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Transcaucasia

AGRICULTURAL COOPERATION AND AGRIBUSINESS IN SOVIET TRANSCAUCASIA

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Abstract: The author, an authority on the agriculture of Transcaucasia, traces the evolution of the new Soviet system of interfarm integration at the rayon (minor civil division) level and the development of a new agribusiness administration combining all farm-related and food-related activities. Since the initial experimentation with rayon-level integration (known by the Russian acronym RAPO) in the Georgian SSR in the early 1970s (notably in Abasha Rayon), the RAPO system of administration has been introduced throughout the Soviet Union. As of Jan. 1, 1984, there were 3,109 RAPO administrations in the USSR, comprising 95,975 separate enterprises with a total employment of 33.6 million people. The enterprises included 50,435 farms (mainly the nation's 26,000 collective farms and 23,000 state farms), 7,849 agricultural processing plants, 19,587 agricultural service enterprises and 7,361 rural construction agencies. The RAPO system of administration constitutes the lowest level of a new agribusiness hierarchy of management, represented at the republic and national levels of government by the consolidated Agroprom (Agribusiness) agencies.

The Problem

Since the founding of the Soviet Union, there have been several concerted attempts to increase the productivity of agriculture and at the same time strengthen political control over the farms. This combination of economic and political motives has been most evident in collectivization as well as in the introduction of the machine-tractor stations, but it has never been absent in any state measures. In the nearly 70 years of the Soviet Union's existence, it has experienced an economic development that has made the relationship between the individual areas of production increasingly more complex. Organizational answers were sought to resolve the resulting problems. In the last one and a half decades, one of the predominant problems of Soviet agricultural organization has been how the increasing integration of services, industrial processing and trade could be fostered without the growing overlap of bureaucracy making these measures financially unfeasible. The present answer is a program of cooperation and integration that, in turn, is closely associated with the various agrarian programs of the 1980s (the Food Program, the Reclamation Program, and the Program of Consumer Goods and Services).

Every Soviet agrarian program has had specific regional points of concentration. For a long time the Moldavian SSR was at the forefront in dealing with cooperative and integrational measures, and it has maintained this position to this day (Singur 1977; *Regional'nyye agro-promyshlennyye komplekсы*, 1979, p. 217). With respect to regional specialization, it might be assumed that Transcaucasia would be a prime example for the close connection between agriculture and industry, since the leading

sectors of the agrarian economy supply raw materials that require prompt preparation and processing. In point of fact, however, the three Transcaucasian republics complied only reluctantly with the new agrarian policies, and with varying degrees of intensity. A summary of the state of agricultural cooperation and integration in the Soviet Union for 1982 did not come to very positive conclusions with regard to Transcaucasia. It said that organizational measures had not adequately considered the agrarian structure of the area and its operational needs, and had not taken the specialization of the participating collective farms into account (pointing up the marked diversification of cultivation in large areas of Transcaucasia) and would therefore have to make a major effort to attain the standards of other parts of the country (*Mezhkhozaystvennaya kooperatsiya i agropromyshlennaya integratsiya v sel'skom khozyaystve*, 1984, pp. 534 ff.).

On the other hand, Abasha Rayon in western Georgia has since the early 1970s been an experimental area for the RAPO administrative concept (*rayonnyye agrarnopromyshlennyye ob'yedineniya*—agrarian-industrial rayon corporations), currently applied to the entire Soviet Union, so that this rayon, like selected parts of Latvia and Estonia, belongs to the latest innovation centers for rural transformation.

This paper intends to examine on a regional scale the various forms of cooperation between the sectors of agriculture and industry that have been developed in Transcaucasia, how these have developed since the end of the 1970s, the most important impediments to an extensive adoption of the cooperative and agribusiness program, and the status the three Transcaucasian republics hold today in the Soviet agrarian policy.

Agricultural-Geographic Survey

Transcaucasia belongs to the Soviet regions with the greatest variety of agrarian branches of production and with the most important diversification on a small scale. Large-scale maps can only approximately convey this diversity. Satellite imagery, which has yet to be evaluated in detail and which encounters problems of insufficient ground control data, is useful only for subregional coordination of agriculture with the ecological system, and for attempts to increase the agriculturally productive land as a whole or for specific uses selected by the state marketing policy. Without being able to give a summary of the types of land use and branches of production, we can nevertheless call attention to two facts:

(a) The agrarian regions of Transcaucasia can be classified typologically into a dozen agrarian economic groups, based on prevailing systems of land use and directions of production and, above all, the contrasting intensity of land use. The regionalization according to agrarian areas is based on the usual distinction of leading and subordinate branches discussed in the appropriate Soviet sources.

(b) It is precisely those branches of cultivation that determine the special position of Transcaucasia as a subtropical agrarian region that favor application of the agribusiness system.

Types of Farming Areas

Without being able to give a complete cartographic representation or a completely satisfactory taxonomy, one can distinguish the following main areas in Transcaucasia:

(1) Tea production in western Georgia, Abkhazia and Adzharia. This is characterized by increasing spatial concentration, a high seasonal work load, and attempts at mechanization. The existing dense transport network favors industry-oriented integration (in the move toward modernization), but the integration of operations has so far remained at a preliminary stage.

(2) Subtropical crops. In some cases (citrus fruit, essential oils, tung), specialization has led to the development of the agrarian-industrial cooperative systems on a small scale. These, however, are dispersed somewhat haphazardly over the West Georgian-Abkhazian-Adzharian area.

(3) The wine culture of Kakhetia and of the rayons of Akstafa and Shemakha. Here cultivation and wine making are associated in large state enterprises and affect the shape of the landscape.

(4) Fruits and early vegetables grown for trading in east and southeast Azerbaijan as well as in the areas surrounding the large cities. This has come about through the gradual replacement of other crops under the influence of the supply policy of the Soviet state and depends on close collaboration with the canning industry and domestic trade.

(5) Agriculture near cities that is oriented to supplying those and other Soviet cities. This type is found in state farms that are mostly integrated into agribusiness corporations and include trade in fruits and vegetables. The agricultural suppliers for the Black Sea resorts also belong to this type of farming.

(6) The cultivation of fruit on the level of an entire republic, with market-oriented concentration in some focal areas. The preparation and processing are handled by the canning industry (an example would be the *Azplodoovoshchprom* system in the Azerbaijan SSR).

(7) A livestock economy of cooperating specialized enterprises parallel to the cultivation of vegetables near cities. This type of farming depends on infrastructure with good marketing prospects and is distinguished by horizontal cooperation linkages.

(8) Tobacco growing in hill and mountain country oriented toward capital accumulation. This type of farming has been introduced into farms with diversified crop structure and additional animal husbandry with a view to slowing out-migration from mountain areas, since tobacco is a crop that requires large inputs of labor. When tobacco becomes the dominant crop, the other branches of agriculture serve mainly local needs.

(9) Cotton growing and animal husbandry in economically weak collective farms. This type of farming is based on the principle that it helps equalize soil fertility within the framework of a single collective farm. It arose as a result of the recent colonization of the Azerbaijan steppe through irrigation projects, but displays few features of modernization and integration.

(10) Grain, potatoes and animal husbandry, based largely on the principle of self-sufficiency and characteristic of unprofitable collective farms (which have been superseded increasingly by state farms). This type of farming is found at some distance from transport routes and preserves traditional features of diversification and crop combination, with virtually no signs of integration. The main areas are the Lake Sevan basin, northwest Armenia and Georgian hill and mountain country.

(11) Dry grain farming on the fringes of irrigated areas. The collective and state farms practicing this type of farming are also engaged in animal husbandry with poor interfarm linkages.

(12) Animal husbandry in steppe and mountain areas arising from the earlier nomadic economy. Within the organizational framework of collective and state farms, this type of farming continues to practice transhumance through regular seasonal migrations between areas with different resource settings. Further intensification of this type is being sought through the inclusion of processing facilities for animal products and through improvements in the infrastructure of grazing areas.

Our classification does not consider forestry-oriented activities even though some of them include certain types of fruit growing, for example, the cultivation of nut-bearing trees.

Each of these types of farming has developed certain relationships of its own, but there are still prospects for more intensive linkages of cooperation.

Elsewhere in the Soviet Union, for example, in Moldavia, the Ukraine, the North Caucasus and Central Asia, there have been suggestions as to how types of farming can be more fully integrated, but these proposals are yet to be realized (regarding the prospects of integration in the cotton complex of Central Asia, see: Nurullayev, 1977; Tsamutali et al., 1982; Ziyadullayev and Tursunov, 1984).

The Utility of Agricultural Integration

With regard to Transcaucasia, a few examples might be given to show that farm integration fosters agricultural efficiency. Green tea leaves, for example, need prompt and controlled processing before undergoing fermentation; this requires rapid transportation to processing plants and integration of transport facilities since rural transportation has been traditionally one of the weak links in the agrarian system (Kerblay, 1983). Fruits and vegetables are not only sold to nearby urban markets as fresh produce, but also transported to other regions of the Soviet Union or used for canning. These various end-purposes call for grading according to quality, transport and storage

requirements, and this can be best achieved in a system of agro-industrial integration, the agribusiness system. Viticulture has been connected with wine making since ancient times, but this link has broken down in the Soviet Union because of administrative considerations (the growing of grapes being assigned to the agricultural sector and the making of wine to the food-processing industry). Now efforts are being made to restore the traditional linkages, adding furthermore the marketing of wines. In the cotton industry, it has long been considered useful to have a close linkage between cultivation and ginning, and even integration with textile manufacturing in the densely settled Islamic regions of the Soviet Union where the expansion of employment opportunities has become a major policy issue (with regard to Azerbaijan, see Mamedov, 1984, pp. 75 ff., and Mamedov, 1985). In the case of tobacco growing in the Transcaucasian mountain country, the same considerations as for tea culture would apply.

The need for agro-industrial integration in the form of an agribusiness system has long been acknowledged in Transcaucasia, and some forms of cooperation along these lines developed in recent years under the agrarian policy of Leonid I. Brezhnev (from the Central Committee meeting of March 1965 to the meeting of July 1978 and the Food Program of 1982). Starting with experimentation on a small scale, this policy has now led to a national reorganization of agriculture, even though it has not fundamentally changed the highly bureaucratic elements that have so far characterized the centralized and hierarchical agrarian system of the Soviet Union.

Horizontal and Vertical Linkages in Transcaucasia

Horizontal Linkages. Horizontal linkages can occur between collective farms, between state farms or between farms of both types. These linkages may be agrarian in nature (specializing in agricultural production and services) or nonagrarian (for example, cooperation in interfarm building projects).

Among agricultural interfarm linkages, the most common are those involving animal husbandry, especially dairy cattle. These linkages often interconnect existing enterprises, for example, a number of adjoining collective farms that would share financial and labor inputs. The arrangement can be illustrated by Gori Rayon, where all 20 collective farms have long shared in the cattle business of the Gantiadi collective farm, in effect, anticipating the recent establishment of the rayon agribusiness corporation (RAPO) system.

The types of dairy cattle linkages vary among the three Transcaucasian republics. In Georgia and Azerbaijan, most of the interfarm corporations involve specialized dairy and cattle breeding farms; in Armenia, about 25 stations for artificial insemination at the rayon level have been added to the dairy and breeding corporations, whose number (34) is nearly the same as that of the Armenian rayons. In Georgia and in Azerbaijan, there are an average of 1.4 specialized cattle farms per rayon. Poultry farms have been established only in Georgia (29 farms) and in Azerbaijan (19 farms) (see Table 1).

TABLE 1

Types of Interfarm Enterprises in Transcaucasia
(as of end of 1984)

Type	Total number of interfarm enterprises			
	USSR	Georgia	Azerbaijan	Armenia
Overall total	10,113	394	214	87
Agricultural	4,627	235	150	67
Production	1,700	130	101	37
Crops	201	29	16	4
Livestock	1,499	101	85	33
Services	2,927	105	49	30
Land reclamation	63	2	8	—
Electrification	2,053	16	16	—
Nonagricultural	5,486	159	64	20
Construction	2,996	52	55	16
Feed industry	602	2	7	4
Forestry	819	24	—	—
Recreation	118	1	—	—

Source: *Narodnoye khozyaystvo SSSR v 1984 g.* [The Economy of the USSR in 1984], statistical yearbook. Moscow, 1985, pp. 314-317.

Agricultural services play a small part in the functions of interfarm enterprises. Only Georgia has a larger number of such activities, which are not further defined and can be presumed to involve the use of agricultural chemicals. Joint land reclamation enterprises in Georgia cover six rayons, serving 47,700 hectares of irrigated land and 76 farms (*Mezhkhozyaystvennaya kooperatsiya* . . . , 1984, p. 217).

In terms of numbers, interfarm enterprises with nonagricultural functions appear to be nearly as important as those with agricultural functions. This particular category includes a large number of rural construction enterprises and, in Georgia, also 24 forestry enterprises. The construction enterprises are rarely profitable, but they serve an important function since rural construction in the Soviet Union often suffers from bureaucratic conflicts and economic inefficiency.

On the whole, the development of horizontal interfarm cooperation that began in the 1970s (Stadelbauer, 1983) continued in Transcaucasia into the 1980s. The Transcaucasian republics were not in the forefront of these efforts at reorganization, but belonged to the middle grouping of union republics. Participation was strongest among Georgian collective farms (Table 2), but some of this participation may have been in name only. On the other hand, it should be remembered that collective farms in Georgia are among the smallest in terms of mean agricultural area (140 hectares of

TABLE 2
Participation of Collective and State Farms in Interfarm Enterprises
(as of end 1984)

	<i>USSR</i>	<i>Georgia</i>	<i>Azerbaijan</i>	<i>Armenia</i>
Number of joint enterprises	10,113	394	214	87
Number of participations:				
by collective farms	125,945	4,871	2,310	730
by state farms	34,588	1,899	984	873
Average number of farms per joint enterprise	16.6	17.7	15.6	18.7
Mean number of participations:				
per collective farm	4.8	6.8	3.8	2.6
per state farm	1.5	3.3	1.2	1.7
Participating farms:				
collective farms	26,171	712	604	281
state farms	22,515	570	808	505

Source: Calculated from *Narodnoye khozyaystvo SSSR v 1984 g.*, pp. 300, 306, 314 ff.

sown land, compared with 1,320 ha in Azerbaijan, 500 ha in Armenia and 3,590 ha in the USSR as a whole). The Georgian collective farms therefore supported inter-farm specialization in animal husbandry while retaining individual diversification in crop production. The main focus of interfarm activity in crop production was the joint organization of greenhouse enterprises in Georgia as well as near Yerevan in Armenia. In general, horizontal linkages appear to be weak in Armenia. The absence of state farm participation in interfarm arrangements in Azerbaijan may be explained by the fact that state farms are relatively recent creations in that republic and the establishment of state farms led promptly to vertical integration.

Some peculiarities of the economics of Transcaucasian interfarm arrangements may be gleaned from data published by Zayets and Goremykin (1984, p. 58) regarding the disposal of farm incomes. In all three Transcaucasian republics, especially in Armenia and in Georgia, a greater than average share of farm incomes is being contributed to interfarm development projects, suggesting previous retardation of development. Spending for material stimulation was relatively low, and so was spending for cultural purposes, especially in Georgia and in Azerbaijan. Only Azerbaijan showed a high rate of repayment of government credits. Remittances to shareholders in inter-farm institutions equaled the Soviet mean only in Armenia, and were at two-thirds of the mean in Georgia and in Azerbaijan. These facts suggest that the stage of development of Transcaucasian interfarm arrangements was not very high, as shown in

particular by the high share of spending on development projects, the low remittances to shareholders and the small share of spending for bonuses.

" *Vertical Linkages.* Vertical integration of the processing, manufacturing and marketing of farm-based products has become a way of overcoming the traditional administrative separation of these functions among different bureaucratic authorities. The separation of responsibilities along the path from agricultural production to the consumption of end-products has been a factor in slowing the delivery of goods to consumers and in causing losses of production along the way.

The various forms of vertical integration that have been discussed by Soviet authors (Negru-Vode, 1975; Valovoy, 1977) also occur in Transcaucasia (Dzhakeli, 1976; Stadelbauer, 1983), but it should be stressed that the discussion of these arrangements with respect to Transcaucasia lagged behind other Soviet regions, except in the case of Azerbaijan. The Soviet journal *Subtropicheskiye kul'tury*, which is concerned with subtropical agriculture, has devoted few articles to the issue of vertical integration, and the two volumes by Santeladze (1975, 1976) on the Georgian food processing industry are also short on discussion of the issue.

In all three Transcaucasian republics, there was an early effort at integration in the wine-making industry. In Georgia, large collective and state farms have joined to form regional wineries in traditional winegrowing areas like Kakhetia, and there is an even larger organizational entity known as Samtrest. It includes not only the Georgian regional wineries, with associated state farms, and large wine and brandy producers in Tbilisi, but also bottling plants in other Soviet regions. The Armenian wine industry is similarly organized into a corporation known as Ararat, with its main plants in Yerevan. In Azerbaijan, where winegrowing is of more recent origin, the agribusiness system known as Azerbvino combines a variety of organization elements, including small interfarm enterprises and specialized enterprises at the rayon level.

The example of integration in the wine industries in Georgia and in Armenia, on the one hand, and in Azerbaijan, on the other, suggests that the diffusion of an innovative branch of agriculture promptly makes use of new types of organization, but that the older forms of interfarm cooperation persist even when new organizations are established or new designations are used—from the joint stock companies of the early Soviet period to trusts and government corporations and, finally, to the agribusiness systems at the republic level.

Like the Georgian wine industry, the tea industry in Georgia has also undergone some organizational changes, but without the total integration proposed by Santeladze (1975, pp. 228 ff.). Only one organizational entity at the rayon level, as proposed by Khokhlov and Demidov (1978, p. 54), turned out to be successful, largely because it corresponded to the new rayon-level agribusiness entities that were in an experimental stage at the time.

The most complex examples of vertical integration occur in the fruit and vegetable industries of Georgia and Azerbaijan. In these republics, specialized state farms,

canneries and marketing outlets have been linked together and have been supplemented by enterprises in the transportation, construction, planning and other service sectors. The example of the Azerbaijan fruit and vegetable industry (which also includes the tea industry in the Zakataly and Lenkoran' rayons) suggests that even such a complex system has undergone several reorganizations.

In contrast to the horizontal interfarm enterprises, the agribusiness entities of the 1970s have not been documented in detail in Soviet statistical yearbooks. The reason for the absence of separate treatment probably lies in the fact that the farms and processing plants included in these agribusiness systems remained largely independent (with the exception of a few total fusions) and that so-called integration thus meant simply the addition of yet another administrative network to the existing ones.

Evaluation of Transcaucasian Integration. The new forms of integration in the Soviet Union have been applied in Transcaucasia to the greatest extent in animal husbandry, in the form of horizontal linkages among farms, and in the wine, tea, and fruit and vegetable industries, in the form of vertical integration combining all stages from cultivation through processing and marketing to consumption. But even within the sectors that have been affected by various forms of integration, development did not proceed as rapidly as might have been expected in view of the special needs of subtropical agriculture. The main reasons for the delay in the introduction of the new forms of organization, especially in Georgia and in Armenia, are as follows:

(a) Issues relating to property rights in interfarm enterprises have yet to be fully resolved. Collective farms, which play a particularly important role in Georgia, tend to oppose various forms of integration on the ground that they favor the domination of government enterprises. The existence of an important private sector also hinders integration because private plots, even if included in integrated entities through delivery contracts, still remain objects of individual enterprise.

(b) This opposition on the part of basic enterprises is enhanced to some extent by the self-assurance of decision-makers. It is difficult to prove that Soviet agrarian programs are necessarily being adopted at the periphery with less intensity and with time delays, but such time lags are suggested by the repeated appeals for adoption of these programs and by the emphasis they are given in political statements. In general, it would appear that centralized programs have a better chance of success in Azerbaijan than in Georgia and in Armenia.

(c) While the older organizational systems of trusts in Georgia and in Armenia, which usually combined cultivation and processing, were established without regard to the system of civil divisions in the two republics, the new program of integration includes a clearly defined administrative-territorial component by seeking to combine similar farms and enterprises at the rayon level within the framework of a homogeneous organization.

(d) The issue of financial compensation among cooperating farms and other organizations still remains to be resolved satisfactorily, as suggested by Mamedov

(1984) with regard to some entities within the Azerbaijan agribusiness system. He stresses the absence of a tractor manufacturing industry in Transcaucasia and what he regards as unfair compensation for tractor imports from other parts of the USSR through the delivery of Transcaucasian fertilizer. He also refers to the cultivation and processing of cotton and grapes in Azerbaijan, regarding these sectors as offering particularly unfavorable terms of trade for Azerbaijan in Soviet domestic commerce.

(e) The new forms of horizontal and vertical integration have not yet proved to be particularly efficient. The data of Zayets and Goremykin (1984) on the disposal of the income of interfarm enterprises show, as mentioned earlier, the high cost of development and the low level of remittances to cooperating farms in Georgia and in Armenia as well as below-average bonus payments to workers and the generally poor results of integration in terms of rural development.

Elsewhere in the USSR, two other long-term agricultural programs have had considerable impact on spatial development, judging from Soviet agricultural publications. One is the Food Program of 1982, which is intended to improve the food supply of the Soviet population and has relevance to Transcaucasia in terms of fruit and vegetable production. The other is the Land Reclamation Program of 1984, which looks to an increase in the area under irrigation and drainage. To be sure, these two programs are also of importance for Transcaucasia, but not to the same extent as in the arid zone of Central Asia and in the non-chernozem zone of European Russia. For that reason, the two programs have had only limited impact on the process of integration in Transcaucasia.

Integration and Rural Change. The process of integration was not conceived as an isolated measure to advance only agricultural production. It actually called for overall structural change in the entire rural system (Stadelhauer, 1983, p. 129 ff.). Integration was expected to affect even rural settlement patterns, which require consolidation in keeping with the consolidation of land that occurred under the collectivization program. Furthermore, the raising of living standards has been part of all programs of rural modernization.

Recent Soviet publications have stressed the need for social change in rural areas, though not necessarily as part of the integration policy. For example, Aliyev and Kasymov (1983) emphasize the relationship between the Food Program, the intended increase in agricultural productivity and rural progress in Azerbaijan. The agribusiness movement figures only in secondary place in that context. This may be interpreted as an indication of problems in realizing the complex agribusiness program, since other publications discuss not only the macroeconomic agribusiness complex, but also the newer types of integration.

New Developments

Since the start of the various forms of integration in the early 1970s, a number of regional experiments have sought to overcome the initial problem of overadministration and the overlap of responsibility. These experiments were aimed at shaping

an entire agribusiness hierarchy, ranging from the agribusiness authorities at the rayon level (the RAPO) to umbrella administration at the ministerial level.

The development of an agribusiness authority at the rayon level was intended to end a situation in which various sectors of the agribusiness system were subordinated to different ministries. These separate vertical linkages made it difficult to achieve the necessary integration at the rayon level. The RAPO system was designed to bring all farm-related activities at the rayon level, from cultivation through processing and services to marketing, under a single authority.

Among the areas where the RAPO experiment was initially carried out—aside from Talsi Rayon in Latvia (see *Agrario-promyshlennyi kompleks*, 1982; Bondars et al., 1976)—was Abasha Rayon in western Georgia (Khutsishvili, 1982). Abasha Rayon lies in the humid subtropical zone of Transcaucasia and comprises the fringes of the Colchis lowland and the adjoining hill country. Its agriculture includes the cultivation of corn, vegetables and tea, and livestock raising for both milk and meat. The initial agribusiness (RAPO) authority was set up in 1974 by combining five state farms, nine collective farms, two interfarm enterprises, the rayon office of the Agricultural Equipment Marketing Agency (*Sel'khoztekhnika*) and various offices responsible for land reclamation, water supply, veterinary services, land consolidation and the inspection of rural engineering structures (Iyevlev, 1979, p. 125; Rusakov et al., 1980, p. 54). The main functions of the new RAPO system were autonomous planning, the distribution of finances and technical assistance, and the employment of skilled labor, with the agricultural sector in the leading position to fulfill these tasks. The necessary coordination was assured by a small group of specialists, with an assembly of representatives meeting once every three months.

The financial arrangements involved in RAPO integration were to be an important stimulus, with member institutions receiving 10 percent of the planned profit and 70 percent of any surplus profits in the form of bonuses (Khutsishvili, 1982, p. 55). Even the private sector received support, through the supply of feed for privately held animals. In some cases, private individuals under contract to farms assume responsibility for keeping the collective or state-owned livestock, a model followed in other parts of the Soviet Union as well.

The formation of the RAPO system resolved some of the earlier problems of integration, especially under the specific conditions of the Georgian SSR:

(a) By combining cultivation and processing within a single entity at the rayon level, the new system shortened transportation hauls;

(b) The combination of collective farms and state-run enterprises at the rayon level made it easier to allocate responsibilities and respect the rights of individual enterprises. For example, the shares of member institutions in commonly maintained processing plants could be more clearly determined (in Makharadze Rayon, a small tea processing plant was established jointly by the local collective farms and by the rayon authorities responsible for the industry);

(c) Within the RAPO system, a new effort could be made to integrate the private sector as well.

The success of the RAPO innovation in Abasha Rayon spread to other rayons in western Georgia—Makharadze Rayon and, in the Adzhar ASSR, Khelvachauri Rayon (comprising the surroundings of Batumi) (Takidze, 1983; Devadze, 1983). In addition to the earlier program of integration and spatial measures for the planning of settlement, operational management, financial planning and the incorporation of the private sector, the RAPO system in these rayons also succeeded in integrating the various decentralized elements of the tea industry. So far, however, the significance of the RAPO innovation should not be overrated since publications on Transcaucasia, at least, are still long on general policy statements, but short on specific economic data for these new entities.

By 1983 nearly all collective and state farms of Georgia had been integrated into the RAPO agribusiness network, which comprises most of the enterprises concerned with the processing of agricultural products. As of Jan. 1, 1984, there were 69 RAPO authorities in Georgia, comprising a total of 2,409 enterprises and organizations and a combined work force of 748,000. The constituent enterprises included 1,370 farms, 224 industrial processing plants, 419 agricultural service institutions and 143 construction agencies (*Narodnoye khozyaystvo SSSR v 1984 g.* [The Economy of the USSR in 1984], statistical yearbook. Moscow, 1985, p. 222).

While the RAPO system thus combined all farm-related activities under a single administrative authority at the rayon level, parallel integration was also effected at the ministerial level of union republics and of the USSR as a whole. In Georgia, for example, separate farm-related republic-level ministries were abolished in 1983 and merged into a new State Committee of Agricultural Production, responsible for farm production, land reclamation and water supply as well as the marketing of farm equipment. At the national level, the implementation of the new agribusiness concept lagged until Mikhail S. Gorbachev took office in 1985 and completed the reform of abolishing farm-related ministries in the central government, merging them into a new umbrella Agribusiness Administration. The effectiveness of this vast organization reform in the Soviet Union as a whole still remains to be seen.

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