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## COMMUNIST AREA

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### THE WATER ROUTE IN RUMANIAN AGRICULTURE

Summary: Rumania has some of the lowest crop yields per hectare in eastern Europe. Its neighbor -- Bulgaria -- with analogous soil and climatic conditions enjoys yields 47 and 50 percent higher on wheat and corn. But Bulgaria has 21 percent of its cropland irrigated, Rumania only 5 percent. Ceausescu has committed the Party to a short- and long-term program for an ambitious expansion of the irrigation system. This paper examines the prospects for achievement.

In a recent speech at a plenum of the Central Committee of the Rumanian CP, party leader Nicolae Ceausescu, spoke exclusively on problems and plans of two complementary agricultural programs for the development of Rumanian agriculture: the management of water resources, and an expansion of the livestock industry. (1) Since irrigation and fertilization are considered the twin spearheads for sustained agricultural development the world over, the Rumanian emphasis on irrigation merits attention in that it is an ambitious project to raise what are now some of the lowest grain yields per hectare in Eastern Europe; and, in particular, it is the only communist country where the United Nations FAO (Food and Agriculture Organization) has operated a joint pilot project on irrigation development.

(1) Scinteia, 20 March 1970.

Moisture is the limiting factor in crop production in the Danubian basin countries. Without adequate and well-distributed water applications during the growing season, the impact of other growth promoting practices -- fertilizers, chemicalization, improved crop varieties -- is greatly restricted. On the other hand, when irrigation is combined with these practices, scientific experiments show that the limits of optimum yields have yet to be reached even in the advanced countries of the west. Accordingly in Eastern Europe, the Danubian basin countries with a limited rainfall pattern decided to adopt the dynamic of irrigation expansion in recent years to assure an increase in the output of food products. (2)

The scale and intensity of irrigation development in the Danube basin countries shows up accordingly.

	Irrigated Area hectares		% Arable Land Irrigated	Av. Yields per hec 1965-67	
				Wheat quintals	Corn quintals
Bulgaria	990,000	'68	21%	28	32
	972,000	'67			
Hungary	364,000	'68	6%	23	30
	172,000	'67			
Rumania	530,000	'68	5%	19	21
	434,000	'67			

Derived from data in FAO Yearbook 1968, pp. 3,9,37,57, and official sources.

(2) On a global basis, the role of irrigation is impressive. Out of 1,100 million hectares cropland, 14 percent is irrigated. Yet this share feeds one-half of mankind. Five countries -- China, India, Pakistan, the USSR, and the USA -- have the largest areas, or 68 percent of the world's total. Irrigation developed in regions of high population density, both in arid and humid areas, to meet the pressure for foodstuffs.

Bulgaria and Rumania are contiguous countries, enjoying analogous climatic and soil conditions. The degree of socialization in their agriculture is similar and the cropping systems are comparable. Yet Bulgaria has the highest share of irrigated land in East Europe, 21 percent of the cropland, compared to 5 percent in Rumania. This superiority in irrigation largely accounts for the Bulgarian yields per hectare in wheat and corn, the main crops in both countries, compared to Rumanian yields:

47 % higher in wheat

50% higher in corn

Such magnitudes in yield are significant not only in terms of added output of crops but as vital increments to national economic growth. At the same time they demonstrate the highly effective role irrigation plays in an expanding agricultural economy. The rationale of investing in such growth-promoting factors has not been lost on the central planners, although the initial outlays for irrigation investment are prodigious, and final decisions on allocations are made at the highest level.

In Rumania, where natural conditions of soil, climate and crops are favorable to irrigation, progress in the field has not been as sustained as anticipated. In 1965 the FAO allocated 1.1 million dollars toward the design and operation of a pilot project in the Danubian plain -- the UN agency considered the location of the project as a model for the whole region. The regime had already placed a high premium on raising exportable farm products to hard currency countries to help pay for Western machinery. The vegetables and fruit -- high value products -- are particularly suited to irrigation. Two consecutive years of bad harvests, accentuated by inefficient farm organization, have dealt Rumanian industry, dependent on agriculture for support, some restrictive pressure. The domestic market inevitably suffers when farm supplies are short as they have been in recent years, but there is a

limit to how far planners can go in containing consumer demand. Such developments apparently form the background for Ceausescu's plenum speech on the need to expand irrigation and livestock farming in Rumanian agriculture.

Much of the substance of Ceausescu's speech on water resources had been based on the decision of the Tenth Party Congress which set the targets for the 1971-1975 plan in agriculture. There are plans to expand the irrigation system, within 15-20 years, to include all the land at present considered to be irrigatable -- 5 to 5 1/2 million hectares, or about half of the total arable land in Rumania. (3) In the short run, during the 1971-75 plan period, an area of 1.2 to 1.5 million hectares will be developed for irrigation, bringing the total flooded land area to 2.4 million hectares by 1975. During the current plan, 1965-70, approximately 700,000 hectares will have been prepared for watering so that by the end of 1970, about 900,000 hectares will be in use for irrigation. Such an indicated growth by 1970 would mean an annual increment of 140,000 hectares of new land constructed for watering; so the 1975 plan would require 250,000 hectares to be made available for irrigation.

As Ceausescu averred in his speech, failures to meet planned irrigation objectives occurred in the past, because certain planners underestimated the role of agriculture in the economy and cut-back funds for the development of irrigation systems.

But the best laid plans for irrigation have a tendency to go awry in communist planning. The Soviet Union, Brezhnev complained at a plenum, increased its flooded crop area only by 2 million hectares in the past quarter century, and the total actually irrigated has remained stationary at 10 million hectares. (4)

In 1966, Brezhnev unfolded a land amelioration plan "to transform the face of our country" by expanding the irrigated area to the extent of 7-8

- (3) This would make Rumania one of the world's leading countries in irrigation == a prodigious project.
- (4) Pravda, 27 March 1965.



million hectares by 1975. (5) By 1970, the area was to cover 3 million hectares. By January 1, 1970, the area built for irrigation under the plan was actually 1 million hectares, or one-third fulfilled in four years. Clearly, the short-term and long-term goals are distinctly visionary.

The record for irrigation planning is somewhat better in Bulgaria, which has the most intensified water agricultural system in Eastern Europe. The regime has set an ambitious long-range goal to irrigate one-half of the national cropland -- 2.3 million hectares -- by 1980. The 1970 target called for 1.2-1.3 hectares under irrigation. By January 1, 1970 it covered one million hectares, exactly the goal set for 1965. The current stress, however, is on quality, improving the system with better pumps, substituting sprinkler systems, instead of flooding channels, and impervious water supply ditches.

#### Rumanian Balance Sheet

Irrigation, when combined with fertilization and other technological practices, offers a dynamic means to raise decisively the output of agriculture, boost national income, and contribute to the welfare of the population. It requires heavy and continuous capital outlays, skilled specialists and diligent workers to create an effective system. A stable supply of water must be assured -- this has been the bane of Soviet shortcomings in the field.

Irrigation policy, too, has strong political implications. The distribution of water is essentially a monopolistic practice of the state. The supply appears dependable; an abundance of water in rivers and nearby mountains is at hand. The matter of resource allocations, too, is involved, as effective irrigation technology depends heavily on the output of the machine and metallurgical industries. Precision, powerful pumps to move water are the basic machines, and a complete system of light-weight pipes to carry water are essential in the distribution process. Both these industrial products for the

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(5) Pravda, 28 May 1966.

irrigation field compete for the scarce resources with other vital sectors of the national economy, so the regimes are faced with choice and decision in their value judgements. Irrigation is an intricate engineering undertaking, but the human factor plays a decisive role on its functioning, regardless of ideology.

With determination and resourcefulness, Rumania could meet its short- and long-term goals, particularly if it continues to cooperate fully with FAO and accept private western assistance in order to assure the most modern technological aid. The cost is high and worker dedication obligatory, but an era of relative abundance is possible for Rumanian agriculture.

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Provided, 22 May 1965