov Tube Rolling Mill and Ironworks construction with RN of Kcs 64 million was started on equipment to desulphurize generator gases.

A very progressive technique for improving air quality, particularly in industrial agglomerations, is the centralization of heat sources, which results in the elimination of dispersed sources of air pollution and the eventual removal of their further emissions. Measures of this type (for heating plants and thermal feeders) were the recipients of the most resources during the 5-year plan (with RN of initiated projects of Kcs 2.5 billion), not only within the context of protecting air quality, but also the environment as a whole. The Sixth 5-Year Plan saw the completion of the Komorany heating plant at a cost of Kcs 90 million, the Liberec heating plant for Kcs

188 million, the Teplice heating plant for Kcs 114 million, etc. Among the construction projects which were begun were the Brno Sever heating plant for Kcs 244 million, as well as Trmice III for Kcs 113 million, Michle II for Kcs 121 million and Holesovice III for Kcs 282 million. In 1980 construction was also begun on the Plzen II heating plant for Kcs 492 million which, for example, will make it possible upon completion not only to provide heat to a new apartment complex but also to eliminate two heating plants (the brewery and ELU I), 21 moderate pressure steam boilers and 220 apartment and block boiler room facilities operating mainly on obsolete equipment. This will lead to a reduction in solid emissions within the city of about 53,000 tons per year.

The centralization of heating accompanied by the elimination of dispersed heat sources has been among the most successfully fulfilled of the environment protection measures and its implementation is satisfying a long-term program for this activity.

One of the most effective of the measures for protecting air quality is the replacement of solid fuels with enriched energy forms. Projects of this type have been implemented mainly at "lesser" sources of pollution with the main objective of resolving problems in extreme locations, particularly in older built-up areas.

Even though sources of enriched fuels have been more restricted (LTO), we have been successful in implementing many projects, especially in industrial agglomerations. The tunnel furnaces at the Karlovy Vary Porcelain Works in Most were converted to gas, as were the boilers at the J. Fucik Spa in Teplice, at the Prague Ceskomoravska-Kolben-Danej Vysocany Factory, etc. The boilers at the Bystrany Electrotechnical Factories, at the Horni Slavkov Karlovy Vary Porcelain Factory and at the Pribram Meat Industry have all been converted to light heating oil. Additional conversions of many tens of boilers to both types of fuel have been made for Prague Apartment Management, in the cities of the North Bohemian Brown Coal Basin, and elsewhere. The number of units burning wood waste has also gradually begun to increase. Other investment projects have had more than a small impact on air quality, even if only a local level. These include, for instance, the elimination of emissions from synthetic fiber producing operations at Neratovice Spolany at an RN of Kcs 135 million, which reduced gaseous emissions by 4,050 tons per year; the construction of equipment for the dedusting of the rotating furnaces and clinker coolers at the Radotin Lime and Cement Works with a budgeted cost of Kcs 52 million (reducing emissions by 1,300 tons per year); the selective reduction of nitrogen oxides at the Lovosice SCHZ at a budgeted cost of Kcs 42 million (reducing gaseous emissions by 4,000 tons per year); the dedusting of the furnaces at the Kladno United Steel Works, National Enterprise and at the Trinec Ironworks in Trinec, as well as numerous boiler reconstruction projects, the replacement of old ones with new in apartment houses and in factories of all production sectors (Fruta in Mnichovo Hradiste, the Kynzvart spa, Ceskomoravska-Kolben-Danek Dukla factory in Prague, etc.).

The measures adopted and implemented during the Sixth 5-Year Plan were not adequate, however, to compensate for the increase in emissions.

Development of Production of Air Pollutants, millions of tons/year

Indicator	Location	1970	1975	1980
solid emissions	CSR	1.6	1.2	1.3
	CSSR	2.1	1.7	1.8
sulphur dioxide	CSR	2.0	2.1	2.2
	CSSR	2.5	2.7	3.0

The development of sulphur dioxide emissions is conditioned by the development of the mining and burning of brown coal and above all by its increasing sulphur content.

The chemical industry accounted for significantly more of the gaseous emissions than previously, chiefly due to a number of unresolved problems connected with the elimination of gaseous polluting substances.

The development of solid emissions has taken an unfavorable turn. Despite increasingly effective monitoring activities (by the Czech Technical Inspectorate for Air Quality Protection, national committees and the health service) and the more consistent application of economic mechanisms, which has resulted in improved maintenance, operation, and servicing of equipment designed to protect air quality, we have not been successful in sufficiently restricting the growth in emissions created by the overall development of industrial construction. This increase came about in spite of the implementation of extensive measures at large power plants, in factory energy generation, and in certain operations of the metallurgical industry.

A particularly negative factor has been a shortage of facilities for the production and maintenance of separating equipment (even though, for example, the conditions have been created for the gradual expansion of repair facilities at Usti nad Labem, and elsewhere) and a shortage of certain spare parts. Deliveries of new separators have been directed above all to the outfitting of newly completed factories and the reconstruction of selected numbers of the most serious pollution sources. However, a significant proportion of the operational separators has already exceeded the boundaries of their planned useful life (about 10 years), which has led to a significant increase in their down time, their total useability in terms of hours, and also in their average ability to separate. It is estimated that only about 70 percent of the demand for separating apparatus produced by the Milevsko ZVVZ (solid emissions separators) was covered in the Sixth 5-Year Plan.

The quality of coal that is burned also had an unfavorable impact on the amount of emissions. Small and medium sized heating plants with boilers designed to burn coal as well as large consumers which burn energy coal in pulverized fuel boilers have often been supplied with coal of poorer quality than they need, with higher ash and water content. There has been a decline in the mean heat value of the fuel to a point below the established limit, which has led to the "forced" introduction on a more frequent basis of stabilizational heavy oil burners, which has a negative effect on separator operation (especially the electrofilters).

Some old and physically obsolete pieces of equipment have also come to have an unfavorable influence on production operations.

In the area of the disposal and utilization of wastes, 22 projects were begun during the 5-year plan with budgeted costs of Kcs 580 million (7 percent of total RN for environmental protection), with 9 projects valued at a total of Kcs 330 million being completed. These were primarily investment projects for the disposal of industrial wastes in the industrial and fuel and power sectors. Their implementation was in most cases a condition for the further uninterrupted operation of production facilities. This was the case in the construction and expansion of dumps for the ashes, clinker and cinders from electric power plants (such as at the heating plant in Ceske Budejovice, at CHEZA in Zaluzi, etc.). In addition, a number of storage facilities for solid waste related to "Project Z" were established, but as sub-Kcs 2 million investment projects under the jurisdiction of national committees.

The majority of solid waste has for the most part been stored, although the increase in managed dumps (especially central ones), i.e., those with permits and run according to applicable regulations with a minimum of impact on the environment, has been unsatisfactory. The percentage of spontaneous ("wild") dumps has remained too high.

Significant underutilized capacity remains in the utilization of the sludge generated by COV's by separating insoluble compounds and through biological cleaning processes. (This is mostly because of a lack of centrifuges and filter presses.) There has been a similar situation in the buying up and processing of used oil. The number of municipal incinerators has not changed.

In accordance with CSR Government resolution No 314/1974, priority has been given to the solving of the problems of environmental protection in the main industrial concentrations of the CSR. The basic tasks of the Set of Measures for the Long Range Development of Environmental Enhancement and Protection has either been fulfilled in these areas or fully specified. We have been successful in establishing a systematic approach to concern for the environment. Certain discrepancies, to be sure, have arisen in the fulfillment of individual objectives (uneven fulfillment, quantitative and qualitative differences) between the North Bohemian Basin, Prague, the Ostrava-Karvina Basin and the other designated areas, but these have on the whole corresponded to the differing complexities of the environmental protection problems. They also arose because in some of the areas the approach to solving the problems had already been decided upon, while in others the basic conditions for a solution still had to be created.

Of the total RN for initiated construction projects related to environmental protection, 64 percent were allocated to industrial agglomerations.

These construction projects represented 48 percent of the resources allocated to the water quality protection sector, 69 percent of the resources allocated to protecting air quality and 81 percent of the resources devoted to the disposal and use of wastes. Prague and the North Bohemian Brown Coal Basin were the recipients of 42 percent of all budgeted costs and 53 percent of all projects designated for the agglomerations.

The territorial distribution of investments for environmental protection moved during the 5-year plan roughly in accordance with the environmental situation in the country and the needs of the national economy, as shown in the following table.

Utilization of Investment Resources for Environmental Protection by Kraj and by Selected Component of Environment

Kraj (1)	Opatření (2)							
	k ochraně čistoty vod (3)		k ochraně čistoty ovzduší (4)		k využití a likvidaci odpadu (5)		Celkem (6)	
	počet akcí (7)	RN v mil. Kčs (8)	počet akcí (9)	RN v mil. Kčs (10)	počet akcí (11)	RN v mil. Kčs (12)	počet akcí (13)	RN v mil. Kčs (14)
Praha (15)	6	350	23	700	—	—	29	1050
Středočeský (16)	18	220	24	580	3	120	45	920
Jihočeský (17)	13	350	11	140	2	30	26	520
Západočeský (18)	3	70	26	1170	3	40	32	1280
Severočeský (19)	9	90	36	730	8	300	53	1120
Východočeský (20)	11	290	22	380	2	20	35	690
Jihomoravský (21)	8	130	25	590	1	10	34	730
Severomoravský (22)	12	440	26	960	3	60	41	1460

Key:

1. Kraj
2. Measures
3. To protect water purity
4. To protect air quality
5. To use or dispose of wastes
6. Total
7, 9, 11, 13. Number of projects
8, 10, 12, 14. RN in millions of korunas
15. Prague
16. Central Bohemian
17. South Bohemian
18. West Bohemian
19. North Bohemian
20. East Bohemian
21. South Moravian
22. North Moravian

The overall RN for initiated construction projects was the highest in the most polluted territories, i.e., in the North Bohemian and North Moravian krajs and in Prague, with the least attention devoted to the South Moravian kraj, where the conditions of the environment is, relatively speaking, the best. The quality of the West Bohemian kraj is influenced by the above-mentioned construction of power plants.

The analysis of investment effectiveness related to environmental protection indicated that despite the limited possibilities of the national economy, significant resources were devoted to these objectives in the CSR during the Sixth 5-Year Plan. Construction was begun on a number of important and costly investment projects. Very positive results were achieved, for instance, in restricting localized sources of air pollution by centralizing sources of heat. At the same time, priority was given to solving the problems of the eight industrial agglomerations.

Nevertheless we were not successful in arresting the unfavorable trends in water and air pollution. The increase in their sources has been fairly rapid, while the implementation of important projects is for the most part a long-range endeavor, the favorable impacts of which will become evident only during the current 5-year plan. Moreover, the number of initiated projects in relation to total costs indicates that we must differentiate to a greater extent and concentrate resources above all on projects that will have a rapid and significant impact. The obtaining of enough spare parts and assembly capacity is a large problem. These and other comments were available for use in drafting the Seventh 5-Year Plan.

Within the context of draft preparations for the Seventh 5-Year Plan, in the interest of the most rational utilization of limited investment resources and to improve the environment mainly in industrial agglomerations, the Czech Planning Commission issued in 1979 guidelines for the formulation of a Draft Program for Improving the Environment in the 1981-1985 Period in Affected Areas of the CSR. On the basis of this the appropriate kraj national committee worked out, in cooperation with environmental committees of national committee councils and with enterprises and organizations, a "Draft Program" for individual industrial agglomerations for application to the long-term objectives of the sectors and their own conceptions for environmental development.

These programs became not only a significant foundation for the preparation of the Seventh 5-Year Plan, but given regular updating and implementation they will also serve in the preparation of annual plans, for the adoption of additional decisions, and as the conceptual basis for planning environmental protection in the investment area.

Central planning agencies also adopted for the Seventh 5-Year Plan additional measures in the environmental protection area. These were in part updated unified methodological guidelines for preparing a draft of the 5-year plan.

To improve investment effectiveness related to environmental protection, the organizational assurance of the implementation of annual implementation state plans for national economic development was supplemented beginning in 1980 with the responsibility for the explicit conduct of an inspection of the fulfillment status of projects included in the state environmental protection plan during each quarterly inspection of plan fulfillment.

The governments of the CSSR and the CSR have also concerned themselves with the state of the environment and its further development during the Seventh 5-Year Plan. In resolution No 252/1980 (CSSR) and No 245/1980 (CSR) related to the report on the current situation and on measures for the enhancement and protection of the natural environment, both governments approved a set of measures to solve the existing problems. Limitations on investment volume and significant reductions in the numbers of initiated construction projects could not, however, remain without an impact on original intentions and the measures for environmental protection. Nevertheless, during the current 5-year plan a number of successes have been achieved in the resolution of problems, such as:

--in 1981 the implementation of 35 construction projects related to the quality of the water and air, and for the disposal or utilization of wastes was initiated, with total RN of Kcs 0.5 billion;

--under the jurisdiction of national committees, in 1981 28 construction projects were completed in the areas of water and air quality, with total budgeted costs of more than Kcs 0.4 billion;

--the most important investment projects are being incorporated into national economic plans at a higher level of priority;

--there has been some improvement in the supplying of measurement instruments for water and air quality protection;

--a program is being formulated for the construction of smaller COV's to be constructed primarily within the context of "Project Z" to resolve local water pollution problems;

--priority deliveries of equipment have been assured for the overhaul of solid emissions separators at critical sources of air pollution in the sector managed by the Federal Ministry of Fuel and Power (in the North Bohemian Brown Coal Basin, for instance, this includes 14 electric power plant units, where an expenditure of Kcs 200 million will result in a reduction in solid emissions of about 82,000 tons per year);

--the development of fluidized boilers is being assured, along with operational verification, at the Trmice heating plant;

--in 1982 several additional significant projects were begun, such as the desulphurization of expansion gases at the Z. Zapotocky Fuel Combine in Uzin at a budgeted cost of Kcs 167 million, and of COV's at the Mohelnice Moravian Electrical Appliances Plant at a budgeted cost of Kcs 40 million, as well as Spindleruv Mlyn with a budgeted cost of Kcs 60 million, etc.

In the water quality protection sector, projections call above all for the beginning of construction of a COV in Ceske Krumlov at RN of Kcs 220 million and of a number of smaller COV's. During this 5-year plan the construction, reconstruction and/or upgrading of almost 50 COV's is to be completed at a budgeted cost of Kcs 1.7 billion.

In environmental protection, priority will continue to be given to investment measures related to air quality, especially in the industrial agglomerations. Preparations are being made to begin construction on experimental desulphurizing equipment at one unit of the Tusimice II 200 megawatt electric power plant at RN of Kcs 1.1 billion.

In the Ostrava-Karvina Basin, in addition to beginning construction related to the dedusting of the sintering belts at the Klement Gottwald Ironworks in Vitkovice, preparations are also being made for the investment intensive dedusting of the boilers at the Kuncice New Metallurgical Works of Klement Gottwald. The completion of these projects will significantly reduce air

pollution by solid particles in this agglomeration. The elimination of the smell of expansion gases at the 25th of February Fuel Combine in Vresova will improve the air quality of the Sokolov area.

In addition, the extensive program of centralizing heat sources will continue. During this 5-year plan construction should begin on nine heating plants and tens of kilometers of heat feeder lines at total budgeted costs of more than Kcs 2.3 billion.

Increased attention will also be devoted to the disposal and use of wastes. Construction is projected of dumps for industrial wastes at a total RN of more than Kcs 1.2 billion (with about half of this going to the building of ash dumps for electric power plants). Construction is being given in Ostrava to the construction of a municipal incinerator or a processing plant for solid municipal wastes. Providing for domestic production of filter presses for COV's should expand the possibilities for using COV sludge.

Resolving the problems of environmental protection will not be a simple task either in the Seventh or in future 5-year plans. Results will influence not only the amount of investment resources devoted to environmental protection but also their effective and economical utilization. Measures of a non-investment nature will, however, assume ever greater importance; these include adhering to technological discipline, maximizing the utilization of existing equipment for the entrapment and elimination of polluting substances, the adherence to valid regulations and standards, as well as discipline and a sense of individual responsibility to oneself and society.

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ECONOMIC COOPERATION WITH SRV INTENSIFIED

AU191451 [Editorial Report] Prague RUDE PRAVO in Czech on 16 December carries on page 6 a 750-word article by Jaroslav Danhelka, entitled "Cooperation With a Distant Partner, New Forms of Cooperation and Specialization Between the CSSR and SRV."

Danhelka begins by mentioning that cooperation between the CSSR and the SRV "has certain specific problems: immediately after their victory over the United States, and after the unification of the SRV, the Vietnamese comrades found themselves faced with the task of ensuring employment for thousands of people, above all, in the south of the country; on the other hand, our own economy must narrow down the range of products produced, and increase its specialization." Cooperation between the light industries of the two countries proved beneficial in this respect, the author continues; it now consists of deliveries of basic machinery, equipment, and materials, as well as of technical assistance. Currently, production cooperation operates in four spheres:

For a long time, the upper parts for footwear production have been in short supply, limiting the CSSR's production of rubber-textile goods, the article notes. But the TRANSAKTA enterprise, in cooperation with the SVIT plant in Gottwaldov, the ZGK plant in Trebic, and the ZDA plant in Partizanske, is now supplying Vietnamese enterprises with machinery, material, and technical assistance for the production of upper parts, and production volume is planned to amount to 3.5 million parts, Danhelka says.

Likewise, until recently, work clothes have also been in short supply, and our needs were partly covered by imports from Vietnam, the article continues; in view of the lack of basic raw materials for these products in Vietnam, cotton yarn is now being bought in India and Vietnam will now be able to deliver about 1 million pieces of working clothes to the CSSR.

The TRIOLA national enterprise is supplying materials and technical assistance to the SRV for the production of men's shirts; and the SRV is also supplying the packaging materials. In 1980 the Vietnamese produced 600,000 luxury shirts, and this year's plan counts on the production of 1.5 million shirts, the article states.

Another commodity in short supply is cotton underwear--the CSSR market would need about 5 million pieces over and above the present quota. The Hanoi enterprises will be delivering about 3 million pieces of underwear annually, and the CSSR will supply them with CSSR-made cotton yarn, needles, adjustment material, and technical assistance from the PLEAS national enterprise in Havlickuv Brod, the article states.

Danhelka then notes the various difficulties in Vietnam's economy, such as the lack of energy and raw materials, the high humidity which is making the products moldy, and so forth.

Cooperation with the CSSR is providing work for "at least 2,000 Vietnamese," the article states, and the 12 CSSR experts currently working there will be gradually replaced by Vietnamese trained in the CSSR, or in Vietnamese enterprises on the spot.

The Vietnamese cooperation, the article concludes, enables the CSSR enterprises to increase their production and their range of products, and also to free facilities for export production.

CSO: 2400/159

ENGINEERS EXTENDING LIFE OF SPARE PARTS

Bratislava PRAVDA in Slovak 14 Dec 83 p 3

[Article by Engr. Lubica Viestova, technician of Udrzba Plant of the Vychodoslovenske Zeleziarne in Kosice [VSZ]]

[Text] One of many ways of extending the life of spare parts in the Udrzba Plant of VSZ is nitridation. This is a process in which the steel surface is saturated by nitrogen. Even with just a relatively thin surface coat, the parts gain a number of significant properties. It [the coat] is very hard and the surface is resistant at up to 500° of Celsius temperatures, the level of fatigue is raised by about 25 to 35 percent, and it is resistant to atmospheric, water, and steam corrosion.

In the tempering plant of the central machine shops, the nitridation takes place in gas environment--in electric nitridation bell furnaces. Parts to be nitridated are refined and finished, to include any grinding, prior to going to the furnace.

Several ways to nitridize are known. We are using the method developed by Professor Zabavnik from the Metallurgical Faculty of the Science University of Kosice, a process patented in CSSR. It is a two-step nitridation process involving difuse annealing. The first stage is a standard intensive saturation with nitrogen under a high partial NH_3 pressure. In the second stage, a difuse layering in a neutral N_2 atmosphere takes place; the nitrogen pressure here is just sufficient to cause a marginal positive pressure in the furnace. This achieves a more balanced and better difusion of the nitridation layer into the steel. At the same time, the development of the brittle phase on the surface of the nitridized part is suppressed. Compared to the standard nitridation, the process is shorter and the gas and electric energy consumption are lower while the production capacity increases.

The machine parts which have been nitridized in the central machine shops have a 60 to 150 percent longer economic life compared to standard parts. From our point of view, nitridation has an important part to play, particularly because it increases the life of the spare part thus making a significant economic contribution in reducing the cost.

It is necessary to utilize this technology as much as possible. Therefore, we are, for example, planning to use material from scrapped rollers from the cold rolling mills for spare parts production using the nitridation process. We also expect good results from nitridation of machine tools and of spare parts which have not been repaired by welding.

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USE OF FIELD MANURE ENCOURAGED

Bratislava ROLNICKE NOVINY in Slovak 22 Oct 83 p 3

/Article by Stefan Mesaros: "For Increased Fertility: The Ecological and Economic Aspects of the Construction of Field Manure Pits"/

/Text/ "The more intensive utilization of barn manure has, basically, three advantages; it conserves energy, contributes to an increase in the circulation of mineral nutrients, and assists in maintaining and improving soil characteristics." Professor of Soil Biology of Charles Univeristy, Jaromir Seifert, confirmed once again with these words the validity of previous experiences which have shown that barn manure cannot be treated as valueless waste, but should rather be considered as a valuable material for soil enrichment.

The importance of these principles was understood by our earlier farmers, who devoted a great deal of attention to the storage and utilization of barn manure.

Departure From Tradition

In the 1950's industrial fertilizers began to be used to a much greater extent. People became accustomed to this way of adding nutrients to the soil and over time it came to be taken for granted. And what was worse, inorganic fertilizers came to be more advantageous than organic fertilizers in terms of price relationships. This naturally led to a decline in interest in the utilziation and treatment of barn manure.

The farmers were, however, justified in taking this attitude. After all, production costs (for machinery, seed, fuels) were increasing every year, while the prices for agricultural products were not increasing proportionally. Agricultural enterprises therefore began to implement the technique of trying to produce the maximum output for the least cost. Industrial fertilizers were one of the ways which made it possible to add necessary nutrients to the soil at lower costs than incurred in the use of barn manure. It was no longer necessary, for instance, to tow heavy trailers onto the fields loaded with manure--a few bags were sufficient. It was easier to apply these, and there were also fuel savings. Farm machinery producers then added their own negative input to this when, at the request of the farmers, there were suddenly fewer spreaders for organic fertilizers. Farm outbuilding construction even came to be oriented towards the building of barn facilities without collecting systems. It was,

after all, simpler to build a single storehouse for industrial fertilizers than to construct numerous field manure pits.

It is clear that without industrial fertilizers we would not be able to increase fertility under the conditions of contemporary agricultural mass production. Barn manure alone would not be adequate. But, as in everything, in this as well moderation must be respected, and the use of both types of fertilizer combined in an appropriate fashion. Certainly, in some agricultural enterprises the application of inorganic fertilizers has gotten out of control. This has been accompanied not only by high consumption of industrial fertilizers (300 kilograms per hectare of arable land, thus increasing the possibility for devastating the environment) but also by the reality that their excessive and exclusive use was worsened the quality of the soil.

This is because whenever increasing harvests are taken from soil without putting back into the soil organic fertilizers, the soil loses humus. Simply plowing under the remaining crop stubble is not sufficient to replace the lost organic matter. For this reason, most agricultural enterprises which have an interest in maintaining the fertility of their land for the future are devoting attention to the treatment of barn manure in quality field pits.

The Prievidz Example

Our forefathers judged a farmer by his manure pits. There was a proverb--A farmer is as good as his manure pits. But in the Prievidz okres they partially forgot about this old truth and until recently had been giving priority to industrial fertilizers. What is important, however, is that they remembered the old principles in time. In the last 5-year plan they began to deal with this problem seriously, and as a result proceeded with plans for the construction of appropriate storage facilities, field manure pits. It is also significant that they began to implement these plans in this, the Seventh 5-Year Plan. Three years ago we wrote about the first field manure pit, which they were building at Lazany, at which time we praised the inventiveness of the local farmers. Events then proceeded as though the other agricultural enterprises did not want to let themselves be gotten the better of. In the first 3 years of the current 5-year plan new, high capacity field manure pits were constructed at the Nitrianske Pravno state farm, in Handlova, and, at the Diviaky nad Nitrica and Mier D Vestenice united agricultural cooperatives /JZD/.

Construction has been proceeding and currently manure pits are being built at the Zemianske Kostolany state farm, in Handlova, at Nitrianske Pravno and two at the Kos JZD.

"Our farmers have comprehended the importance of building field manure pits, and it therefore is not surprising that in upcoming years we will be constructing more of them. We want to build new, high capacity manure pits at the Oslany JZD, additional ones at Diviaky, at the Opatovce, Prievidz and Nedozery-Brezany JZD and at the Nitrianske Rudno state farm," said Eng Stefan Struhar, manager of capital construction at the District Labor Center in Prievidz.

Prepared To Share Experiences

Of course attention is being paid to the proper storage and therefore as well the quality production of barn manure in many more agricultural enterprises, not only those in the Prievidz okres and not only those which we have mentioned here. For instance, the farmers of the Luc na Ostrove JZD in the Dunajska Streda okres, which is among the leading performers in Slovakia in terms of agricultural results, are known for their full appreciation of the significance of organic fertilizers for the production of agricultural products.

We have placed the Prievidz okres in the forefront because it has been devoting extensive attention to this program for a number of years now and has attempted to adapt it to the conditions of the entire okres. In addition to this they are prepared to share their experiences with farmers not only from neighboring okreses, but from more distant areas as well. We have learned of this type of assistance even in the Povazska Bystrica okres. In addition to the construction of field manure pits and the proper treatment of barn manure, they also provide, through the Agrochemical enterprise, for its transportation and proper spreading prior to plowing.

We are also citing the good example of the Prievidz okres so as to challenge other farmers in Slovakia. According to the most recent data of the Ministry of Agriculture and Food of the SSR, the construction of field manure pits is stagnating, although the opposite should be true. And individual agricultural enterprises should be aware of this. After all, it is only under good conditions that it is possible to produce high quality organic fertilizers which will help not only to restrict the consumption of industrial fertilizers, thereby conserving energy (more than 900 kilowatt hours of energy is necessary to produce industrial fertilizer with the nutritional value of a single wagon of barn manure), but also to maintain soil fertility.

The construction of high capacity field manure pits also conserves the soil stock. For instance, at the Handlova state farm the construction of a central field manure pit made possible the dismantling of seven prevous temporary pits. Well-insulated storage facilities also prevent the leaking of harmful substances into the ground water. Nor does the interface between the pit and the surroundings becomes weed-infested, because the new pits have raised, hard sides.

As is evident, there are many advantages, and therefore the program of construction of field manure pits should be implemented to an increasingly greater extent in agricultural practice.

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BRIEFS

SLOVAK SUGAR BEET HARVEST--According to Eng Ladislav Sarvari, general director of the Sugar-Sweets economic production unit, the procurement of sugar beets has ended in Slovakia. Slovak sugar refineries procured 1.67 million tons of sugar beets, which is only 79.6 percent of the planned quantity. Owing to the long drought between July and September, per-hectare-yields averaged only 29 metric tons. However, the poor harvest is also due to the farmers' failure to fulfill the planned sowing area--they had sown sugar beets on 3,400 hectares less than planned. Besides, harvest losses were 5 percent higher than in 1982. This was due to the beets' [word indistinct], caused by dry soil. The quality of the sugar beets, on the other hand, is superior to last year's. Since the beginning of the campaign, the beets' sugar content averages 15.21 percent. [Summary] [Bratislava PRAVDA in Slovak 17 Dec 83 p 2 AU]

PROTOCOL WITH ROMANIA--Alois Hloch, CSSR deputy minister of foreign trade, and Ion Stoian, Romania's deputy minister of foreign trade and international economic cooperation, signed a protocol on 7 December in Prague on the mutual goods exchange between the two countries. The protocol envisages a 4.3-percent increase in the exchange volume, compared with 1983. The CSSR will deliver to Romania machine tools, equipment for the power and textile industries, heavy-and-light-current semiconductors, TATRA trucks, coke, coal, metallurgical products, magnesite and magnesite bricks, various chemicals, and raw materials. Romania will deliver to the CSSR engineering products, metal-working and shaping machinery, high and low voltage appliances, metallurgical equipment, machinery and equipment for the textile industry, computer technology, railroad cars, and DACIA passenger cars. [Summary] [Prague RUDE PRAVO in Czech 8 Dec 83 p 2 AU]

COOPERATION WITH KAMPUCHEA--On 9 December a protocol on goods exchange between the CSSR and Kampuchea in 1984 was signed in Prague. The CSSR will import caoutchouc, soya bean, and exotic timber; it will export logging tractors, chemical raw materials, tires, diesel aggregates, and metallurgical material. The protocol was signed by Jan Stracar, CSSR deputy minister of foreign trade, and Tong San [name as published], Kampuchean deputy minister of domestic and foreign trade. [Summary] [Prague RUDE PRAVO in Czech 10 Dec 83 p 2 AU]

CONTRACT WITH NICARAGUA--Representatives of the CSSR's STROJIMPORT shareholding company and of the Nicaraguan Association for Textile and Confection Production signed an agreement in Managua that will contribute to developing the Nicaraguan textile industry. [Text] [Prague RUDE PRAVO in Czech 6 Dec 83 p 7 AU]

POLAND'S CEMA TRADE--Poland's goods exchange turnover with the CEMA countries this year will amount to R14 billion, which is R3 billion more than in 1980. Its exports will exceed its imports by R530 million, which is R300 million more than 3 years ago. By the end of this decade its trade exchange with the CEMA states should amount to R20 billion. In 1983 the USSR will deliver to Poland goods worth R5.4 billion; the mutual deliveries will total to R9.8 billion. Exchange with the CSSR this year will amount to R1.5 billion (the same figure applies to the GDR), and will thus reach the level of 1980. The CSSR is cooperating in the completion of seven important industrial projects in Poland. [Summary] [Prague RUDE PRAVO in Czech 6 Dec 83 p 6]

NEW BRATISLAVA BRIDGE--A new expressway-cum-railroad bridge spanning the river Danube in Bratislava, named The Bridge of Dukla Heroes, was partially opened to traffic on 17 December. The remaining part of the bridge is expected to be completed on 7 November 1985--2 months ahead of schedule. [Summary] [Bratislava PRAVDA in Slovak 19 Dec 83 pp 1, 2 AU]

COAL BASIN FULFILLS PLAN--The North Bohemian open-pit mines, the largest coal basin in the CSSR, fulfilled its 1983 coal extraction plan on 19 December by delivering to large consumers and households 67.7 million metric tons of brown coal. The annual plan for the removal of overburden--177 million cubic meters--was fulfilled on 11 December. For the first time since 1979, the coal basin thus met all targets of the annual plan. By the end of the year, the North Bohemian miners would like to extract an additional 2 million metric tons of coal, thereby eliminating the shortfall accrued in the first 2 years of the 5-year plan. [Summary] [Prague RUDE PRAVO in Czech 20 Dec 83 p 1 AU]

INCREASED DELIVERIES FROM USSR--During the first half of 1983, the USSR delivered to the CSSR 21 extraction combines, instead of the planned 16; and also spare parts for mining equipment worth more than R1.2 million, instead of the planned R300,000. [Summary] [Bratislava PRAVDA in Slovak 22 Dec 83 p 6 AU]

COAL EXTRACTION RESULTS--At his press conference on 21 December, Vlastimil Ehrenberger, CSSR minister of fuel and energy, stated that the annual coal extraction plan (123,850,000 metric tons) has already been fulfilled and that the miners are expected to overfulfill it by more than 3 million metric tons. The annual production plan for electric power is expected to be overfulfilled 1.5 percent. The regular natural gas deliveries from the USSR have led to the stocking of 2.1 billion cubic meters of gas in subterranean reservoirs. The situation is stabilized in city gas. [Summary] [Bratislava PRAVDA in Slovak 22 Dec 83 p 2 AU]

CSO: 2400/159

SOIL CONDITIONS: REVIEW 1983, PROJECTIONS 1984

East Berlin BAUERN-ECHO in German 1 Dec 83 p 7

[Article by Meteorologist W. Schwinge, Meteorological Service of the GDR, Potsdam Central Weather Service Office, Agrometeorological Advising: "Being Prepared to Start Sprinkling Early"]

[Text] Overall winter precipitation in 1982/83 was within the range of normal levels (95-115 percent; in the Magdeburg, Halle and Erfurt areas 80-90 percent). November and February were generally too dry, but January was mostly too wet, while December precipitation was normal. The considerable soil moisture deficit existing in the fall of 1982 was noticeably reduced as of December. At the end of March, in the northern half more than 80 percent and in the southern half 50 to 85 percent of usable field capacity was measured in the layer reaching to a depth of down to 50 cm.

Daytime air temperature averages in the central lowlands and in the Cottbus, Halle, and Leipzig Bezirke sustainedly exceeded the 5-degree Celsius limit (beginning of the vegetation period) on 5 March (16 to 22 days early) in the Gera and Dresden districts on March 14/15 (about the normal time), in the Erfurt and Karl-Marx-Stadt Bezirke and in the northern lowlands on 9/10 April (5 to 15 days late), and in the highlands areas with altitudes of up to 600 meters HN on 16 April (10 days late). With the exception of April and May, there almost continually existed a phenological development headstart of mostly 5 to 10 days and, in the case of ripening phases, occasionally even of 15 days.

Lengthy periods with above-normal air temperatures set in the second half of April and existed almost continually in June and July and from 8 August to 2 September. In comparison with normal temperature readings, it was too cold in the first half of April, in the third 10-day period of May, in the time around 16 June and from 3 to 6 August.

Daytime mean temperatures of above 15 degrees Celsius (a prerequisite for a good watering effect) existed from April to September in the low and hilly areas of up to 600 meters HN on 70 to 80 days. With respect to the air temperatures, favorable conditions for sprinkling existed in the first half of June, throughout July, and from 8 August to the beginning of September. With respect to relative air moisture, favorable watering possibilities existed particularly in July and August, as well as in the third 10-day period of June.

Due to frequently above-normal and temporarily even extremely high air temperatures and high evaporation losses, the water utilization systems of the plants were subjugated to extreme stresses in this time period.

Lengthy periods with a widely dispersed high atmosphere-caused evaporation factor were rather frequent (17-21 May, 2-12 June, 19-28 June, 7 July to 8 August, 11-16 August, and 25 to 31 August).

The highest daily totals (4.0 to 6.0 mm) were noted over various areas in the first half of the third 10-day period in June and on 27 July, as well as on some days in August. High evaporation levels in many instances required maximum exploitation of the existing watering capacities.

Weather periods with frequent precipitation existed in the first half of April, from 26 April to 4 May, from 8-16 May, on 15 June, 27 June to 1 July, and in the first 10-day period of August, as well as from 9-22 September. Plentiful precipitation was recorded only on a few days, especially during the first 5 days in August (Table 1).

Up to the first 10-day period in June, precipitation resulted in an adequate water supply for the plants. Thereafter, the lengthy dry periods exerted severe strain on the plants. Only within small areas did rain bring about a brief improvement of the situation.

The initial moisture level calculation for the EDV sprinkling consultation on 25 May showed for the layers with a depth of as far down as 50 cm only 85 to 100 percent of the NFK [Normal Moisture Level], and at L.O. locations only 60 to 85 percent of NFK. In the lower layer (50 to 101 cm depth) the readings in the northern half were between 85 and 100 percent of NFK, and in the southern half between 40 and 70 percent of NFK. The mostly ascending tendency of the soil moisture level continued until the end of the May. The moisture deficit was thereby reduced to a far-reaching extent. As of the beginning of June, a clearly negative climatic water balance (precipitation minus evaporation) resulted in a considerable reduction of the ground-water reserves. In the central and southern lowlands the soil moisture receded below 50 percent of NFK in the course of the second 10-day period of June, and in the north the same thing happened as of the third 10-day period of June.

Starting out on light ground, levels of 30 percent of NFK were reached as of the middle of the month. In July, the soil moisture level was within the range of the permanent wilting point at almost all measuring locations. The abundant rains falling particularly in the southeast in the first 5 days of August, with the exception of the northwest, brought about a noticeable increase of the ground water reserves which, however, did not last. At the end of the month they generally were again below 30 percent of NFK and in the southeast barely still above 40 percent of NFK.

The rainfalls in September increased the soil moisture only in the topsoil layer. The wilting point was somewhat crossed over only in some small areas (especially in the north). On 31 October the following moisture deficit levels existed down to a depth of 1 meter: light soil 100 to 150 mm, medium light soil 100 to 180 mm, and heavy soil 130 to 200 mm.

Up until the end of May, it was generally not necessary to carry out watering measures. In connection with the rapid drying out of the soil, the need for additional water developed on a broad scale. This was the case first in the Cottbus, Dresden, Leipzig, and Karl-Marx-Stadt Bezirke. As of the middle of June there existed a generally strong need for sprinkling. The plants were all ready for having plenty and easily available moisture. In the interest of an as balanced as possible water supply, it was most important to make water applications in quick succession but in small quantities in each case. For summer seeding, preparatory sprinkling had to be carried out on a broad basis.

1 Tabelle 1: Bezirksmittel des Niederschlages 1983 (bis 500 m HN)

2 Bezirk	3 April bis Juni mm	4 Prozent des Normalwertes	5 Juli bis September mm	6 Prozent des Normalwertes
Rostock	250	180	85	44
Schwerin	268	181	71	737
Neubrandenburg	236	167	74	39
Potsdam	184	131	102	56
Frankfurt	208	151	120	67
Cottbus	164	107	178	94
Magdeburg	212	151	93	53
Halle	210	144	181	106
Erfurt	261	154	147	77
Gera	248	139	178	90
Suhl	268	142	162	76
Dresden	185	93	222	97
Leipzig	196	120	202	104
Karl-Marx-Stadt	227	101	235	93

7 Tabelle 2: Gebietsmittel der klimatischen Wasserbilanz 1983 in mm

8 Zeitraum	9 Küste	10 nördliches Binnentiefland	11 mittleres Tiefland	12 südliches Tief- und Hügelland
1. 4. bis 20. 4.	+ 40	+ 55	+ 50	+ 55
21. 4. bis 30. 4.	+ 15	+ 5	— 10	— 20
1. 5. bis 31. 5.	+ 50	+ 75	+ 45	— 5
1. 6. bis 25. 6.	— 65	— 65	— 75	— 55
26. 6. bis 30. 6.	+ 15	+ 10	— 5	— 10
1. 7. bis 31. 7.	—115	—115	—125	—110 (1)
1. 8. bis 5. 8.	+ 20	+ 15	+ 40	(2)
6. 8. bis 5. 9.	— 90	— 90	— 90	— 75
6. 9. bis 15. 9.	+ 10	0	0	+ 5
16. 9. bis 30. 9.	— 10	— 10	— 15	— 15

13 (1) Bezirk Halle – 85 mm

14 (2) Bezirk Cottbus +60, Halle +55, Erfurt +30, Gera +55, Dresden +125, Leipzig +120, Karl-Marx-Stadt +130 mm.

[Key on following page]

Key for Tables 1 and 2:

1. Table 1: Mean Bezirk Precipitation Level in 1983 (up to 500 m altitudes)
2. Bezirk
3. April to June
4. Percent of normal level
5. July to September
6. Percent of normal level
7. Table 2: Area average of 1983 climatic water balance in mm
8. Time period
9. Coast
10. Northern inland lowlands
11. Central lowlands
12. Southern lowlands and hilly country
13. (1) Bezirk Halle - 85 mm
14. (2) Bezirk Cottbus +80, Halle +55, Erfurt +30, Gera +55, Dresden +125, Leipzig +120, Karl-Marx-Stadt +130 mm

The effectiveness of the watering activities was reduced through very high unproductive evaporation losses and in cases of cultures with low heat requirements. The precipitations in the beginning of August temporarily ensured the supply of natural moisture. A high requirement for additional water supply developed in the northwest at the end of the first 10-day period and then again, on a broad basis, in the course of the second 10-day period. In the third 10-day period it became necessary to sprinkle again also in the southeast. The consistent dearth of precipitation required very economical water consumption, except in the first half of August. It was therefore inevitable that in planning the sprinkling activities one had to concentrate on fruit categories which promised a high yield increase as a result of their being watered.

The great need for watering continued also in September, due particularly to the soil which had dried up to a point within the vicinity of the permanent wilting point. The climatic water balance was to a far-reaching extent evened out as of the second 5 days of September, and in some areas the balance was a slightly positive one. The plants' need for water consumption was somewhat lightened by reduced solarization and nocturnal dew. Continued additional sprinkling was advisable in the interest of a balanced winter seasoning.

The watering period once more had to be extended to a maximum degree and generally came to an end by the middle of October. The 1983 vegetation period can on the whole once more be assessed as one requiring much sprinkling activity.

Additional water requirements were low only in the case of fruit categories the sprinkling period of which is May/June, but they were mostly high to very high in the other cases. The volume of necessary additional water requirements amounts to from 5 to 20 percent of the multi-year average (and in the south to approximately 30 percent). The highest water requirement generally existed in the central lowlands. (Table 2)

The ground-water levels were raised from March to May and, at the coast, to June by 0.2 to 0.4 meters, and in the Oder/Havel area by up to 0.7 meters. Then it receded by 0.1 to 0.4 meters. The tendency to recede continued through October. The ground-water levels were within the range of the multiyear mean values at the coast, but elsewhere were mostly 0.2 meters to 0.4 meters below them. Damming-up operations in the ground-water control installations began in the first 10-day period of June. Efforts were made to attain the maximum damming-up target level as of the third 10-day period in June. With the exception of the northern districts it was only possible in the first half of August temporarily to reach two-thirds of the maximum summer water-damming target. The insufficient ground-water reserves in most instances required maximum damming up of water still in October. And even beyond this, all possibilities for water retention should absolutely be utilized.

The ground-water reserves existing in the fall of 1983 in dispersed areas are at levels of under 30 percent and, in part, even under 10 percent of NFK. The existing soil moisture deficit can only be reduced or balanced out effectively through a clearly above-normal precipitation volume in the coming winter. And such precipitation would mostly have to come in the form of rain, and there would have to be only a minimal amount of above-ground drainage. The soil areas which, particularly in the south, have in many instances become hardened, are only to a modest extent capable of absorbing water. It must therefore be assumed that one may in the coming months hardly expect any water saturation.

Only in some small areas (especially in the north and on light soil) may it be expected that the soil moisture will in March of 1984 exceed 80 percent of NFK. If one assumes a normal volume of precipitation in the spring of 1984 then, in the layer with a depth of down to 50 cm, 50 percent of NFK will in the course of the first half of April probably not be reached. This makes it necessary to aim at a timely beginning of the sprinkling measures.

Because of the low soil moisture level, winter seasoning develops an efficient root system. From this one may assume that the moisture reserves existing below the upper soil level will also be used up rapidly. Consequently it will be necessary to carry out the sprinkling work most vigorously from the very beginning. The moderate to unfavorable soil structure calls for intensive mechanical care. Full completion of fall furrowing for the purpose of improving the soil's capacity to absorb water is extraordinarily important.

8272
CSO: 2300/192

CONSTRUCTION MATERIAL SHORTAGES DISCUSSED

Budapest NEPSZABADSAG in Hungarian 8 Dec 83 p 5

[Interview with Endre Szucs, deputy minister of construction and urban development, by Aniko Antal; date and place of interview not given]

> [Text] Without bricks, roofing tiles, doors and windows you could at best build only castles in the air, but not a home. And yet more and more privately financed family homes are being built, and only a minority of the owners are seeking prefabricated concrete panels for their homes. There are chronic shortages of a few types of building materials. The owner rushes from one TUZEP [Fuel and Building Material Trading Enterprise] Plant to another, and sometimes from one corner of the country to the other. He stands in queues, seeks contacts, offers tips and gives bribes. You certainly cannot envy a person who these days decides to build a house. Can this torture be avoided that takes such a toll of time, money, public morals, and nerves? How did this undesirable situation arise? What is the building materials industry doing to change things? These are some of the questions we discussed with Endre Szucs, deputy minister of construction and urban development.

[Question] The 1983 national economic plan called for the construction of 75,000 to 77,000 housing units, of which 58,000 to 60,000 were to be privately financed. Only about half of the housing units are being built with industrialized technology; and the rest, in the conventional manner, using conventional building materials. We must include here also building maintenance: in 1983 we can expect the renovation of 24,000 housing units, and the modernization of 16,000 housing units. In addition to this, about 4,500 weekend cottages are being built each year. Has the construction industry not expected this much construction?

[Answer] It did, but the actual demand for construction has jumped and is much greater than had been planned. Some of our industrial sectors--thus the brick, tile and building-carpentry industries--do not have reserve capacity with which to supply this increased demand. At the same time other sectors --the cement, fine ceramics, and glass industries, for example--not only can supply the population's increasing demand but are even able to export.

A contributing factor to the shortage of bricks is that earlier, amidst economic growth faster than at present, we expected modern building materials to make greater gains. Another consideration was that the brick industry's development would have required more capital, energy and manpower than did the establishment of house-building plants for the industrialized mass production of housing. However, practice has not confirmed all our expectations. In many countries throughout the world the brick and tile industries have been undergoing a renaissance in recent years, partially because also the trend in the development of settlements has changed. With better foresight the present shortages could have been alleviated partially, but it would not have been possible to avoid them altogether.

Three Times More Credit

[Question] To a certain extent this rise in the construction of privately financed housing is also a question of necessity. As the chances of obtaining state housing become slimmer, people are striving to erect a roof over their heads through their own efforts.

[Answer] That is true. But the government has attempted to create a more favorable situation for those who are solving their own housing problem. The conditions for borrowing are reasonable, and as a result the volume of new OTP [National Savings Bank] loans has risen sharply in comparison with the average for recent years. During the first nine months of this year, on the basis of 36,000 loan contracts (and including also the social-policy benefits), the state has provided 12 billion forints to aid the construction of family homes. This is three times the volume in the same period last year. The average loan per family home was 193,000 forints in the first nine months of 1982, but 290,000 forints in the first nine months of this year. Also the applicants for renovation and modernization loans received loans that were 36 percent higher this year. Through the efforts of the councils, the availability of building lots has improved, and all this made itself felt also in the market for building materials.

[Question] And then there was also buying in advance. Fearing shortages and price increases, everyone who could do so bought well in advance everything that was available. This is confirmed by the fact that the volumes of finished and unfinished privately financed housing construction have not increased commensurately with the volume of loans provided.

[Answer] Yes, but there is also another, gratifying reason behind the increase in the demand for building materials. Namely, the average floorspace per privately financed housing unit has been rising constantly, and to a lesser extent this is true also of the state-built housing units. Ten years ago the average family home required 25,000 to 28,000 bricks, but now even 35,000 are not enough. Or take the number of doors and windows: 15 or 16 were enough in the past, but now 21 or 22 are necessary. Of course, the amount of roofing material needed has also increased. This is the main reason of the sharp rise in the demand for conventional building materials, and also the fact that conventional building materials are substantially cheaper than the modern building materials.

Cheaper Materials More Expensive

[Question] The performance of the conventional building materials is lower than that of the modern ones, and yet the low price directs the demand toward the conventional materials.

[Answer] Indeed it does. Because of the substantial state subsidy, the price of conventional bricks is low, and modern walling materials are more difficult to sell. Because of the distorted price ratios of the modern and the conventional products, users are not interested in walling materials that provide better insulation, in less energy-intensive types of cement, or in the more modern doors and windows made of synthetic materials. Because of the low price, the industrial sector is unable to finance from its own resources even the most essential investments. Besides the investments directly related to production, therefore, such important other requirements as environmental protection, for example, are overlooked.

The distorted price ratios are detrimental to the interests of not only the producers but of the users as well. The strict heating standard that will become effective in 1986 makes modern and well-insulated residential construction mandatory. If owners continue to insist even then on using small bricks, that will be very costly. A wall 38 centimeters thick, laid with small solid bricks and plastered on both sides, meets the present specifications, but the new specs will require a wall 70 to 80 centimeters thick. Customs are difficult to change, and the use of small bricks is very widespread in the provinces. More recently even the councils have been using small bricks to build schools, kindergartens, etc., partially because brick is the cheapest building material, and partially because it is the easiest to recruit volunteers for this type of construction. At the macroeconomic level, this involves very costly investments for the development of the brick industry. If a small-capacity new brick factory is built, the investment cost of producing one brick is 12 to 15 forints. Because of this, the factory would be economical only at a price of about 4 forints per brick, but its consumer price at present is 2.10 forints.

Pay More Now or Later?

[Question] It is not easy to dissuade the buyer from small bricks today by pointing out that fuel conservation will be mandatory tomorrow. He has to pay the price of the low-cost walling material today, and he will be faced with hefty fuel bills only sometime in the future.

[Answer] What would be cheaper? To pay more now in the interest of lower operating costs tomorrow, or to save now? We believe that energy prices are convincing agitators. That is why we have planned the increasing output of modern, hollow walling materials, and they have indeed appeared in the market. This change of the product mix is proceeding successfully in the brick industry. Linked to this is the development of the production of modern doors and windows, and of heat-insulating glass. In other words, what we have here is the comprehensive development of a system of building components. Especially the insulating-materials industry has made great progress; its product assortment has been broadened, and it is able to produce more than the present demand.

[Question] We now know why the demand for building materials has increased at such a rate. We also know why the product mix now in demand is not desirable. Let us now discuss how production is adjusting to all this.

[Answer] Production, and also trade. For domestic supply is determined not only by domestic production. Recognizing the problem, the State Planning Commission and the Economic Committee acted very quickly and decisively. Some of the measures were directed toward solving the present problems as soon as possible; and the others, toward the future tasks. In the interest of resolving the present situation, we have strived to maximally utilize the productive forces, and we are supporting these efforts with effective financial incentives.

Besides the qualitative requirements, we have encouraged the enterprises to increase their output by as much as possible. The factory receives money to pay additional wages on the basis of the finished product. Under the influence of this incentive, the brick industry has increased its output of small bricks this year by enough for 2,300 housing units. Domestic supply has increased by 1.5 million cubic meters of roofing tiles, 400,000 linear meters of reinforced-concrete beams, and 190,000 wooden doors and windows. Just like the miners, the workers in these industrial sectors produced the additional output by working Saturdays and Sundays, and for this they deserve our thanks and recognition. In spite of all this, demand for walling materials, tiles, and doors and windows exceeded supply throughout the entire year.

We had problems also with import shipments. On a time-commensurate basis, wooden doors and windows were short-shipped. Tile shipments also were delayed. Transporting the large volume of building materials by rail likewise did not go smoothly. We strived to improve supply also through organizational measures. We gave shipments for the population priority over orders for public agencies, and for this reason sales to the population increased by more than did the output. We provided incentives for the state enterprises to commit to the population more of their modern production capacities. As a result, the number of family homes built with house-building plant products increased.

Network of Home Builder Stores

[Question] But trade is able to sell only what is available. To what extent does it depend on the specific building-materials yard what the customer gets?

[Answer] Unfortunately, the yard has less influence over what the customer can get, but more over how he gets it. It is difficult to sell when there are shortages. However, the scheduling of deliveries can be improved, and also the building-materials trade requires investments. To our knowledge, the Ministry of Domestic Trade is taking steps in this direction.

As to what is being done within our own area, we have increased direct sales at the factories. In addition the EPTEK or Construction Industry Capital Equipment Marketing Enterprise, in cooperation with other domestic-trade units and construction-industry organizations, began in 1982 to establish a network of Home Builder Stores (Hazepitok Boltja). There already are several such stores, and eight to ten more will be opened in various parts of the country.

There are stores in Veszprem, Kiskunhalas, Budapest and Szekesfehervar, and stores will open in the near future in Baranya, Bacs-Kiskun, Bekes, Borsod-Abauj-Zemplen, Somogy, and Vas Megyes. These stores sell not only building materials for the construction of family homes, but also tools and equipment. Wherever possible, they will also rent tools and equipment.

[Question] TUZEP probably will not like this, because its allocation of merchandise will be that much less.

[Answer] Our standpoint is that there is need for competition even when supply is limited. We are confident that the excess demand can be narrowed within the foreseeable future. Then the multichannel system of trade will truly serve the customer's interests. It is always a seller's market when there are shortages, which of course is not conducive to good quality. The use of connections likewise cannot be excluded when there are shortages. We believe that direct factory sales will make for better control and will reduce the extent to which buyers are exposed to the seller's whim. Naturally, only an adequate supply of building materials can resolve the contradiction. Through investments we intend to ensure continuous and constant supply in the future.

Quality, Assortment

[Question] When can this be expected?

[Answer] As a result of the investments that are in progress or being prepared, our quantitative problems will foreseeably subside within a year or two. As tasks of equal importance we regard a significant improvement of the quality and expansion of the assortment, and also the support of do-it-yourself housing construction with recommended plans and equipment rentals. Since investment projects in the building-materials industry take long to complete, there will remain shortages in spite of the operational measures to increase output.

Extra shifts on days off will be necessary also in 1984 in the case of building materials that are very much in demand, and we will encourage such shifts with the help of wage preferences. A lasting solution can be achieved only by devoting more attention and resources to improving the supply of building materials. Let me point out for illustration the following: The investment projects now in progress are increasing the volume of investment by 20 percent, and this will continue in 1984. Thus while investment is being curtailed nationally, in the building-materials industry the increase in investment is more than 30 percent. This is being enhanced also by the doubling of state aid for investments.

1014
CSO: 2500/123

STRENGTHS, WEAKNESSES OF AGRICULTURAL SYSTEM DISCUSSED

LD172328 Budapest Domestic Service in Hungarian 1230 GMT 17 Dec 83

[From the "Conversation in the Village Radio Studio" program presented by Bela Berta, with correspondent Ferenc Simon; Istvan Szabo, president of the National Council of Agricultural Cooperatives; and Janos Boda, (not further identified); no further information on identification of speakers as they participate, or of date and place of program, due to loss of introductory 2 1/2 minutes caused by equipment fault]

[Excerpts] [First speaker] The laying of the foundations for the year of 1984, even if not overly weak, nevertheless is not like that of the previous year. Therefore the spiralling problems caused by the drought will with all certainty pass through to 1984 too. Our cooperatives must make great efforts in order to lessen these negative influences. It also could be said that unfortunately the 1983 drought continues. Nationally, there is a shortage of some 200 millimeters of precipitation. The autumn crops have not strengthened adequately. All this will require great work.

[Second speaker] Janos Boda, how do you assess this year?

[Boda] I judge the year of 1983 to have been an extraordinary and very informative year. On the one hand, the year of drought proved the strength of the cooperative movement, since even in such extraordinary weather conditions there was no significant standstill in supplies. This shows that the cooperative movement, the large agricultural farms, now mean a stable basis for Hungarian agriculture.

[Second speaker] This is a positive lesson.

[Third speaker] The other, negative lesson, which can become positive in 1984, is that it drew attention to our weaknesses. The favorable weather of the past 5-6 years slackened production discipline. We thought that faults in production technology, in professional standards, could be compensated for by the weather. We considered agricultural growth to be normal every year; we did not take the weather seriously enough as a factor. Now, in the following year this negative lesson prompts us to count more on the possibility of less precipitation, and (?to prepare) by raising professional standards, improving work (?culture), and developing technical safety and

production technology to respond to our tasks in a prepared manner in the event of unusual weather. Consider this to be very important because the cooperatives have really proven themselves. If we recall past decades we can see that in such conditions during the era of former small-peasant farming, farms were ruined in vast quantities.

[First speaker] I have always been optimistic, but I would nevertheless like to note that these extreme swings in the weather can set back the results of our crop cultivation in the future too. This is the case with countries that have developed more advanced techniques and technology than ours. I could say that it is difficult to compensate fully for the weather with processes and technology. I also agree that we have things to compensate for. Perhaps I firstly could mention the central great plains region, which is most susceptible to drought, in the sense that we must view the issue of developing irrigation more seriously. This must be thus viewed by the factories and the main directing authorities because in recent years there has been a reduction and not a development of irrigation. Besides the high technological and technical level, which means an increase in costs, the onset of a water shortage is also a factor in production. Water in practice diminishes these costs, and I know of cooperatives where maize cultivation of 90-100 quintals was attained in 1982; now, however, it is only about 50 quintals, so half of the crop has been lost.

[Third speaker] I called the year of 1983 extraordinary and informative. If I want to illustrate this with numbers, we achieved a wheat crop of 70.7 quintals, which counts as a record in the life of our cooperative. At the same time, in comparison with the maize crop of 95 quintals in 1982, we achieved 75 quintals. There was very good weather in the first half of the year; in the second half, we had to face the drought. I think that when we face a more difficult (?economic) environment, we must confront our weaknesses, and we still have a very good crutch. In my opinion, cooperative democracy is an exemplary force for society too.

[Second speaker] So this is not so much a crutch.

[Third speaker] Fortunately it is the natural way of life of the cooperatives. The national association and the county associations must rely more on this enormous force. In this situation they must strengthen the work of the cooperative movement in representing interests, partly through the cooperation of the cooperatives and the association, and partly through conveying more realistically to the national association and to the Ministry of Agriculture and the government the interests that should serve the development of agriculture and the cooperative movement. I think that this is primarily a political interest, and only secondarily an economic interest. Naturally, there is a need to find new forms to renew the movement. There is a need for the system of relations to expand with new forms between cooperatives and organs of representation, in order to strengthen representation work.

[First speaker] Comrade Boda has mentioned the primary nature of politics. The economic interest is at least as important, because often agricultural farms are blamed because our yields are at a world standard, our wheat and maize cultivation and our meat production is at the top of the list, however it is costly and efficiency is low. We often are for the contribution of agriculture to the national income being low, for this reason.

[Second speaker] So this is how production, economic policy is adapted to cooperative policy.

[First speaker] Indeed, amid the more difficult economic and political circumstances the strengthening of work in representing interests is very important. This is also important so that in the country we find the common denominator which the great majority accepts and on whose basis it is willing and ready to act. The essence of the MSZMP's general economic and agricultural-cooperative policy is precisely that it always has found this common denominator. I understand the issues raised, because on the part of the cooperatives [words indistinct] better representation of interests means something like higher prices, smaller tax, better economic conditions, and so forth. The national council, taking as its starting point such demands of the cooperatives, has conducted long and hard battles in the debates surrounding the regulators formed for 1984. However, it was nevertheless necessary to find a compromise. Perhaps we were not always strong enough in this work. Indeed, the common platform here must be strengthened, and I too profess that this also is a general social interest. The cooperatives should progress further in the development of their policy to date, their economic and cooperative development, since they are decisive in our agriculture. this is essential and important from the viewpoint of the entire country.

[Second speaker] I understand from your words that pressure has been stronger than the National Council of Agricultural Cooperatives.

[First speaker] This is reality, not pressure. Hungary's economic situation is just like the information received by the country's public. Part of our national income must be devoted to repaying our debts; the other part must be divided so that the development of the conditions, the living-standard of the population ensure an appropriate basis for this common denominator, which I have mentioned. At the same time, this must be coordinated with activity concerning the future, with development, since we would like to advance toward the future. So this is very, very difficult. We represent the opinion that the cooperatives, as until now, know that part of the national income here must go to the collective, because various costs and state expenditures must be met. However it is our opinion that the degree of freedom to dispose of the remaining portion must be developed, during the further development of regulations and the system of direction after 1984, so that this degree of freedom may be greater.

CSO: 2500/140

MINERS' UNION OFFICIAL SETS OUT PROBLEMS

LD151924 Budapest in English to Europe 1150 GMT 15 Dec 83

[Text] And now, the Miners' Union meets in session. Mining in Hungary is very likely to fulfill its plan for this year. That was the central and most positive remark of Istvan Havran, the president of the Miners' Union, when he spoke at an activists' meeting in Dorog. But it does not mean that the mining industry is (?free from) more problems. Gyorgy Jakobi reports:

The mining industry is evidently under double or even more pressure, because the country needs the coal, gas and oil that can be mined in Hungary to save imports, but on the other hand, these demands put an additional burden on the decreasing number of miners. With this double pressure in mind, general secretary of the Miners' Union, Mr Laszlo Kovacs, explained that the solution of the accumulated problems in the mining industry can only take place within a well-planned development process. A long-term program for mining up till 2000 has been drawn, and it was a central topic of the recent parliamentary discussion on the long-term concept of industrial policy. The Miners' Union, he said, should be actively and more energetically involved in its realization. Miners addressing the Dorog meeting said that the union's primary aim this year was to help boost production, establish a better management, and that the negative external economic effects should not burden citizens, but that the problems should be resolved during the production process.

Mining has played a major share in the stability of the economy, and today the homes, as well as the power stations, receive more natural gas than last year. And the same is true of briquette production. Much work and great efforts by the miners have resulted in the fact that domestic demand and export deliveries will be met in full by the end of the year. But it must be clear to everybody, the union secretary said, that to achieve this, the miners undertook to devote their free Saturdays, Sundays and holidays to production. Overtime work in the case of some of the best miners has reached 60 to 70 shifts, which is the upper limit that can be tolerated physically and psychologically. And since industrial wages rose more rapidly than those of the miners, many miners have left the trade. This trend has to be stopped and reversed, because the country will need more coal, and extra work should not be allowed in mining than is done at present.

Discussing the living and working conditions of miners, the secretary of the union said that the stricter economic regulators for companies, which will come into force in January, should not be an excuse for managers to cut back on funds available for work safety and the improvement of social amenities for miners.

CSO: 2020/53

LOW QUALITY, COSTLY BULK FODDER, THREAT TO LIVESTOCK

Budapest MAGHAR HIRLAP in Hungarian 26 Nov 83 p 6

[Article by Ivan Gabor: "Amid the Drought; Trying to Cope with Falling Prices--Agriculture Will Not Have It Any Easier Next Year"]

[Text] The old adage that misery loves company appears to be very appropriate for the past year. While the world market price of foodstuffs, which is the backbone of our exports, fell significantly, our agriculture found itself faced with the drought of the century. Furthermore, that previous concept which once appeared proven, i.e., that we counter falling prices by exporting more goods, was realizable this year only at great costs. It is more correct to say that it was only partially realizable since the drop in prices was so large, especially that of animal products, which we offer in large quantities, that its scale could not have been offset by any amount of mass-production.

Deteriorating Situations

The previous phrase "could not have been offset" should be qualified by the word "economically". And this is no accident. In an emergency, that is intense and, according to all indications, persistent, previous theories and postulates are forced to be reevaluated. Only a few years ago it was unimaginable that a ton of broiler-sized chickens could be sold under $1,100-$1,200. That is to say, the particular product would have been immediately categorized as uneconomical, since the cost of its production would have far exceeded its profits. Today, when a ton of chicken is barely marketable at $700, nobody claims that this product is uneconomical for export, or that it should be discontinued from being exported. The reason for continuing the exporting of this product is not only because of the country's need for dollar-revenues at "all costs"--which, incidentally is not true--but also because the cost of fattening chicken became significantly reducable compared to what it used to be only a few years ago. Even with the reduction of costs the sale of a ton of chicken at $700 is not too great a deal, at least from the point of view of the national economy. Nevertheless, the previous scale of production should not be significantly reduced since monetary regulations can still enable those who raise chickens on their private plots to show a respectable profit.

The situation in hog-raising closely resembles, with certain difference, the state of affairs in the above-mentioned poultry industry. The certain difference is that today the number of hogs (11 million) is a historical high for Hungary. In other respects the two industries are similar. The price of pork is also falling as more expensive meat products become less and less marketable due to a diminishing demand caused by economic hardships in Western Europe. However, other, newer, less expensive products are still marketable as, of course, are meat products in general, only for less than before and for less than what we would like.

The situation has been further aggravated by this year's drought which left its mark on agricultural production not only on Hungary, but on Europe and the United States. Compared to previous years less grain, especially corn, was produced throughout the whole world. (This year in the USA, farmers growing corn on poorer soil received money from their government not to plant maize. The United States thereby hoped to decrease the existing corn supply and to stabilize world market prices. But, in the United States, even high-yield corn producing areas were hit by drought; the level of production fell far short of expectations. Consequently, the world market price of corn and all other grain rose significantly. Thus, hog breeders found themselves faced with such high fodder prices that even government subsidies could not offset them completely. Numerous hog raisers reduced their stock, and thus, temporarily, the market became supplied with meat products in greater amounts than originally projected.

The most advantageous deal would be the sale of grain this year or early next year. But what we have is meat. Drought has also decimated corn in Hungary. Thanks to luck and to the outstanding preparedness of the greater part of the agroplants, enough grain was produced to avoid significant problems in the maintenance of an enormously large number of livestock. The price of corn, here at home, did not rise, and free trade of corn did not have to be restricted. Foodstuff or corn is always available in the country's five-thousand feedstores at customary prices. This is the result of the fact that large scale consumers have kept their fodder management within rational limits. The unequivocal objective of every mixed fodder-producing agroplant is the economical use of corn and of those imported protein-bearing products whose world market prices have also substantially increased.

A bigger worry is caused by bulk fodder. The produced quantity of this grain appears to be sufficient, but the nutritional value of this year's silocorn falls considerably short of ideal. This will not cause so much anxiety this year as it will next year. Cattle, whether beef or dairy, fed principally on silocorn, is not too profitable a livestock for agroplants to begin with. But when cattle is fed on bulk fodder produced at high cost and sold for little, then the situation becomes nightmarish for bookkeepers. The situation for the cattle branch of the agro-economy will be somewhat improved by a modified economic regulation which will take effect at the beginning of January. Nevertheless, it can be expected that the rise in costs, caused by weak fodder crops, will partly absorb the millions of forints allotted by the government.

Thanks to Technical Know-How

Funds for expansion cannot be increased in the area of agriculture, in spite of justifiable and reasonable demands for investments. This is the way it is, according to present estimates, even if the agricultural branch of the economy completes its yearly plan with great difficulty and, as anticipated, even if agroprofits do not fall signficiantly short of expectations. Using their own funds the majority of the concerned agroplants can offset their losses incurred by the drought and are obliged to shift only a minimum of their financial burden to the national economy. This is worthy of more than praise or commendation and, without exaggeration, can be called truly a wonderful accomplishment. In spite of this accomplishment, however, the country's well known difficult situation and the delicacy of its balance of payments make it impossible to appropriate more funds into agriculture than planned for this past year. It is important that the word planned be emphasized, because actual investments in agriculture exceeded estimates this year. Thus, there are no exceptions to these restrictions. Yet, there are still exceptions because the restrictions do not affect, or do so only to a lesser extent, those agroplants which were hit by drought and endowed with locations less favorable for production. These plants have enough to worry about without these restrictions.

Conditions for continuing the industrial sideline activities of agroplants will not deteriorate next year. And this is how it should be. For the fact that the majority of the state farms could offset most of the damages caused by the drought is primarily due to the lightning speed with which these sideline activities could be put into high gear. These sideline activities are so useful for agriculture that even in critical conditions they can function outstandingly and, from the point of view of total value, can offset with their socially useful services the effect of larger crop shortages caused by unpredictable weather conditions.

Taking everything into consideration, the conditions for agricultural production do not appear to be any more favorable next year than in the last. We can hope for good weather, as we did at the beginning of this year. The spring field inspections promised glowing results; the state of last year's winter and this year's spring crop-planting gave caused for ardent hopes. Then came what by now everyone knows. But that even the year 1983 was no failure, in spite of droughts and unfavorable world market conditions, is proven by the fact that the fields were truly properly worked and that know-how, expertise and industry found and finds partial or temporary solutions even in critical condition.

Greater Burdens

All this also justifies hopes for the year 1984. With the opening of credit from the Worldbank, the intensive grain program will continue; the agricultural machines have been delivered to farms. There exists a respectable supply, and in a few instances an oversupply, of domestic or socialist-made, agricultural machinery at the Agrokerek [agriculture machine sales outlets]. The supply of fertilizers promises to be adequate and it is hoped that the fulfillment of the agroplants' justifiable need for chemical sprays, imported

from capitalist countries, will not be hampered by administrative delays. With the exception of winter plowing, the agroplants have carried out their autumn chores, have completed planting winter cereal grain on an area 2-3 percent larger than the area allotted for them last year, and have also increased their area for corn production in spite of this year's unfortunate experiences.

Sizing up the situation at a recent conference Jeno Vancsa,minister for Agriculture and Foods, said the following:

"We must acknowledge the difficulties with which we live and exist today. Existing measures ensure the basic conditions for production and contribute to the most important growth targets. It must also be seen, however, that only those who produce value are capable of overcoming economic difficulties, and for this reason various enterprises must shoulder truly difficult and also more numerous responsibilities. At the same time, I believe, many reserves can still be found with which it is possible to offset the present squeeze and still manage successfully."

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RESULTS OF TOURIST TRADE EXAMINED

Budapest HETI VILAGGAZDASAG in Hungarian No 45, 5 Nov 83 pp 4-5

/Interview by Zsolt Szebeni with the Director of the National Tourist Office Oszkar Kallay entitled: "Situation Report on Foreign Tourism--They Came, They Saw, We Won"/

/Text/ Are we able to repeat this year the outstanding results that the Hungarian tourist trade had achieved in 1982? The question does not concern the managers of tourism alone since the Hungarian tourist trade was substantial also in macroeconomic dimensions. Its dollar earnings made up approximately 30 percent of the 1982 net receipts of our foreign trade. We interviewed the Director of the National Tourist Office Oszkar Kallay about the results of the 1983 tourist season, to which we had looked forward with so much expectations.

/Question/ At the end of last year the prognosis concerning the development of tourism was rather pessimistic. Yet Hungarian experts nevertheless planned to outdo the domestic records of 1982. Whose estimate was substantiated by this year's tourist season?

/Answer/ The WTO /World Tourist Organization/, which held its annual general assembly in Delhi in the beginning of last October, after a scrutiny of the tourist trends of this decade came to the conclusion that the growth of international tourism has been grinding to a halt, in part as a result of the economic recession and in part on account of the tensions in the political atmosphere. Hungary cannot entirely escape the impact of this international trend. Nevertheless we expect to achieve this year as well results which surpass the international average, even if they will not be as conspicuous as they were in 1982. During the first 9 months of this year 8.7 million foreign tourists came to Hungary. This exceeds the tourist traffic of a comparable period in 1982 by 5.4 percent. However, insofar as the receipts of tourism are concerned, the picture is not as advantageous. The total of our forint receipts exceeds last year's results by 16 percent; however the most sensitive part of our income, i.e. the benefits in dollar, are expected to lag behind those of 1982 by a few percents. Although more tourists came to Hungary this year than in 1982, they have either spent less time in our country or they have spent less money during their presence here. The situation is best characterized by the fact that while the expensive restaurants at Lake Balaton were largely empty, the Western guests were shopping food in the supermarkets or were eating in snackbars and luncheonettes.

/Question/ Eighty percent of our West European guests are Austrians and West Germans. Why do we have to record the corresponding schilling and German mark receipts in dollars in our statistics? In this way we are obtaining lower figures.

/Answer/ Indeed our income in these currencies has grown to some extent, the aforementioned decrease that we expect in our dollar earnings is largely due to the increasing strength of the dollar on international money markets. Yet we tabulate all posts of our tourism balance sheet in dollars for the sake of comparability

/Question/ If our Western guests have spent less money here than in the years past, does it mean that they failed to take advantage of our various tourist entertainment programs? If this is so, it would amount to the failure of our tourism policy, the more so since we proclaimed the 1980's as the era of qualitative development.

/Answer/ It is not entirely so. In our tourist agencies' experience a great number of our guests have taken advantage of our more diversified program suggestions, although they have been thrifty in their expense habits. What is even more surprising is that one of the prime sources of our income from tourism, i.e. the changing of foreign currencies, has been running dry.

/Question/ In plain Hungarian this means that changing money on the black market has become more widespread?

/Answer/ We have no statistics in this respect, but it is most likely one of the reasons.

/Question/ No matter how important the presence of Western tourists in Hungarian tourist traffic is, the fact remains that more than two-thirds of our foreign guests are citizens of socialist countries. Looking at the statistics we find that the number of our socialist guests has increased this year in comparison with 1982. However this year they numbered 30 percent less than in the record year of 1978, when 5 million more tourists came from the neighboring socialist countries. Experts are using the terminology of "keeping the socialist tourist traffic within the planned framework," when referring to this phenomenon. What does this mean?

/Answer/ It simply means that Hungary cannot attend to the needs of millions who enter in our country primarily for shopping. Therefore we try to reduce shopping tourism, but we invariably welcome those who want to stay at a health-care resort, to rest and climb mountains in Hungary. The mechanism designed to achieve this is as follows: we have bilateral agreements with the CEMA countries concering expenditures for tourism, these are built into the annual trade agreements. Thus Hungary grants, from year to year, specific forint amounts to the partner countries, for which the latter compensate partly in merchandise and partly in cash that they allocate as expense money to their citizens who want to travel to Hungary. The per capita amount of forints, assigned to each of our socialist guests and the length of time for which it is granted depend on the internal regulations of the country involved.

/Question/ Hungary is a tourist receiving country, in other words more foreigners are coming here than Hungarians going abroad. But how was the Hungarians' liking to travel abroad this year?

/Answer/ In contrast with the predictions of no growth made in the beginning of this year, we expect on the basis of hitherto statistics that 20 percent more Hungarians will have traveled abroad this year than in 1982. This means that their number if expected to grow from 3.8 million in 1982 to 4.7 million by the end of 1983. Insofar as the short-term outlook is concerned, we will be able to travel abroad as we did thus far. In contrast with widespread gossips, no essential changes are expected in the conditions of travel.

/Question/ We are inclined to interpret tourism as an international movement although domestic tourism has an important role to play in the life of the Hungarian population. Yet it seems that lately less people have been going around in our country.

/Answer/ More than 60 percent of the Hungarian population participated in domestic tourism, including social tourism, i.e. organized holidays and student camps. Approximately 2 million youths have spent some time in camps within the system of social tourism. This figure and the 60 percent proportion is not minor than in previous years. However, it is a fact that the demand for commercial accommodations has declined. The only exception is the lowest category, i.e. camping, for which domestic demand has increased by five percent. On the other hand, it stands beyond doubt that the number of weekend excursions has decreased because of the higher gasoline and restaurant prices.

/Question/ Speaking about domestic tourism we cannot avoid dealing with the most sensitive issue, i.e. the Balaton. Will in your opinion the "diversionist propaganda" achieve results? Is it realistic to demand from the Hungarians that they leave off going to Lake Balaton?

/Answer/ There is an unequivocal government decision ruling that the Balaton should be relieved from excesses of tourism. Of course we need time for achieving this. In a perspective of various years I find it realistic that people might accustom themselves to other resort areas and take a liking to them. We have to make the Danube attractive for both foreigners and Hungarians. We need of course further investments in this field. There are three competitive projects under review in the National Tourist Office concerning water-sport facilities on the shores of the Danube. From among other ideas it is interesting to point at our intention to exploit methodically Hungary's geographic position, i.e. that we are a transit country for foreign travelers. Therefore we want to urge the private sector, which acquires growing importance in the area of tourism, to put up boarding houses and restaurants along our international highways.

/Question/ What kinds of ideas does the National Tourist Office have concerning new areas from which we may try to attract tourists to our country?

/Answer/ It has been our tested practice over the years that we focus our tourist propaganda efforts each year on a certain country or area. Thus in 1982 we have put emphasis on France, 1983 was the year of our campaign in Scandinavia, next year we will try to attract more guests from the United States and in the plans of the following years Japan looms large.

A Quick Balance Sheet

Hungary was visited during the first 9 months of 1983 by 8.7 million foreigners, 5 percent more than during a comparable period in 1982. From them 5.8 million tourists came from the CEMA countries, i.e. 700,000 more than during the first three quarters of 1982. We had 420,000 more visitors from Czechoslovakia, 560,000 more from Poland, but 300,000 less from the GDR. From Yugoslavia, as a result of travel restrictions there, only 570,000 tourists came to Hungary, 420,000 less than last year. From the capitalist countries 2.3 million people crossed the Hungarian borders, 8 percent, i.e. 160,000 more than during January-September 1982. The increase has been made up almost entirely of Austrian guests, mostly excursionists. The time spent in Hungary by tourists from the capitalist countries grew by three percent, this includes a seven percent increase in time spent in hotels, bed and breakfast accommodations and campings.

Hungary's income from international tourist traffic during the first 9 months of this year amounted to 13.1 billion forints in foreign currencies, i.e. 16 percent more than last year. This figure includes a 29 percent growth in ruble clearing accounts, which represents a 14 percent per capita increase. The forint equivalent of our receipts in convertible currencies surpassed those of 1982 by nine percent. However our dollar income was seven percent less, in comparison with the January-September period of 1982. This includes a four percent decline in receipts from our guests from capitalist countries. However if we compute our receipts in the currencies of West German and Austrian travelers, who make up more than two-thirds of our guests from capitalist countries, then we find that our German and Austrian schilling receipts surpassec by one-two percent those of a omparable period during 1982.

During the first 9 months of 1983 3.5 million Hungarians traveled abroad, 20 percent more than last year. From them 2.8 million went to the CEMA countries, i.e. 540,000 (24 percent) more than in 1982. Particularly trips to Czechoslovakia stood once again in the focus of public interest. Roughly 300,000 Hungarians traveled to Yugoslavia, the same number as last year, and 440,000 to the capitalist countries (14 percent more than in 1982).

The treasury granted 5.1 billion forints in foreign currencies to Hungarians traveling abroad, 26 percent more than last year. This included a 24 percent increase in ruble expenditures, 27 percent more in convertible currencies and 9 percent more in dollars.

International tourism yielded, during the first 9 months of 1983, net profits in the amount of 115 million transferable rubles and 114 million dollars to our national economy. This is 30 million rubles more and 20 million dollars less than in the first three quarters of 1982.

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BRIEFS

COAL, GAS PRODUCTION OUTLINED--Budapest, 15 Dec (MTI)--The Board of the Mining Workers' Trade Union met in session in Budapest Thursday to discuss this year's work and next year's aims of mining. Industry Minister Laszlo Kapolyi submitted a report to the board on these issues. He said this year coal output is to be in the range of 25.1 million and 25.3 million tonnes. Although that is behind the target, a mild beginning of the winter and other circumstances kept demand low which is being met. Reserves for the current colder climate are adequate. The natural gas and petroleum miners have fulfilled their plan, although gas production had to be reduced somewhat due to earlier than planned deliveries of import gas. To avoid similar situations, it is an urgent task to speed up the construction of underground gas reservoirs. New natural gas fields have been opened faster than planned, thanks to the tapping of a total of 18,000 metres of new prospecting and discovery wells. The supply of liquefied petroleum gas is above target. Next year's plan foresees the extraction of 25 million tonnes of coal, 1.6 million tonnes of briquet, two million tonnes of petroleum, and 7,000 million cubic metres of natural gas. [Text] [LD151945 Budapest MTI in English 1704 GMT 15 Dec 83]

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PROSPECTS FOR 'CONTROLLED MARKET ECONOMY' VIEWED IN ANTI-TRUST CONTEXT

Warsaw PRZEGLAD TECHNICZNY in Polish No 43, 23 Oct 83 pp 20-25

[Article by Slawomir Sztaba: "Monopolies Versus Reform"]

[Text] As reflected in the numerous analyses of reform, published in the recent period, the mainstream of economic discussion that has been going on since 1980 is shifting away from the problem of disequilibrium toward the question of monopolization. The reason behind this is that, in conditions of widespread monopolization, the parametric instruments of influencing the national economy introduced under economic reform do not live up to expectations and in particular they do not stimulate production growth and efficiency improvement. In this situation, where various social forces try to "reform" the reform, it seems worthwhile to study the interconnection between reform and monopolization. Serving this purpose will be a look at the history of monopolies in the Polish People's Republic.

The command-and-quota system of national economic management has given rise to various forms of monopolization.

In the sphere of regulation, there emerged the organizational monopoly, or a producer association setting the level and pattern of production, prices, and contract terms. Assuming as the criterion the scope of decisionmaking, the monopolistic organizations that evolved under the command-and-quota system were covering individual sectors (production lines, terms of contract) and even the whole country (prices, investment).

In the real sphere, as a result of wrong policy of expanding import-substitution production and because of the emphasis on giant industrial projects, there emerged many technological monopolies, or the national economy's sole producers of some goods or services.

The negative economic and social consequences of the existence of organizational monopolies were similar to the theoretical results of monopolistic activities in a capitalist economy.

Their manifestations included: wasteful management of production factors (plant and equipment, raw materials, energy, labor), indifference to innovation, to higher quality of products and to higher productivity of

labor; and the passing of the consequences of mismanagement onto the customers. In the specific conditions of socialist economy, this process manifested itself on three planes:

--Between the employer and the employee (through the low level of real wages);

--Among sectors of the economy (through the durable discrimination against private farming and crafts);

--Among ministries (through the distribution of real investment resources in accordance with the strength of individual organizational monopolies, which led to growing overinvestment in the traditionally strong industries and lasting underinvestment in weak industries, e.g., consumer goods industries).

The social consequences of the existence of organizational monopolies were equally severe. The progressing stratification of society, stemming from the social division of labor shaped by the organizational monopoly, was reflected in an unequal distribution of national income among individual strata of society (I have in mind here the final distribution of national income, resulting in much diversified access to consumer durables). Also, the social stratum that was linked to the organizational monopoly enjoyed privileged political position, while the remaining strata's influence on political decisionmaking was reduced. Hence the phenomenon of alienation. Yet another consequence was the growing chasm between the structure of production and the pattern of social requirements, as reflected in the insufficient development of social infrastructure, especially housing construction and health protection.

The cumulative adverse consequences of the existence of the organizational monopoly, coupled with the very bad economic policy pursued of the 1970's and with the deteriorating external conditions, brought about People's Poland's gravest crisis--both in economic and political terms.

The political crisis was triggered off by the violent entry into the political scene of hired labor, previously almost totally stripped of political clout. A qualitatively new situation developed, which can be described as a state of dynamic political imbalance between three major social forces--the center of highest political authority, the stratum linked to the organizational monopoly and the hired labor.

Each of these three social forces had different goals. For the center of highest political authority it was primarily to consolidate power (among other measures by introducing reforms which would put an end to cyclical social crises in Poland), for the stratum linked to the organization monopoly it was to preserve its political influence and its share in national income distribution, and for labor it was to introduce reforms which would give it a say in political decisionmaking and the aspired share in national income distribution. None of these forces was able to pursue its goals independently, without a compromise with another force.

The unquestionably conservative position was taken only by the stratum connected with the organizational monopoly. Both the center of highest political authority and labor were interested in changes, even if their visions differed substantially, especially in the field of politics.

In the economy, the center of highest political authority reached compromise with hired labor on the final shape of the system of national economic management. Generally speaking, it was to be a system of controlled market economy based on self-managing, autonomous enterprises, which would reinforce the influence of the center of highest political authority upon the course of economic processes (by changing the nature of instruments from command-and-quota to parametric). Sanctioned by legal acts, the granting of autonomy to enterprises set off a social process of creating a new system of national economic management.

From the theoretical point of view, this process should include the following phases:

Phase I: The breaking of the organizational monopoly through legal acts abolishing the command-and-quota system of national economic management and liquidating the institutions connected with that system (sectoral economic ministries, industry boards).

Phase II: The emergence of decentralized economic structures, through the development of many sectoral markets (with at least several suppliers and several buyers making autonomous economic decisions), a uniform consumer goods market and a labor market.

Phase III: The building into these structures of legal and economic instruments which render impossible the establishment of organizational monopolies and the pursuing of monopolistic practices (price collusions, etc.).

The implementation of this process--which may seem very simple at a highly theoretical level--encountered serious difficulties in practice. They manifested themselves both when the changes were designed and when they were implemented. Their causes at each stage were slightly different.

The greatest influence upon the design of changes in the system of national economic management was exerted by three factors.

(1) The then economic situation.

When reforms were under preparation, the country's economic situation was marked by a high degree of capacity underutilization, cuts in production-supply imports, and the growing economic disequilibrium (with very low supply of consumer goods and steadily increasing nominal incomes of the population). That is why the abandonment of producer goods rationing proved impossible, the more so as the rationing of basic consumer goods was just introduced. For this reason, the draft document on reform included many provisions preserving producer goods rationing (e.g., operational programs).

(2) The state of dynamic political imbalance.

Under the then alignment of social forces, the stratum linked to the organizational monopoly retained its influence upon the process of reform, and actively used it to protect its own interests. With the help of delaying tactics, this stratum effectively defended its strongholds--the sectoral ministries and intermediate levels of management. Instrumental in the pursuing of this goal was the then state of the national economy and the fierce political struggle between the center of highest political authority and the higher labor, rallying behind Solidarity. The fact that none of the three major political forces managed to push through its position influenced the compromise nature of the designed reform which as a result fell short of anybody's expectations.

(3) Theoretical achievements of social sciences.

The academic community--although a firm supporter of reform and a supplier of many studies on individual problems--was, in my opinion, unprepared for reform-oriented research. There was not--and still isn't--any theoretical research into the injection of market mechanisms into a socialist economy, and any serious study into the real state of the economy. The set of available statistical data suited the requirements only insignificantly, and there was no examination into the possibilities of adapting the arrangements used in an advanced market economy to our requirements. The dominant view was that the reform should be a single-stroke breakthrough operation, and the inspiration for detailed arrangements came from the economic debate held in October 1956. As a result, none of the many studies provided the basis for the reform draft. Which study, and to what extent, was reflected in the draft was determined by political compromise, enforced by the state of political imbalance. For this reason, the reform draft included many incoherent elements.

Because of these factors--stemming from both the real sphere (the state of the national economy) and the sphere of regulation (the state of dynamic political imbalance)--the full implementation of phase I (that is, theoretically, the breaking up of the organizational monopoly) proved impossible already at the designing stage. This had an adverse impact on the possibility of implementing phase II, or the shaping of a market-type structure of the national economy.

The introduction of economic reform coincided in time with the imposition of martial law which, regrettably, merely changed the line-up of forces within the state of dynamic political imbalance rather than removing this state entirely. The center of the highest political authority no doubt consolidated its position, but so did--as a result of autocratic methods of national economic management--the social stratum connected with the organizational monopoly. And finally, following the delegalization of Solidarity and suspension of worker self-management, the martial law gave a blow to hired labor, or that social stratum which acted firmly in favor of reform. As a result, more enterprises were covered by organizational monopoly (mandatory associations) than was provided for in the draft document on

reform. Considering the changes in the alignment of political forces, the shaping of a controlled market economy seems more distant than was predicted at the designing stage of reform.

The enterprises' right to autonomously set the level of prices and wage funds, coupled with the continuing high degree of economic disequilibrium and with the numerous cases of monopolistic position in the production of goods (technological monopoly), brought about new adverse economic phenomena. With the virtual lack of equilibrium and competition, these enterprises chalk up satisfactory financial results through price manipulations while falling short of the required production effects. In other words, they can report high profits while maintaining production at a low level--both quantitatively and qualitatively.

The current politico-economic situation of the country is very complex. In the political sphere, there persists a state which in large measure limits the possibility of undertaking cohesive measures aimed at the establishment of a controlled market economy.

In the economic sphere, there remains the state of disequilibrium (with low supply of goods and continuing inflationary processes), and the adverse impact of technological monopolies upon economic process is making itself felt. The present hybrid of a command-and-quota system of national economic management and a parametric system failed to prove itself in practice, offering no advantages of the parent systems in their "pure" forms, and failing to provide the center of highest political authority with methods of efficient influence upon the course of economic processes. Given both political and economic considerations, the current situation has all the earmarks of temporariness, and the direction of further changes in the national economic management remains an open question. But if the existing mixed system, with its lack of stimuli to production growth and efficiency improvement, were to take root--which cannot be excluded--then this would mean a danger of secular stagnation, caused by the impotence of the regulatory system.

An analysis of the experiences of the designing stage of reform and of its first economic consequences permits one to draw the following conclusions.

The adverse consequences of the existence of technological monopolies--that surfaced at the stage of implementation of reform--warrant an opinion that the newly introduced parametric methods of national economic management are not adjusted to the existing, highly monopolized structures of the national economy. This also puts a question mark over the belief in the possibility and necessity of carrying out a single-stroke breakthrough reform of the system of management.

The restructuring of the national economy should thus not only be aimed at reducing the energy and raw-material content in output or making the economy more export-oriented, but it should also take into account the susceptibility of the economy to parametric instruments.

The undertaking of cohesive restructuring measures, the introduction of a relevant system of management and the pursuing of an economic policy which would comply with its logic require that a state of political balance be attained. Theoretically, the following variants are possible:

Variant I: The division of political influence between the center of highest political authority and the stratum linked to the organizational monopoly--just as before the August of 1980.

The implementation of this variant would put an end to reform and restore the command-and-quota system of national economic management. Judging from the experience of People's Poland's history, the political balance so attained would be short-lasting and the result would be another social crisis of unpredictable consequences. Next to the assurances by the center of highest political authority to the effect that it will not permit a comeback of the pre-August 1980 situation, there is an objective factor which prevents the revival of that antiquated system. The center of highest political authority, if it wants to avoid another social crisis, is faced with the necessity of making thorough structural changes which obviously have to impinge on the vested interests of the most powerful monopolistic organizations.

Variant II: The concentration of political influence within the center of highest political authority.

The implementation of this variant would require that the center of highest political authority gain full autonomy vis-a-vis the social stratum linked to the organizational monopoly--something which is extremely difficult in view of historical leftovers, unsolved ideological questions, and last not least personal connections. That a consistent reform can be accomplished in such conditions is testified by the Hungarian example.

Variant III: The reconciliation of economic aspirations of hired labor with the leading role of the center of highest political authority, coupled with the removal of influence of the stratum linked to the organizational monopoly.

Such an option would on the one hand help the center of highest political authority to gain autonomy from the stratum linked to the organizational monopoly (which is necessary for the reform to be carried on), but on the other would limit its room for maneuver.

At this point, a digression will be made. If effected, such a reconciliation would primarily have a political dimension, and one should not expect it to yield direct economic advantages, such as higher productivity or better quality of production. The question of the impact of so-called worker participation upon production-oriented attitudes is surrounded by so great misunderstanding that at least cursory explanation is needed. The stimulation of production effects through participation hinges on numerous factors which are more prosaic than the possibility of self-realization. First of all, the worker must be equipped with the necessary

tools and materials, his workstand must be properly organized and his pay correlated with the effects of work (which means he must be subjected to technological regime and economic coercion). Only after the exhaustion of stimuli to productivity and quality of work offered by these factors can any role be played by motivation connected with self-realization and participation. This phenomenon is well illustrated by the development of the organization and management science which was taking up the discussed problems in precisely that sequence, not vice versa. Considering the enormous backwardness in both technology and organization throughout the economy, I believe that from a narrowly economic standpoing variants II and III of the state of political balance seem to be of equal value as far as the potential efficacy of relevant institutional arrangements is concerned.

The variants which make possible a reform targeted at a controlled market economy provide for the abolishment of political influence of the stratum linked to the organizational monopoly. This is imperative since in the long run the interests of this stratum cannot be reconciled with the interests of hired labor. Irrespective of which variant is put into effect, one can propose some organizational arrangements which are necessary for the transition toward a controlled market economy.

The major obstacle to this goal are the two coexisting forms of monopoly--organizational and technological. As a general principle, the monopolies can be counteracted by the creation of a market for a given article, in which at least several suppliers and buyers will operate. This can be achieved either through the break-up of existing monopolies or the expansion of international trade. In the present, highly complex economic situation (disequilibrium, foreign trade bottleneck), a simple application of model concepts is not possible. In Poland's current, very specific conditions, it takes different means to counter the two types of monopolies (organizational and technological).

In countering the organizational monopoly, a comprehensive approach is needed. The key problem is to break up the monopoly and prevent the social stratum linked to it from influencing the reformatory process. This goal should be served by a number of measures.

(1) Legislative measures

The principal and still unfulfilled task is the reorganization of the central level. The economic administration should be strictly separated from the legislative branch of government. Bodies of economic administration should be barred from engaging in lawmaking activities, and confined to making decisions within the scope defined by law. This option would make it possible to apply the command-and-quota methods of national economic management to an extent and for a time necessitated by the structure and the state of the economy,while suppressing the danger of revival of that system (by subjecting it to legal and political control).

It is imperative that the antimonopoly bill be adopted. It should provide a definition of the monopoly--e.g. an association of enterprises setting

one or more of the following elements: level and structure of production, prices, contractual terms, and extent of market division, or a single enterprise controlling a certain percentage (say 60 percent) of a given industry's output--name the body which investigates the monopolistic practices and the body which adjudicates on cases involving monopolies, and specify the sanctions. The law on associations and central unions of cooperatives should not stand in conflict with the antimonopoly bill.

It seems purposeful that laws be passed which would regulate transfer of property of one enterprise to another and which would prevent merger-related monopolization. One efficient provision might be that the management of the gobbled up firm lose their jobs obligatorily and may not be employed by the purchasing enterprise.

(2) Political measures

Next to the attainment of autonomy by the center of political authority in relations with the social stratum linked to the organizational monopoly, the best method of countering monopolization is to back worker self-management. Organized labor, aware of the contradiction between its interests and the interests of the stratum linked to the organizational monopoly, provides the best barrier to the revival of the latter.

(3) Economic measures

In creating the antimonopoly instruments, two contradictions should be taken advantage of. The first is the contradiction between the financial interest of enterprises and the costs of running the associations which the enterprises would have to cover. The second contradiction is between strong and weak enterprises within a given sector.

The instruments involved should be primarily in the nature of taxes.

(4) Public education

The harmfulness of monopolies should be explained in the media to the workers who influence self-management activities. This explanation should become a part of national economic education.

In contrast to the organizational monopoly, which has to be countered with the help of comprehensive measures, the fight against technological monopolies in the present situation requires that individual decisions be taken in respect to individual enterprises. But it should be kept in mind that there are no unequivocally positive methods of influencing the technological monopolies. Each of these methods breeds some negative as well as positive consequences. An efficient countering of the technological monopoly is feasible only in conditions of an open economy. Therefore the center of highest political authority in taking steps against technological monopolies, should be guided by clear-cut criteria of decisionmaking. They can be formulated as follows:

--Does the decision in question counteract the organizational monopoly?

--Does it stimulate higher efficiency of management?

This writer recommends the following program of countering the technological monopoly.

The first stage would be to learn the extent of the phenomenon, by studying the structure of the national economy through the prism of concentration of production in individual sectors. If their production proves highly concentrated--as suggested by the poor effects of parametric methods of influencing--uniform procedures should be worked out to deal with similar cases. These procedures should be based on the plan of national economic restructuring which would specify areas scheduled for abandonment and areas with potential for growth. It would be purposeful to tie this plan to CEMA programs on the deepening of the division of labor. In its present situation, Poland is well suited to come up with new initiatives in this field in the CEMA forum. The deepening of the division of labor should also attract the interest of countries which do not reform their command-and-quota system, since it would bring them advantages stemming from specialization and economies of scale. From the theoretical point of view, the implementation of the plan of national economic restructuring should take a similar period as that needed, on average, for the return of invested capital. This would make it possible to withdraw the wrongly invested resources.

An important means of countering the technological monopolies, feasible in a period shorter than one needed for structural transformations, is the restoration of economic equilibrium. Even in conditions of near-equilibrium, the technological monopolies' ability to score satisfactory financial results through price manipulations will be diminished. They should be encouraged to production-oriented behavior through a more active tax policy. In my opinion, this variant of antimonopoly policy, based on economic equilibrium (market-equilibrium prices) and on active fiscal policy (diversified tax rates for individual enterprises, set in accordance with production performance, e.g. exemption from tax of the production exceeding the previous year's level, taxation of the entire income generated solely by price increase, etc.) is better than the proposals to limit the monopolies' freedom in setting prices and in other matters. Although including some elements of "hand control" over monopolistic enterprises (through fiscal methods), this variant, owing to the application of equilibrium prices, counteracts the emergence of new monopolistic organizations connected with the necessity of rationing (under disequilibrium) and prevents any form of profiteering on scarce goods. At the same time, it does not curb the autonomy of enterprises, necessary for the working of motivational mechanisms.

Summing up, if the monopolies are to be counteracted, which is imperative for the formation of a controlled market economy in Poland, firm political and organizational measures have to be undertaken. Work on the final shape of relevant legal and economic arrangements should be carried on intensively, or otherwise the existing unfavorable state of affairs may remain here to stay, or perhaps the command-and-quota system may stage a comeback.

CSO: 2600/417

SZELIGA DIAGNOSES FLAWS IN RECENT PRICING DECISIONS

Warsaw POLITYKA in Polish No 47, 19 Nov 83 pp 3, 4

[Article by Zygmunt Szeliga]

[Text] The Price Board's communique outlining the proposed rises of next year's food prices was no surprise to the citizenry. In fact, the opposite was true: quite a few people observed that earlier hints suggested much steeper rises than those envisaged in the communique. It should also be remembered that plenty of time has passed since the first signals went out and the intervening period was filled with rumors and gossips which are taken at face value by the nervous and crisis-weary society, no matter how absurd they might be. May this serve as a lesson for the future: whatever announcement comes from the authorities, it should be as precise as possible right from the start leaving little room for guesswork.

Speaking of precision, I shall add that the Price Board's document was however a big surprise for me and many other people who know the subject well, both from the formal and the substantive point of view. After all, the problem of prices did not emerge a couple of months ago, it has been around since the beginning of this year or even the autumn of 1982, when it already became evident that the general economic processes and inflation are eating away a big part of the effects of the drastic price rises of 1 February 1982. At a time of a general lack of equilibrium and inflationary pressures, the freeze on the prices of basic foodstuffs was bound to produce a fresh deterioration of the structure of prices. Incidentally, this structure improved only marginally at the beginning of 1982. Besides, this freeze could not but cause a reemergence of the gap between prices from production costs. Meanwhile both the structure of prices and their relation to costs are matters of utmost significance to the process of economic recovery.

Therefore it can be said that the competent state authorities could prepare their suggestions for emerging from the price deadlock for many months. And even if that long period is left aside, the last 3 months were filled with concrete work on the actual rises. This should have been enough for the preparation of a well-designed document that would be as convincing as possible and at the same time fully comprehensible to the average Pole who cannot be expected to possess specialist economic knowledge.

In this sense, the Price Board document is a total surprise and the initial reaction of the typical reader confirms this view in full. There are too many understatements, too many unconvincing arguments and uncomprehensible formulas in it.

But this is something for the Price Board to worry about. It might even be said that all of this is irrelevant as the most important thing in the document are the proposed new prices, and these are understood by everyone. At the same time, everyone questions the board's calculations regarding the impact of the rises on average family budgets and does his own sums, reaching suitable conclusions. These conclusions are what the matter is all about.

At first glance, the Price Board's communique is an invitation to analyses, discussion and the selection of one out of the two (formally speaking three) variants of the rises. But to me this appears to be a relatively unimportant matter as the differences between the individual variants are not terribly significant. I expect that a majority of people will opt for the first, lower variant, both because of the general reluctance to accept price rises and of the justified feeling of a reduction of the standard of living due to the general inflationary processes. As for the first variant, the spread between sub-variant IA and IB may even be quite equal because some people eat more meat and dairy products and will opt for the former while others prefer meat and will choose sub-variant IB. So this is not really the most important question. To get a general acceptance of the rise is what really matters. After all, the only alternative to the rises would be to freeze the prices of the basic food products for the third year running. This would be a "kind" policy, allegedly caring for the consumer's interest and giving him a sense of stability. But it has several fatal flaws, also from the point of view of the very same average customer. It would make it necessary to maintain and even extend the scope of rationing. It would result in a further deterioration of the structure of prices and a widening of the price-cost discrepancy. On the whole, such a freeze would be a violent blow to whatever meager elements of a sound economic system the economic reform has managed to usher in with so much difficulty. In the end it would turn against the consumers, if only because the limited means for subsidizing food production would prevent a socially desirable production growth from taking place.

A rise of the prices of food, whether big or small, also has a definite shortcoming, namely, it hurts everybody, practically without any exception. For reasons which are I think understandable, cost-of-living supplements should be very limited and even those who do get them will not receive full compensation for the effect of the rise either. The suggestion contained in the document, namely, that those who do not receive the compensation (meaning an overwhelming majority of people) shall be able to compensate for the loss by earning suitably more is unconvincing for at least two reasons. First of all, there are going to be no automatic raises (I shall assume that the principles of the new economic system are treated seriously and that pay is tied to productivity, skill, etc., and there are increasingly many signs that this really is the case). It is

therefore possible that everybody, or almost everybody, shall get a raise, but it is also possible that only 50 percent or less of the total workforce will get it. However, everybody will be paying the higher prices.

Second, the worker who earns more thanks to his bigger productivity, rightly expects that the growth of his earnings will mean a growth of his standard of living. As a result, the suggestion that he should regard this growth of earnings merely as a cost-of-living supplement will sound false to his ears, especially so as the awareness of the depth of the economic crisis is still far from widespread in Poland.

So much for the shortcomings. As for the advantages of the plan, the biggest one consists in the fact that the raises signify the observance of the rules of the economic game, even if these rules may be unkind or even brutal. Again I assume that the economic reform enjoys universal public support and that all of us (OK, almost all) want the economy to recover and to be based on sound economic principles.

This is what it looks like in the general long-term perspective. The advantages that are close at hand include the prospect of limiting the rationing of goods and its replacement by normal market principles (a prospect on which too little emphasis was put in the Price Board's document, incidentally), the chance of a fast growth of output thanks to a better relationship between prices and costs, the chance of improving the structure of prices to some extent (although that will depend on the general economic situation and the scope of inflationary processes--of my article in POLITYKA 2 weeks ago). Other advantages are: the opportunity to introduce at least some elements of a sound motivational system that would stimulate the growth of labor productivity and of profitable and socially needful production and a certain possibility of effecting positive changes in the structure of consumption (both the relationship between the consumption of food and of manufactured goods and the structure of food consumption itself, although it is true that this structure depends more on availability of goods than on the structure of prices).

These are the real options. As for the former, i.e., the freezing of food prices, I should add one more thing. A cool and realistic assessment of the present state of the economy and its prospects for 1984 suggests that the possibilities of growth are very limited indeed, which means that, in view of the general socioeconomic situation, the rate of inflation will inevitably be relatively high. This is clear from the assumptions of the plan for 1984, as I tried to demonstrate 2 weeks ago.

Let me add that just before the proposed price rises were announced, I attended a meeting of the Commission for the Economic Reform which just happened to be examining the 1984 plan. The appraisal of the state and prospects for the economy produced by that body of experts sounded rather pessimistic (or should I say realistic).

An especially important observation the commission made was that in 1983 the growth rate of economy has actually been declining. That is to say, in

comparison with the corresponding period of 1982 the results attained this year are better, but the improvement is getting smaller with every passing month. It may even turn out that the fourth quarter of 1983 will not be better than the fourth quarter of the previous year.

Of course, this does not signify a fresh collapse of the economy as the general trends are favorable and correct. The pattern of economic indices simply reflects the specific changes in economic performance in 1982, when, after the dive of 1981, high production growth was recorded in every month after the middle of that year. In other words, while the level of production in the early months of 1982 was still very low, the figures for the first half of 1983 showed huge gains. But then, toward the end of 1982, production level that was reached could have been optimal given the internal, external and systemic determinants. As these determinants have remained basically unchanged to this day, economic performance also stays at a similar or only a slightly higher level.

This is the backdrop of the whole pricing operation. Going back to the main argument, I must say that a price freeze, in addition to all the hardships I mentioned, would set loose one more plague, the most painful one of all maybe: a fairly spontaneous inflationary process. If there is any question of a choice, the Price Board proposals in fact confront us with the following alternatives: either uncontrolled inflation, hitting at random at various social and economic interests, or controlled inflation, cooly included in the whole economic policy and acceptable to the citizens who can adjust their life plans accordingly.

From the economic point of view, the choice would seem obvious. The same for the social point of view.

The month-long discussion on the pricing proposals will be a peculiar test for the public. It shall show whether all that has been said and done over the last few years has already molded a new economic consciousness of Polish society and whether the understanding of the reality and of inevitable necessities prevails by now or whether the majority of people are still guided by wishful thinking and naive illusions about almost unlimited opportunities of the economy and the authorities which should ensure the highest possible living standard to everyone, ignoring economic realities and principles.

This is how I see the meaning of this consultation. I think it should also be used as an opportunity for saying some more things. Not that these things are new, they are rather reminders.

First of all I think it ought to be reminded that on the eve of the "price-rise operation" of February 1982 we were told that this was going to be the last such rise, that from now on we shall rely on sound economic mechanisms in which prices will no longer be a political problem, becoming an element of normal, everyday economic policy and practice, in other words, they change whenever it is necessary. This promise was not kept for various reasons which one can understand and accept, and the most important of

those reasons was certainly the desire not to affect the already low standard of living.

Isn't there an opportunity to repeat this promise now and to keep it this time? Shouldn't we say that everything that shall be discussed and decided during this month will stay valid only throughout 1984 and that from that year onwards we shall consistently obey the principle of a system of prices governed by economic criteria and changed in step with the changing conditions and needs.

This is the most important matter. Also, I should like to recall the numerous demands, accepted by the authorities, that concern an open pricing policy. To some extent, these demands are being met: suffice it to mention the current pricing proposals or the announcement of a 15 percent rise of the cost of living next year contained in the assumptions of next year's plan. However, this is only a part of the problem. I think it is important from the point of view of public mood that more light be shed on the price prospects for the next year.

In my opinion, there would be nothing wrong with it if we could read an appropriate communique as soon as the Price Board arrives at a reasonably precise projection, even if that be half a year before the rises are to take effect. The risk of panic buying and profiteering is insignificant or simply nonexistent, while the psychological comfort one may derive from an open economic policy is considerable. (Of course, there would have to be exceptions to the rule and I would certainly not urge an open pricing policy with regard to alcohol or cigarettes.) This open pricing policy should be accompanied by ample information of the Price Board's plans and actions to counteract spontaneous inflationary processes. I know this is difficult, but it is indispensable. The proposed changes in the economic system to take effect next year include new mechanisms for controlling inflation. This is what I find missing in the Price Board document. What is going to be done to stem monopolistic practices? This is just one of the many questions one could ask in connection with prices. Who is going to decide which part of costs is legitimate and should be included in the regulated price and which is not and should be rejected as such? I could go on asking such questions. However, more than questions, we need answers.

Now the last problem: the technique of introducing the rises. The question was not asked directly in the Price Board document, but it has to be answered all the same: Should the proposed rise be a one-off act, and, if so, should it take place at the beginning of the next year or maybe at some later date, or would it perhaps be better to divide the operation into several stages?

As a rule, I am in favor of radical solutions. But this time, as a participant in the consultation, I submit a proposal that is inconsistent with my general convictions. I suppose that, taking the social situation into account, it would be better to divide the operation into three or four

stages, one in every quarter of the year. For a start, I would tackle the prices of bread and possibly also dairy products.

Such an approach would admittedly create a certain inflationary gap; as the money from the raises would be collected with some delay, so the loss could be offset by a faster rise of the prices of less essential items (such as cars or gasoline). In this way it would be possible to satisfy the demands for a more just distribution of the burden of emerging from the crisis, with the richer carrying a bigger slice of it.

CSO: 2600/416

PROGRESS OF COAL GASIFICATION, LIQUEFACTION PROGRAM RATED

Warsaw ZYCIE WARSZAWY in Polish 7 Dec 83 pp 1, 2

[Interview with Prof Dr Hab Roman Zahaczewski, director of the "Comprehensive Coal Processing" government program, by Pawel Tarnowski; date and place not specified]

[Text] [Question] Mr Professor, for decades we very simply and ordinarily burned coal in our electric power and heat generating plants and in our kitchens and everything was all right. Now, because of the international symposium on the subject of coal processing, which took place in Katowice, I hear constantly that this is a waste and an anachronism.

[Answer] Of course. Except that this is nothing new. We have known for a long time that direct burning of coal results in a waste of energy and increases environmental pollution, as compared with what would result from comprehensive processing of coal.

[Question] Then what are we waiting for?

[Answer] On the contrary. Here in Silesia we are trying very hard to have gasification and liquefaction of coal on a large scale become a reality. An analysis of the Polish fuels-energy balance leads to the conclusion that after the year 2000 we should produce 10 billion cubic meters of gas and about 7 million tons of liquid fuels from coal. Otherwise there will be a serious shortage.

[Question] Is such a program at all realistic?

[Answer] From the technical standpoint, yes. However, everything will depend on whether or not implementation of this program will be deemed to be absolutely indispensable to our economy. Personally, I think that there is no other way out.

[Question] What you are saying seems to somewhat conflict with the past developments in this field. After all, several years ago we established close cooperation with the West German firm, Krupp, to gasify coal with a high ash and sulfur content. Why did nothing come of this?

[Answer] There were several reasons for this. For example, the economic situation made it impossible to implement such an ambitious program. Nevertheless, I think that this does not mean that the matter of coal gasification should be regarded as being completely closed.

[Question] But coal processing is extremely complicated technically and is expensive. According to calculations made by scientists from the West German coal industry, with the drop in crude oil prices and the present oversupply of energy raw materials, one barrel of synthetic gasoline would be almost three times more expensive than that which is obtained through refinement of crude oil. Under these circumstances, is it at all worthwhile to spend money on such a doubtful business?

[Answer] The best answer to this would be the following information: the FRG industrialists themselves are doing this. Three large facilities are now being built there, primarily to gasify, but also to liquefy, coal.

[Question] But what for?

[Answer] In Europe everyone knows that the present oversupply and drop in crude oil prices is temporary, and that the deposits of this raw material will be exhausted relatively rapidly. Second, no one want to become totally dependent upon the uncertain Arabian market. Finally, please remember that the present price ratios--which anyway are calculated on the basis of very expensive West German coal--along with the development of the technology of processing, will be changing rapidly. In a few more years these proportions may be entirely different, and in Poland, where we have cheaper coal, they already are different. As a result, aside from the FRG, other countries which show serious interest in coal gasification and liquefaction, include the Soviet Union, the United States, Sweden, the GDR, Czechoslovakia and the South-African Republic. The Russians, for example, say that gasification of certain Siberian deposits, such as those from the Kaczynski Basin, will be cheaper and more profitable in the future than exploitation of crude oil deposits there. Thus there should be no resistance to these changes.

Nor should be go immediately to direct production of gasoline, since there are direct and considerably cheaper solutions. Automobiles, which for several years in Poland are using an experimental BEM (benzene, ether and 18 percent methanol) mixture, are getting very good results. Gasification of 1 million tons of coal gives 340,000 tons of methanol, and this is now just about the amount of gasoline which we are now lacking for the market. At the same time, according to calculations made by the Industrial Chemistry Institute, already in 1980 thanks to the addition of 1 ton of methanol to the domestic fuels market (or mixing it with benzene) $140 could be saved. Now, then prices of crude oil have dropped, the savings would be slightly less, but certainly the operation would be profitable. Particularly since we have coal and do not have crude oil.

[Question] Then why are we not doing this?

[Answer] Coal gasification requires large financial outlays. The technology is complicated, and the investment process lasts five years. In short, we cannot always do everything we want and should.

[Question] Then what kind of solution do you see?

[Answer] We should not lose sight of today's economic realities. Research on gasification and liquefaction of coal, which has been taking place in Poland since the mid-1960's, should be continued. At the same time, simpler methods of processing first generation coal should be applied. I am referring here specifically to the development of a gas-coking plant, which would reduce air pollution and also make it possible to obtain considerable amounts of medium-calorific gas. However, the primary advantage of the expansion of the coking industry is the large savings in coal itself. Ten million tons of coke replace 19 million tons of good, coarse-grained coal. So there is something to fight for.

[Question] Does this mean that we are giving up direct gasification of coal at this time?

[Answer] I hope not. We already have a good deal of scientific experience in this field. Several experimental and semi-technical installations are now operating in Poland. We have a ready technology for gasifying poor, sulfurized and high-ash reserves from the Nadwislanski Basin, which really cannot be exploited in any other way. Coal gasification is the salvation of Polish chemistry and the power industry. And of our lungs. I expect that despite everything we will not give up on this.

9295
CSO: 2600/422

RAIL ELECTRIFICATION PROGRESS REPORT

Warsaw ZYCIE WARSZAWY in Polish 8 Dec 82 pp 1, 2

[Article by (ch): "Another 418 Kilometers of Line Electrified"]

> [Text] Four provincial cities will obtain more economical and more convenient electric rail connections this year. Electric trains are beginning to run to Bialystok, Chelm, Zielona Gora and Torun.

This was made possible because progress in electrification, despite acute shortages of materials such as cable, copper conduit and insulators, has been great. And so at this time we see the completion of work along many very important sections of rail line.

In total, 418 kilometers of railroad line will have been electrified in 1983. This is as much as was achievable in the good years, but twice as much as during the period of the several-years' decline. If transportation is functioning relatively well today it is due to the fact that electric trains are able to run to the new sections of the railroad network.

The expanded program of electrification is important because of the shortage of imported liquid fuels (while the domestic power industry, which relies on coal, is in good condition). The availability of traction means also indicates that electric trains should be added. Steam engines have worn out and purchases of heavy, diesel locomotives have been discontinued; however, the possibility of obtaining electric trains, produced domestically, has appeared.

In sum, therefore, electric traction is becoming the primary factor in the modernization of the railroad system, if, of course, it is possible to obtain enough locomotives and cars so that new deliveries can replace the equipment that is being withdrawn from use. Let us add that electrification of every 100 kilometers of line of average load will make it possible to save approximately 107,000 tons of coal each year, taking into account the fuel needed to produce electric energy for traction purposes.

Amortization of outlays for line electrification is occurring within 2.5 and 3 years. And certainly, in addition to the economic results, other benefits must be considered: less atmospheric pollution, less risk of fires starting up, and of course, better functioning of transportation.

This year, among the electrified sections, completion of the section to Malkinia along the Warsaw-Bialystok line deserves attention. The Lublin-Chelm section, completed a couple of days ago, is also very important. Finally we should mention the work on the electrification of the Upper Odra north-south trunk-line. And the Inowroclaw-Torun section is supposed to be finished this year yet.

It is envisaged that a good rate will be maintained next year, and that the program will even be enlarged because another 466 kilometers of rail line will be electrified. The more important plans include work on the Chelm-Dorohusk line, the section from Kutno to Plock (better service to the petro-chemical industry), and also a section on the East-West trunkline. The approach to Rzepin will be electrified and electric traction will also reach Rzepin along the Upper Odra line. Completion of work on the Wroclaw-to-Milkowice line, i.e., in the direction of the GDR border, will also be import-ant. Let us add another section: Nasielsk-Ciechanow on the Warszawa-Gdansk line.

In addition, work on completing electrification of the railroad in Silesia will be continued.

9295
CSO: 2600/ 423

FOUNDRY INDUSTRY BOOSTS OUTPUT

Warsaw TRYBUNA LUDU in Polish 8 Dec 83 p 2

[Text] This year domestic iron and steel foundries have turned out approximately 2 million tons of castings. When viewed in terms of sheer output volume, this puts us in fifth place in Europe and in eighth place internationally. And even though this volume of output falls below the level recorded 5 years ago, the fact remains--as was stressed at a press conference held at the Ministry of Metallurgy and the Machine Building Industry--this industry is doing an increasingly more effective job of supplying the economy with its products and is helping to modernize the production of many other kinds of goods.

Also, the reduced output of some product lines does not represent a setback, rather it in fact is a sign of progress. This is because in place of heavy, materials-intensive products we are starting to turn out lightweight products and with less materials.

Despite slowly increasing deliveries, many sectors of the economy are still waiting in line for foundry products. Among other things, there are shortages of radiators, tubs, connecting rods, and the like needed by the construction industry. This year the industry will deliver 3.1 million square meters worth of cast iron radiators, which will be enough to equip 150,000 apartments. This volume does not meet all of the construction industry's requirements, especially so in view of the fact that in many apartments it has become necessary to replace a large number of baseboard heaters which are not meeting performance standards.

However, it will not be feasible to meet this demand unless the industry's plants are modernized and expanded. Working conditions are difficult in most foundries. The diversity of process engineering systems makes it hard to proceed with the mechanization of even the most strenuous kinds of jobs. This is why preparations are under way for the modernization of 10 plants.

At the same time as work proceeds on the modernization of these plants special attention is being focused on efforts aimed at improving working conditions and reducing the hardships associated with foundry work. The groundwork is being laid for expanding the network of social services offered to foundry workers. As an example of one of the things being done in this regard new social services facilities will be opening their doors to workers at a number of plants in honor of Foundry Workers Day which falls on 9 December.

CSO: 2600/468

SEJM DEPUTIES REVIEW AGENCY BUDGETS, CRITICIZE SUBSIDIES

Warsaw TRYBUNA LUDU in Polish 8 Dec 83 p 5

[PAP report]

[Text] Draft versions of the 1984 budgets of the Ministry of Finance, the National Bank of Poland, the Bureau of Prices, and the Office of Materials Management were reviewed on 7 December by the Sejm Committee for the Economic Plan, Budget, and Finance which was chaired by deputy Jan Kaminski (PZPR--Bialystok).

The debate held by the deputies on the budgets of these four key functional ministries was not confined solely to problems associated with the realism of their projected revenues or the legitimacy of their projected expenditures.

Deputy Barbara Koziej-Zukowa (Democratic Party--Warsaw) pointed out that budget-financed outlays for subsidizing enterprises are still largely used to mask the consequences of mismanagement, waste, rundown equipment, and so on. This holds true in particular for the construction industry, but it also applies to the transportation industry, including the railroads. In foreign trade too, in the opinion of this deputy, subsidies are growing in pace with the growing deterioration in the quality of our exported goods.

The issue of product quality came up again in the debate on the budget of the Office of Prices. The deputies stressed that the public rightly is pointing out that the rise in prices is being accompanied by a decline in product quality. At the same time, both in terms of the policies being pursued by the Office of Prices and also in terms of the actions being taken by commercial organizations, there are no apparent efforts being made to counteract this problem.

The committee gave a positive reception to the National Bank of Poland's program, especially that portion of the program containing proposals calling for the bank to exert a more effective influence on the performance efficiency of business enterprises through the consistent enforcement of tight credit policies.

The debate on the plans of the Office of Materials Management featured a great deal of skepticism. The deputies considered the projections on fabricating and raw materials economies next year to be too optimistic.

CSO: 2600/469

COLUMNIST QUESTIONS OFFICIAL DIAGNOSES ON CAUSES OF INFLATION

Warsaw ZYCIE GOSPODARCZE in Polish No 46, 13 Nov 83 p 16

[Editorial commentary by S.C.]

[Text] Last week the newspapers carried reports on the targets written into next year's plan, and the first editorial commentaries also started showing up in a few of these papers. POLITYKA ran the most in-depth of these commentaries authored by Zygmunt Szeliga.

Zygmunt Szeliga devotes a lot of attention to the problem--one that is very important from the perspective of both economics and politics--of how to draw a distinction between the real course of economic events and the public perception of these events. As of the middle of last year, as far as industrial output is concerned, we started to rise up out of the "crisis doldrums." In addition to the rise in output, a number of other positive developments could be noted, e.g., the increase in labor productivity, the improvement in our balance of trade, or the fact that the decline in personal spending came to a halt. Notwithstanding these facts, the general public--or at least a large segment of the general public--does not believe that there has been any really meaningful improvement in the economic situation, and, at the same time, the general public mood has more of a "claimant" bias than it does a productive bias.

There are many reasons for this state of affairs. Most of these reasons were covered in [Szeliga's] commentary published in POLITYKA. In my opinion, however, there is one contributing factor that needs to be discussed in greater detail because on this particular issue the degree of misunderstanding is especially great. What I have in mind here is the way in which the anti-inflation program is being carried out.

As everyone knows, the price increase for this year will come to around 25 percent, while at the same time there has also been an increase in the level of subsidies paid out to support the production of a rather large class of goods. In spite of these subsidies the marketplace has managed to achieve a degree of relative equilibrium in only a few sectors, whereas some other very important sectors of the marketplace are still characterized by profound disequilibrium. This holds true, for example, for the vast majority of goods manufactured by light industries.

One of the most frequently cited reasons for the fact that prices have risen at a rate more than 10 percentage points higher than the targets set forth in the plan are the higher than planned increases in personal incomes deriving both from wages and also from transfer payments and prices paid for the procurement of farm products.

Let's stop for a moment to consider the issue of wages. On this score comparisons are very often made between the following two performance indicators, i.e., the 8.2 percent rise in industrial output and the approximately 26 percent increase in the payroll fund (figures for the first three quarters). Well, the point is that this is a misleading equation, and if we rely only on it, we will never understand the reasons why workers are "claimant" inclined. Nor will we ever get to the bottom of the causes of inflation. This is because the increment in industrial output is measured in fixed prices and is, therefore, realistic in nature, while the payroll increment is always measured in nominal terms. However, if we were to measure the rise in industrial output in current prices, then both indicators would come very close to matching each other, while the rate of return on labor productivity measured this way would be slightly greater than a factor of one. I believe that from the perspective of interest to us here an even better method would be to compare the rise in industrial output as measured in fixed prices with the rise in wages as measured in real terms. In this case the indicator for rate of return on the rise in labor productivity will be not only less than one, but also less than 0.5. In any event, in the eyes of public opinion this is the only way that the rise in wages is ever perceived, even though no one does this kind of arithmetic on their own, rather they feel the impact of this in terms of the "strength" of their wallets.

So, the differing evaluations of this problem are nothing to be surprised about. When measured on a macroeconomic scale, it follows that wages are going up too fast, whereas it is the estimate of most workers that they are going up too slow--at a rate which is disproportionate to the amount of effort they put into their jobs. The paradoxical character of all this is based on the fact that both calculations are correct, and in any case they lay the groundwork for drawing conclusions and making decisions.

Trying to strike a compromise between these two assessments of the situation is an extremely difficult proposition at the present time. This is due to the fact that this year there is one other factor which has come into play that has been driving up the rate of inflation, a factor which has received relatively little attention. This is in reference--from an inflationary perspective--to the deteriorating structure of industrial output. This is because, while aggregate industrial output went up by 8.2 percent during the first three quarters of this year, the output of goods destined for sale to consumers in the domestic marketplace went up by more or less half as much. It is after all true that bills have to be paid for every increase in output, but only an increase in the output of consumer goods is going to generate demand in the marketplace that will offset the costs incurred to produce these goods. The point is that right now we do not stand a chance of bringing about any major changes in terms of these ratios in the structure of industrial output by relying on foreign trade.

In his commentary Zygmunt Szeliga talks about how inflation poses no threat as long as it does not exceed an annual rate of 10 percent. One might agree with this, but it should be added that unless we succeed in restructuring industrial output for the better and in a way that benefits consumers in the marketplace, then a rate of inflation like this will only be something to dream about. Given all of the current ratios and even if we did succeed in reducing the rate of return indicator for labor productivity as expressed in nominal terms (the nominal increase in wages divided by the increase in industrial output as measured in current prices) to less than one, the rate of inflation would still go up--with all of the economic and social consequences that this entails. In this connection it is the latter set of consequences that are most dangerous, since a high rate of inflation is accompanied by the redistribution of incomes, a process which is very hard to control and which is bound to violate one's sense of social justice.

CSO: 2600/428

CORRELATION OF OUTPUT GROWTH, STRUCTURAL REALIGNMENT EXAMINED

Warsaw ZYCIE GOSPODARCZE in Polish No 45, 6 Nov 83 pp 1, 4

[Article by Karol Szwarc: "Growth and Structure"]

[Text] The emergence from an economic crisis is a difficult and complicated process. The awareness of the multitude of complex problems still awaiting solution is widespread also among economic activists. The first stage envisaged in the 3-year plan should consist in returning the level of material production from before the crisis. However, this does not signify a simultaneous return to the level of consumption from the end of the 1970's because of the necessity to repay old debts. The discussion on the plan for the next year that is currently under way also concerns the adaptation of economic instruments to the new situation and new targets. It is worthwhile paying some attention to an analysis of this situation and look at what can be expected in the near future.

At the beginning of last year all the efforts were focused on arresting the downward trends in production. More or less in the middle of the year the first symptoms of growth appeared. This was when the view became valid that the process of emerging from the crisis, next to the reform, should embrace structural changes, for at least two reasons. First of all, the pre-crisis structure was full of disproportions and it would be an error to reproduce the old system. At the same time we are aware that in the near future production growth is unlikely to be high, because of the internal material conditions and external determinants. In this situation, if we want to ensure a better satisfaction of needs, in some fields the development will have to be faster than the average, while in other domains the growth will be slower.

The efforts have so far gone in two directions: that of production growth and efficiency improvement on the one hand and structural transformations on the other. In the difficult economic situation it is hard to decide which is the more important. It should, however, be noted that while some improvement was recorded with regard to production growth, it is hard to speak of desirable effects concerning structural changes yet.

Industrial production has grown in comparison with last year. On the other hand, a comparison of the situation in the first and the second half

of the current year points to stabilization or even a certain decline of monthly production growths. There are several reasons for this state of affairs, but the most important one is the question of imported production supplies. This is so for two reasons. One is that the production structure shaped in the 1970's relied on the flow of materials, components and even machinery from hard currency markets. This concerns in a bigger measure the industry manufacturing consumer goods than the producers of capital equipment. In recent years the availability of the imported production supplies has shrunk as a result of a halt on credits. In 1981 Poland obtained credits totaling some $4.5 billion, in 1982--some $1.4 billion and in 1983, if things go well, credits will total some $600 million (compared to the planned 850 million), with two-thirds of the sum made available in the first half of the year and a mere 200 million expected in the second half of 1983.

This reduction in the availability of credits, combined with the necessity of earmarking an increasingly large proportion of export revenues for the repayment of debts will have a negative effect not only on the current situation but will also affect the work of Poland's industry and farming in the first months of the next year. It should be doubted whether it will be possible to attain a marked improvement of the balance-of-payments situation also in the longer run. The international political as well as credit-market situation does not justify hopes for a breakthrough in the availability of new credits in the West. Meanwhile, Poland has entered a period in which debt servicing will constitute a bigger burden on the balance of payments. Therefore it would be in the interest of Poland as much as of its creditors to find solutions that would create better long-term prospects of Poland discharging of its debt servicing obligations.

Improved flow of foreign funds is first of all tied to a growth of exports. This is the most difficult problem of all. The situation is not too bad with regard to exports of raw materials and semiprocessed goods, but much worse in the domain of manufactured goods. There are at least two reasons for this state of affairs: the lower competitiveness of Polish goods makes them harder to sell on the Western markets, while at the same time there are the restrictions imposed on Polish exports. Besides, a distinct deterioration of the terms of trade for Poland could be observed for some time now.

The difficulties have been eased by commodity exchange with other socialist countries. As the turnover with capitalist countries collapsed, trade with socialist countries helped stabilize Poland's economic situation to some extent.

However, both here and in imports from hard-currency markets the structure of imports is of paramount significance. In most general terms, this import should produce a multiplier effect in production, facilitating in particular the growth of supply of consumer goods and exports.

This is all the more important in view of the fact that the structure of industrial production this year cannot but arouse concern. All the branches

of the "A" group of industries [i.e. capital equipment and production supplies] with the exception of mining and power generation have been developing faster than industry as a whole. In the "B" group [consumer goods] the light industry has been the weak link. Its output only grows half as fast as the overall industrial output, despite plans for an opposite trend. Also the food industry has grown at a slower pace than the industry-wide average.

The situation in the light industry is affected by the availability of raw materials and manpower shortages. Whereas the former is related to imports, mainly of wool and cotton, the employment situation depends on domestic moves. Light industry wages have begun to grow, but the growth has been insufficient. It can also be expected that even a significant growth of the motivational role of wages and perks, including factory-supplied housing, will not be sufficient to attract enough workforce to the industry. It must be clearly conceded that there is no chance of a return to the old pattern of development of this industry which consisted in three-shift working. It is essential to develop a new model based on modern technology. Some decisions have already been made but their implementation has proceeded with difficulty, especially in the textile industry, in which the decline of output was only arrested at the end of the first half of 1983.

As regards investment, no major growth should be expected in this field any time soon. This is the outcome of the necessity to protect the share of consumption in the national income. Only a faster growth of the national income could result in an improvement of the situation in investing. Given the scarcity of investment funds, the structure of outlays becomes especially significant. It is extremely important to see to the implementation of the 3-year plan targets regarding the distribution of outlays between housing, the food complex and fuels and energy. However, in practice, group "A" investment projects still predominate, accounting for 90 percent of outlays in industry. Therefore the completion of all the projects started in industry would actually signify a deterioration of the structure rather than its improvement.

Numerous analyses, including ones prepared by bankers, have shown that, in an effort to prevent an excessive depreciation of their fixed assets, enterprises have been resorting to numerous small modernization undertakings that are highly effective, can be completed within a short period of time, involve a small proportion of building work and are a portent of structural changes, also from the point of view of group "B" industry.

Such positive features are lacking in the projects financed from the central budget and other priority projects put at the disposal of enterprises. Many of them bear the stigma of the investment boom of the 1970's. They are characterized by the large amount of money needed to complete them, long gestation periods and large share of building works. All the old sins can also be seen again this year. Furthermore, the situation in this area of economy is compounded by the fact that the analysis of the advisability of continuing, abandoning or mothballing individual projects was not followed

up by implementing regulations, which has had a particularly adverse effect on the efficiency of raw materials investment projects.

In this situation every effort must be made in order not to limit but actually broaden the share of projects financed by enterprises in overall investment outlays. However, in reality the situation has been just the opposite, as there have been attempts to increase the share of centrally funded projects and limit the scope of investment projects financed by the enterprises. This does not appear to be the right thing to do in the difficult economic situation the country is in, if there is any serious thought of increasing the efficiency of outlays, materials savings and the beginning of structural transformations. The raising of the share of enterprise-financed investment projects is so important that it might even be advisable to impose a 2- or 3-year ban on starting new centrally funded projects, especially in the "B" group in order to enhance the implementation of this task.

In agriculture, good crops have been recorded for the second year running, thanks to favorable weather. At the same time, especially because of the reduction of imports of grain and fodder but also for other reasons, the cattle and pig herds have diminished (last June the pig population was 30 percent lower than a year ago while the beef cattle herd decreased by 10 percent).

Despite the favorable situation in crop plant yields, the attainment of the previous level of breeding will be difficult. If we want the process to be reasonably fast and efficient and if the pig herd is to increase by 1 to 1.5 million tails during 1 year, it is necessary to import about 50 percent more fodder than was planned for the current year.

According to some experts, however, fodder imports are not the main stimulant of a growth of breeding, but merely a contributing factor. However, it is a fact of paramount significance that the present ratio of procurement prices to outlays is a disincentive to a growth of animal breeding. The prices of crop plants are much more favorable, and this can result in a drop of breeding especially in farms producing huge quantities of grain. Also the shortages of many goods on the rural market undercut the motivation to increased effort by breeders.

In this situation there is the danger that meat procurement in the first months of the next year will be even lower than in the first last months of 1983. This is all the more dangerous as procurement need not grow proportionately to the growth of livestock. As the market deteriorates, the amount of meat the farmers consume themselves increases while procurement goes down. As a result, there can be more tension on the already upset meat market, which will lead to cuts in meat supplies to restaurants and canteens, cuts in exports and a further reduction of stocks. All that will be needed in order to keep meat and sausage rations at the present level.

The rate of inflation in 1983 has been higher than anticipated. The increase has not resulted, however, in a general decline of real pay. However, a reduction of consumption did occur in some income groups, especially among those employed outside the productive sector or those whose income consists in a large measure of family and child-rearing benefits.

This leads to intensifying pressure for a fast growth of nominal pay in step with the growth of prices. In these circumstances, doubts about the feasibility of curbing inflation by slowing down the growth of wages appear to be legitimate.

The best weapon against inflation would be a growth of the supply of consumer goods. Therefore it is very important to analyze in detail the reasons for the decline or slower growth of the production of consumer goods in those enterprises where it occurred. But that will not be enough. The consumer-oriented industries should receive definite assistance from the state and local authorities as well as from the industries producing the means of production. It appears that the means envisaged by the anti-inflation program that was adopted in conjunction with the 3-year plan may not be sufficient in this case.

What is already regarded as obvious in relation to farming, namely that production results depend in a big measure on supplies of production means from outside, should now be accepted as being true of the production of consumer goods as well. There has to be a definite priority for the supplies of materials and capital equipment for the food and light industries in particular.

The reform is supposed to serve the attainment of specified socioeconomic goals. As one of these goals is to increase the supply of consumer goods, it is necessary to set in motion instruments that will support these efforts. These could certainly include FAZ concessions for the producers of consumer goods. However, an analysis of the growth of wages that have been exempted from FAZ levies shows that the beneficiaries are the strongest enterprises and not necessarily the ones that deserve it most.

While the wage growth index is higher than production growth in food or light industries, it has to be remembered that these are the industries in which a zloty spent on wages can result in many zlotys worth of market production, especially in view of the fact that often the main barrier to production growth in these industries is the shortage of labor attributed to relatively low wages. Paradoxically though this may sound, such a growth of wages would be one of the more important counterinflation measures.

Local authority could also help attain a growth in the production of consumer goods by preferential access to social services for employees of consumer market enterprises.

In view of the scarcity of most means, market-oriented moves in the whole economy are also a question of all efficiency-oriented moves, especially ones designed to bring a reduction of the unit consumption of energy and materials. This has a crucial impact on the situation in foreign trade. If less is used, more can be exported, or, if less is imported, more hard currency can be spent on the market-oriented industries and on purchases of materials needed in farming.

The feasibility of the projected economies of materials and energy should be doubted, though. When one looks at the proposed economic instruments, he may come to the conclusion that not enough emphasis has been placed on this crucial problem. Therefore it is necessary to introduce changes in the whole system of reformatory moves. For struggle against inflation involves not only checks on wages and prices and increased supply of consumer goods but also on the generation of this inflation by the industries turning out means of production.

Unquestionably, the efforts to increase the supply of goods, even if they should all succeed, will not by themselves solve the problem of balancing the market. A growth of prices will also be indispensable. However, the pricing policy should take into account not only the general level of real incomes but also the situation in individual income groups. From this point of view, it would be necessary to adopt a policy of not raising the prices of essentials whenever possible--in some cases this will be inevitable--while pursuing a more flexible policy with regard to other goods.

The development of the scope of private construction of one-family houses could be an important tool of curbing inflation as it ties down considerable private funds. One obstacle to the use of this instrument is the lack of building materials and the big growth of their prices. At present there are more unfinished private homes than unfinished apartments in blocks of flats. If it were possible to increase the amount of materials put at the disposal of private home builders and if this were coupled to an even more favorable credit policy, it would be possible to attain a big growth in the number of new apartments while lowering the inflationary overhang.

This brief review of the economic situation shows that there are big dilemmas ahead in all the major fields. Their solution is made none the easier by the fact that the imbalanced market still weakens the impact of incentive programs. In this situation, the marked growth of productivity in industry (by over 9 percent) is certainly a positive development. The consolidation of this tendency will also require structural changes, given the small scope of investing. So far, the direction of these changes has been the outcome of diverse factors and the most important factor of all, namely deliberate action subordinated to social aims, is not the decisive one among them. The extent to which it will be possible to change this alignment of forces will determine the speed of emerging from the crisis. Structural changes depend on various material factors, some of them being of an objective nature at present. While acknowledging that, it is also necessary to point out that subjective factors, i.e., consciousness of the people, determination and political will to carry out such changes can also be extremely important.

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PLIGHT OF SZCZECIN SHIPPING COMPANY SURVEYED

Warsaw ZYCIE WARSZAWY in Polish 15 Nov 83 p 6

[Text] Is it still possible to sail the seas? The long-standing international slump in shipping, the deepest one since World War II, coincides with the Polish economy's near-collapse, so that Polish shipowners have a really tough time keeping themselves on the surface.

This critical situation has least hurt the Szczecin company Polska Zegluga Morska [PZM], which last year recorded 2.6 billion zloty in gross profits and hopes to repeat this by the end of this year.

But others are much worse off. The Polish Zegluga Baltycka [PZB] company, for example, was for many months facing insolvency. It owes its salvation (for how long, though?) primarily to PZM. The Polish Ocean Lines [POL], too, are coping with enormous financial problems, though it is not their fault.

As for this year's performance as well as for prospects, the Szczecin shipping line is of course most optimistic of all. PZM now has 118 fairly modern and relatively young vessels, which it owes exclusively to its own vigorous investment policy in the late 1970's and early 1980's. PZM has also proven itself as a tough competitor for freight and clients, who can now be as picky as never before in choosing carriers for their goods.

The worldwide crisis coupled with Poland's own plight has made this company still more enterprising in seeking various rescue moves. In recent years, when survival has become a genuine problem, any way to bolster a company's financial muscle is welcome. PZM has for some time now been leasing some vessels to Soviet and Hungarian firms. It has signed a 4-year agreement with Austria for transit services of 700 million tons of Swedish iron ore. Joint companies have been founded in Cyprus and in Sri Lanka. With the Transocean company PZM has signed a contract for joint operation of a fleet of cold-storage vessels now under construction and founded a special company called Termofracht for the purpose.

Moreover, the Szczecin company keeps selling old or idle vessels to buy new ones. Recently, for instance, it managed to get rid of three big tankers, the Kasprowy Wierch, the Giewont II and the Rysy II. Knowing current world

prices for second-hand tankers you can be sure these were no stupefying sales hits. However, these big turbine-driven ships used so much expensive fuel and were so rarely used that there was really no point in keeping them any longer.

While not countermanding its orders with Polish shipyards, PZM continues buying ships abroad. By the end of 1984, PZM plans to add six 26,000 DWT and two 61,000 DWT ships from Argentina to its fleet. Were it not for a 6-month delay in engine deliveries from the Poznan Cegielski factory, first ships of this series would now be in Szczecin already. Yet, after PZM has included the eight ships from Argentina and two more from Bulgaria in its operations, it will probably face a long pause in deliveries. Nor is the company certain of finding new funds for further investment. After so many critical years even PZM's strength may be exhausted.

So far, this year's carrier service performance promises to be bearable. In 10 months PZM shipped in all 23 million tons of freights, and another 4.2 million tons are scheduled for transport by the year's end. This means the plan target will be surpassed and last year's performance will be beaten. Coal, as usually, is the biggest freight item (8 million tons). Then come chemicals, crude, iron ore and grain. At present PZM earns some 40 percent of its revenue from services to foreign customers, whereas a few years ago this share did not exceed 10 percent.

This is how things are in Szczecin. But in Gdynia, where the POL has its seat, the situation is worse still. This shipping company now operates 155 vessels of a total 1.2 million DWT. Unfortunately, their mean age is already 15 years, and so aged ships may often face refusals of entry in many seaports.

Although POL recently bought seven modern and horrendously expansive (for everyone) container ships in French and Spanish shipyards, this is but a few drops in a sea of needs. Regular shipline services are very profitable during booms, but even then they require high investment inputs. When worse times come, most shipline companies in the West and East alike are simply propped by state subsidies.

Yet POL officials feel their case points to an exactly opposite treatment. Recent changes in the finance system only deteriorated POL's situation. The company has no money for renewing its fleet, while operation costs and ship prices keep going up continuously.

Because of Polish foreign trade's plight, the Gdynia company has been pinning its hopes primarily on services rendered for foreign customers. In the 10 months of this year POL transported nearly 4.3 million tons of freight, which is 1 percent more than in last year's first 10 months. Meanwhile freights ordered by Polish foreign-trade firms fell by 2.6 percent. Transit services declined too. Foreign freights alone grew, namely by 9.5 percent, chiefly owing to the introduction of modern container ships into service.

However, POL is facing a very uncertain future. The mode of financing replacements in Poland's merchant fleet remains unclear.

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EFFORTS TO IMPROVE RETAIL TRADE NETWORK

Bucharest REVISTA ECONOMICA in Romanian No 45, 11 Nov 83 pp 9-10

/Article by Dr Constantin Tudose: "The Application of the General Standards for Organizing and Developing the Trade Network"/

/Text/ The organization, development and placement of the network of commercial units on the territory occupy a priority place among the constant concerns for improving the activity of selling the goods under the conditions of first-rate service, a requirement for continually raising the material and cultural standard of living of the working people.

The proper fulfillment of its economic and social role by socialist trade presupposes the provision of a suitable technical-material base, with dimensions corresponding to the volume of the supply of goods and the scientifically determined consumption demand of the population.

Referring to the importance of the technical-material base in the process of improvement in commercial activity, the secretary general of the party, Comrade Nicolae Ceausescu, pointed out at the National Conference of Working People in Socialist Trade: "There are, in particular, problems of organization and systematization of the trade network. In general, we are not in bad shape, but not everywhere is the structure of the commercial units determined on the basis of scientific studies, depending on the importance and the rate of sale of the various products to citizens. In many places, the trade network has been developed according to the preferences of one ministry or another, of some comrades in trade. Some stores without very many customers have appeared, while others are overcrowded. Changes in makeup appear very often. It is necessary for us to achieve the rational placement and orientation of all commercial units on the basis of a scientific study regarding the consumption needs in each zone."

In the last 5 years, the organization and development of the network have had as a basis the provisions of State Council Decree No 55/1978, which approved "the general standards for organizing and developing the trade and public-food network," a regulatory act of particular importance, meant to guide this activity up to the year 1990.

The Amplification and Diversification of Commercial Services

At the end of 1982, the trade network in our country was formed of over 80,000 stores and public food units, totaling an area of over 9 million square meters--a 2.5-fold increase in comparison with 1965--amounting to 536 square meters per 1,000 inhabitants in the urban area and 262 square meters in the rural area. More than 60 percent of the area of the retail-sales network operates in new structures, offering suitable conditions for practicing modern, civilized trade. The trade network in the new districts of the localities, on the ground floor of the apartment houses, where about 70 percent of the new units are located, has been developed with priority. The constitution of the network of department and general stores in the central zones of the cities and municipalities, of a modern conception, permitting the expansion of the assortment of goods and the practicing of modern forms of selling, represents a new, qualitative leap in the organization and structuring of the network.

In the process of diversification, the trade network has been enriched with new types of units that respond to complexes of needs of the population, such as Casa Confectiilor /the House of Garments/, Casa Incaltamintei /the House of Footwear/, Casa Vacantei /the House of Vacation/, Casa Cartilor /the House of Books/, Casa Gospodinei /the House of the Homemaker/, Magazinul Tineretului /the Young People's Store/, Materna, Sanitas, Totul Pentru Barbati /Everything for Men/, Totul Pentru Femei /Everything for Women/, Sunet si Imagine /Sound and Image/, Lucreaza-ti Singur /Do It Yourself/, Confortul /Comfort/, Auto-Moto-Velo-Sport-Turism /Auto-Motor-Cycling-Sport-Tourism/, Menaj-Uz Casnic-Gospodaresc /Housekeeping-Home and Household Use/, a type with 1,001 articles, implements and tools for agricultural and household use, and so on. Modern "Romarta"-type units, which sell goods in the "superior" and "luxury" quality classes, and "Premial" /Premium/ and "Mercur" /Mercury/ stores for high-quality food products have also been achieved. The development and modernization of the agricultural and food markets have added new possibilities to this traditional form of trade in our country. Commercial and public-food complexes, department stores and supercooperatives that have helped to improve the conditions for supplying the population in villages have been built in the rural area.

Along with the actions aimed at modernizing the network, the modern forms of selling have been expanded: selling through self-service is now done on 80 percent of the area of the food units, on more than 40 percent of the area of the industrial stores, and to a degree of 45 percent in public food service; in the industrial-goods sector, over 50 percent of the stores are organized on the system of open display of the goods.

The Improvement of the Structure of the Units

The thorough analysis of the degree to which the network on the territory is supplied with commercial space brought out some lags, imbalances, with firm actions being employed to eliminate them. The excessive size of the trade network achieved in the central zones of cities and the shortage of commercial space in the new districts and old residential zones, the necessity of modernizing some types of units, such as those for furniture, paint and chemicals,

sundries, passementerie and so on, in accordance with the diversification of the production of consumer goods, and the development to a smaller degree, not correlated with the population's requirements, of fast-food-type public food units, units with a culinary makeup, pieshops, cake shops, crackling shops, homemaker-type units and units with a lactovegetarian makeup, are only a few of these lags. The trade bodies on all levels are acting to eliminate them. Steps have also been taken to put an accent on specializing in the network the fabric, knitwear, garment and footwear units and to adapt specialized clothing and footwear stores according to season. Although street trade, as an efficient means of increasing sales, has been expanded, some important foot-traffic arteries are still without kiosks, handcarts, stands and so on for promoting this easily accessible form of trade.

In some localities, the action of revitalizing commercial ways and modernizing the units is going on at a slow rate, so that this reserve for increasing the sales capacity is insufficiently utilized.

On the basis of the conclusions resulting from the analysis made, the management of the MCI /Ministry of Domestic Trade/ decided to review and improve the provisions regarding the organization and development of the trade network. In the context provided by Decree No 55/1978, the improvements, in the stage of proposals, involve the more balanced development of the network according to types of localities, established according to the economic and social development, the rational dimensioning of the network according to zones of the localities, the improvement of the orientation of the units according to commercial centers, specialization and so on.

At the same time, the continuation of the analysis on the basis of an improved information system that will include data referring to the whole network of socialist trade is in view.

Actions for Raising the Quality in the Future

The expansion of the application of the standards for organizing and developing the network, with the improvements that are proposed, will permit the matter of achieving, on the basis of scientific criteria, the balanced development of the network and rationally distributing the units over the territory according to groups of goods.

In the development of the trade and public-food network, a special accent will be put on raising the economic efficiency through the continual improvement of the process of supplying and selling the goods, the achievement of suitable sales per square meter of commercial area and per worker, along with the qualitative growth of the level of service for customers, the reduction of circulation expenses and the growth of profitability.

More concretely, the main directions of action involve:

The growth of the retail-sales network in step with the economic and social development of the localities, as a result of the rate of industrialization and urbanization of them;

independent structures and on the ground floor of the apartment houses, and the improvement of the structure of the trade network in the rural localities, in accordance with the requirements of the population, by creating nonfood stores, such as those for garments, knitwear, footwear, electrical home appliances, articles for home and household use, furniture, agricultural and gardening implements and tools, construction and installation materials, solid fuel and so on;

The continuation of the modernization of existing units and the supplying of them with equipment for handling the goods and with furnishings corresponding to the modern forms of service and to the hygienic and sanitary requirements for marketing the goods;

The expansion of the modern and rapid forms of trade and the intensive use of the commercial space through: the organization of selling through self-service, in the newly built general food stores and the ones that are modernized and in some stores for industrial goods whose assortment structure permits the use of this form of selling (stores that sell home-use and household articles, toys, except for mechanical ones, stationery, chemical articles, knitwear, footwear, underwear and shirts); the expansion of self-service with and without a line, in the public food units; the organization of selling through free selection in the stores for textile and footwear goods and metal and chemical goods; the organization of selling based on preordering for durable goods (furniture, carpets, refrigerators, freezers, televisions, cassette recorders, tape recorders and so on); the introduction of new, complementary assortments, the provision of furnishings and equipment with improved functionality to the stores, the growth of the frontage for display and selling, and the use of containers, pallets, box pallets and roller pallets for presenting and selling the goods in stores; the expansion of the delivery of heavy or bulky goods direct from warehouses to the residence of the customers, on the basis of advance orders; the organization and operation of the booths for orders for nonfood goods within some big department stores;

The organization of services for customers (the matter of transporting to and installing in the residence, at cost, heavy and bulky articles and those with a high degree of technicality--refrigerators, televisions, furniture and so so), especially within the big department and general stores; the making of practical demonstrations; the provision of the conditions for listening to musical apparatus, wares and records; alteration shops, cutting tables and fitting cubicles within the stores and departments for garments, knitwear and fabric, places for keeping hand luggage, and so on;

The growth of the sales capacity of the trade network through the development of street trade (bazaars, kiosks, stands, handcarts, vans and so on), located in widely used places, in markets, fairs and stockyards, in front of the big stores on the commercial arteries, in railroad stations and bus stations, in the industrial zones, on construction sites and so on;

The revitalization of the traditional commercial centers of the cities by organizing commercial and public-food units corresponding to the zone and the population's requirements;

The priority development of the trade network in the cities where it is insufficient and the lessening of the disproportions with regard to the degree of equipping between localities or residential zones, with priority being given to the new residential districts; the reduction of the number of commercial facilities that are built on apartment-house ground floors and the promotion of the achievement of independent units and structures;

The rational placement and orientation of each commercial unit, on the basis of a scientific study regarding the consumption needs in each zone and the requirements for improving the forms of circulation of the goods and containers, including through the expansion of the direct deliveries between industry and the sales units;

The dimensioning of the salesrooms and warehouses so as to ensure the proper handling of the stocks in retail trade, oriented toward stores in a proportion of 80-85 percent for textiles and footwear and 85-90 percent for metal and chemical goods;

The diversification of the trade network, in close correlation with the growth of the supply of goods, as follows: in the food-goods sector, the achievement of general food stores, units for selling vegetables and fruit, bread, milk and dairy products, fish markets, stores for selling dietetic products, "Mercur"-type stores for selling high-quality goods, and others; in the textile and footwear sector, the organization of stores for knitwear, garments, hosiery and footwear, units for young people and adolescents, stores for items of interior decoration, "Materna"- and "Romarta"-type stores and so on; in the metal and chemical sector, display stores: warehouses for furniture, auto, motor and cycling products, agricultural and gardening tools, electrical home appliances, hardware, construction and installation materials, home-use and household articles and chemical articles, "Sanitas"- and "Colorex"-type stores, big stores with sporting goods, and others;

The achievement, in the groups of dwellings, of combined units with textile, metal and chemical goods for some complex purposes: sport and travel, the outfitting of dwellings, gifts and souvenirs, and so on;

In the public food sector, the development and diversification of the network of units with a culinary makeup, in order to lighten housework: restaurants with self-service, pie and cake shops, beerhouses, candy stores, doughnut shops, crackling shops, milk and yogurt shops, teahouses, dietetic, lactovegetarian and "Gospodina" units and so on; the founding of new production laboratories; the creation of restaurant commissaries with a capacity corresponding to the shifts of workers in production enterprises and of the factories for culinary products established by means of the investment plans; the expansion of the open spaces (partially or fully covered) functioning as terraces or summer gardens; the achievement of small, intimate units with a varied makeup and with a higher level of presentation (snackbars, milk bars, ice cream and soft drinks);

The development of the trade network in the rural localities will have in view the consolidation of the intercommunal and communal commercial centers, both in

The construction of new agricultural and food markets and the modernization of the existing ones, so that all cities and the districts with over 30,000 inhabitants in the big urban localities may have agricultural and food markets;

The organization of traditional fairs in the county seats and in other important localities, which would sell a wide assortment of textile and footwear goods, metal and chemical goods, gifts and handicrafts, school supplies, toys, articles of adornment and so on and low-price goods;

The periodic organization of the traditional fairs, markets and stock shows in the rural localities, with the work needed for setting up and providing the proper trade network being achieved in light structures and modular platforms for producers.

The materialization of these directions for organizing and developing the network and practicing civilized trade, in accordance with the current and long-term requirements, entails the full involvement of the trade bodies on all levels, the firm application of the principles of self-management and economic and financial self-administration, and the performance of all commercial activity with greater efficiency.

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POSSIBILITIES FOR INCREASING PRODUCTION IN APICULTURE

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/Article by Ov. Grasu: "Possibilities of Increasing the Outputs and Economic Efficiency in Apiculture"; passages enclosed in slantlines printed in boldface/

/Text/ In recent years, beekeeping has experienced quantitative and qualitative development. The favorable economic and natural conditions, the advantages of beekeeping and the possibilities of expanding it recommend apiculture as one of the agricultural branches with wide prospects of development in ensuing years.

In the last 3 years, however, the economic and financial results of this activity in the socialist agricultural units were unsatisfactory. Despite the favorable natural conditions, the outputs obtained were not commensurate with the possibilities.

In the state sector, one notes, in particular, a drop in the number of families of bees. In the above-mentioned period, it dropped by over 5,500 families, a phenomenon accompanied by a rise of over 33 percent in total production expenses. Although the output per colony of bees rose from 7.2 kg in 1980 to 9.9 kg in 1982 and the production cost per ton fell by 1,434 lei (but staying far above the average production costs), the economic and financial situation now existing in apiculture cannot stimulate the development and expansion of the activity in this field. Only 8 percent of the 25 apicultural farms managed to make profits in 1980.

The unfavorable situation is also caused by the existence of an unsuitable structure of the production expenses. Among its component elements, the expenses for pay have the biggest percentage (35-40 percent), followed by the material expenses (19-31 percent), including about three-fifths for biostimulants and the rest for medicine and other material resources.

The big percentage of expenses for pay denotes a low level of labor productivity and a low degree of mechanization of apicultural production.

The cooperative sector also lies between the same limits as the state apicultural farms. Per colony of bees, the average output lies between 7.1 kg and 8.9 kg and the expenses vary between 229 lei and 264 lei.

However, the production cost is much lower than in the state sector (by 28 percent in 1982). By way of comparison, the average utilization price had an upward trend (7.6 percent more in 1982 than in 1980).

The good results obtained for some indicators do not offset the negative effects of the low level registered for net income and rate of profitability; in this activity, a net income is obtained in only 4 counties out of the 21 counties included in our study. As regards the structure of the production expenses, one notes here too the big percentage of those for pay (49-52 percent) and for biostimulants (18-20 percent).

The analysis made regarding the economic and financial results in the socialist apicultural sector brought out a number of reserves and possibilities for improving the activity. In 1985, Romania's output of bee honey will have to hit 15,000-17,000 tons, which means a rise of 36-40 percent over the average in the 1976-1980 period. Such a rise in output will be able to be reached by /increasing the number of colonies/, but especially by /increasing the output/ of honey per family of bees.

The development of the number of colonies of bees will occur with priority in the counties in which the resources of the nectar base are not now fully utilized--especially in the counties in the western part of the country, where the economic and natural conditions are very favorable.

As regards growth in the honey output per bee colony, an acute necessity also for making apiculture profitable in the socialist sector, all the material premises for getting 15-20 kg per year are provided. The reduction of production expenses is conditioned by the reduction of labor consumption and the reduction of biostimulant consumption by practicing rational pastoral beekeeping. We cannot ignore the possibilities that the improvement of the forms of management and organization of production and labor offers. /The improvement of the organizational structures/--especially in agricultural production cooperatives--and /the generalization of overall piecework/ can have big economic effects.

Let us analyze some of these reserves in more detail.

The utilization of modern agrotechnical methods and the use of herbicides and insecticides lead to the shrinkage of the cultivated nectar base and the growth of the importance of the forests, including coniferous forests, producing honeydew. Although extremely abundant, the forest nectar base in our country has the drawback that it is unevenly distributed over the country's territory. Thus, of the total area of forests, only 9 percent is in the flat zone, 26 percent in the hilly zone and 65 percent in the mountain zone. To this is added the fact that in the flat and hilly zones the forests are concentrated in certain centers. In order to counteract these inconveniences and more fully utilize the country's nectar resources, it is necessary to /use pastoral beekeeping on a wide scale/, as a method of intensifying apicultural production.

Another drawback of the forest nectar base, whose elimination requires the intervention of the beekeepers, is the highly uneven distribution over the apicultural season: the early spring honeyflow provides 30 percent; a spring and early summer honeyflow, 58 percent; a summer honeyflow, 10 percent; and a fall honeyflow for maintenance, a definite 2 percent. Hence, the necessity of using

nectarous feed mixtures, which can be achieved easily in the socialist apicultural sector. At the same time, the improvement of the distribution of the nectar base according to honeyflows can also be achieved by creating acacia varieties with staggered blooming, which would give continuity to the honeyflow.

Proceeding to /a zoning of the apicultural units/ according to the natural conditions of climate and nectarous flora, we found six /bioapicultural zones/, depending on the geographical location, the nectar resources that they have and the number of families of bees existing. The main indicators of profitability and economic efficiency were calculated for each zone.

As follows from the data of this classification, the biggest output and lowest cost are obtained in the first zone (the Plateau of Moldavia), a situation that is explained by an abundant honeyflow for maintenance, in spring, from fruit trees, which leads to the growth of strong families up to the honeyflow from acacia and lime trees. The cost of a kilogram of honey is also closely related to the expenses for manpower, with the best situation also being found in the second zone, where they represent only 24.4-38.5 percent of those registered in the other zones. As regards the expenses for biostimulants per family of bees, the second (and sixth) zone is also in the most advantageous position, with these expenses being up to 53 percent higher in the other zones.

The output of honey per colony represents the main qualitative factor in intensification of beekeeping, synthesizing in its size the cumulative influence of the quality of the nectarous flora, the strength of the colony of bees, and the forms of organization of production and labor. At the same time, it determines to a decisive degree the production cost of the honey obtained.

A rise in output can be achieved by using a number of modern methods, which can be introduced with minimal material efforts into the socialist apicultural sector on the basis of providing and continually improving its technical-material base. A prominent place goes to the hive, this specific honeymaking laboratory. The experience in recent years has shown /the higher effectiveness of the multistory hive/ (in comparison with the long hive), expressed in: the possibility of creating strong families by adding stories and coming closer to the biological requirements of the family of bees; the effectiveness of the preparation for transportation and the transportation; the effectiveness of the construction; the facilitation of the breeding activity during the big honeyflow, since, by adding stories in time, the blocking of the nest with nectar is avoided; the raising of the honey output per hive; the saving of worktime in tending the bees. All these things raise labor productivity and lower maintenance expenses, helping to increase the economic efficiency in beekeeping.

As the volume of labor in apiculture depends not on the number of hives tended but on the number and nature of the operations at each hive, the use of strong families and the leaving of a sufficient amount of honey allow the rationalization of the technological process and the reduction of the labor consumption to the bare minimum. But the industrialization of apiculture, the transition to industrial-type apiaries, constitutes the decisive factor in this direction.

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