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SUPPLY AND USE OF NECESSARY MEANS IN YUGOSLAV AGRICULTURE[1]

IN 1953 the total tillable land in Yugoslavia amounted to 9,810,000 ha. providing 62·3 ha. per 100 inhabitants. This land would produce sufficient food for the whole population if yields were on a level with those of well-developed European countries. Each 100 ha. of tillable land supports an agricultural population of 103, of which 55 are working population. Thus too many people look to the land for direct employment and subsistence.

The average yields per unit of land and livestock are about the same as they were between the two world wars and are much lower than yields in well-developed European countries.

TABLE 1. *Average yields of major crops and livestock products*

(*a*) *Grain yields* (*quintals per hectare*) (*1947–53*)[2]

Wheat	*Rye*	*Barley*	*Rice*	*Maize*
11·8	9·3	10·3	28·0	14·4

(*b*) *Livestock yields* (*per head of livestock*) (*1953*)[3]

Milk	*Wool*	*Eggs*
1,039 lit.	1·4 kgr.	48

There are three main types of land ownership in Yugoslavia, which may be called national, co-operative and private. Private individual farms predominate in arable and livestock farming, but the following trends are evident. (1) The socialist sector (national and co-operative) is systematically becoming stronger. (2) The role of the private individual farm is systematically but slowly decreasing in importance. (3) Agricultural machinery is mainly concentrated on national farms and in co-operatives. (4) Average yields per unit of land and livestock are lowest on the private individual farms. All this is quite logical,

[1] In this article the term 'necessary means' takes the place of 'capital'. In Yugoslavia 'capital' refers not only to means necessary for production but also to a particular organization of the means of production which is not to be found in modern Yugoslavia.

[2] *Statisticki godisnjak Jugoslavije, 1956.*

[3] *Statisticki godisnjak Jugoslavije, 1954.*

since the national and co-operative farms are relatively large and productive while the private individual farms are usually small and fragmented. The characteristic differences between national and co-operative farms need not be discussed here.

TABLE 2. *Percentage distribution of land according to type and ownership*[1]

	Total agricultural land	*Ploughland, gardens*	*Orchards*	*Vineyards*	*Meadows*	*Pastures*
National . .	17·7	4·5	2·3	2·5	4·5	46·6
Co-operative .	10·8	15·5	4·5	9·1	4·5	6·5
Private individual	71·5	80·0	93·2	88·4	91·0	46·9

TABLE 3. *Percentage distribution of livestock and poultry according to ownership*

	Horses	*Cattle*	*Sheep*	*Pigs*	*Poultry*
National. . . .	4·1	1·3	2·4	10·2	0·8
Co-operative . . .	14·4	11·1	18·8	19·2	14·8
Private individual . .	82·5	87·6	78·8	70·6	84·4

The problem of supplying and using necessary means is certainly most interesting at the private individual farm level, for the future of these farms is closely bound up with obtaining such means and using them profitably.

According to the livestock inventory of January 1953, there were 2,028,083 private individual farms, for which Table 4 gives the size distribution.[2]

TABLE 4. *Size distribution of holdings*

Size (hectares)	*Number of holdings*
up to 0·05	29,930
0·06–1	223,449
1·01–2	357,880
2·01–3	332,757
3·01–5	463,673
5·01–8	323,382
8·01–10	103,351
10·01–15	112,054
15·01–20	40,570
more than 20	36,837

[1] *Statisticki godisnjak Jugoslavije, 1954.*

[2] In 1953 a law was passed which limits the individual farms to no larger than 15 ha. each.

It will be seen that the size of the vast majority of individual farms can hardly afford a firm economic basis for profitable production. With their low yields these small farmers can hardly provide sufficient food for themselves and their families. Still less can they provide any means for further development. During the inter-war period, farmers had incurred considerable debts (which were written off in 1945). The causes of that indebtedness as given by M. J. Komadinić are interesting (Table 5).

TABLE 5. *Causes of indebtedness according to size of farm*[1]

(*Percentages*)

	Up to 2 ha.	*2–5 ha.*	*5–10 ha.*	*10–20 ha.*	*20–50 ha.*	*Over 50 ha.*
Buying land	16·11	21·2	32·6	28·19	49·36	71·86
Buying livestock	3·67	6·6	5·81	3·57	2·09	3·32
Constructing buildings	14·97	16·53	13·34	14·52	8·98	12·38
Expenses for production	5·92	6·85	3·44	9·21	7·44	11·45
Total	40·66	51·26	54·95	55·49	67·87	96·01
Maintaining the house and family	15·28	16·15	9·50	5·87	4·60	0·33
Food	31·64	20·59	8·71	12·76	1·84	0·04
Total	46·92	36·74	18·21	18·63	6·44	0·37
Paying debts	12·42	12·00	28·84	25·88	25·69	3·62
	100·00	100·00	100·00	100·00	100·00	100·00

The basic preoccupation of the small farmer has been to maintain the family rather than to improve production. On holdings up to 5 ha. (the most numerous group) from 37 to 47 per cent. of the debts were incurred for this purpose, while the remainder were incurred for the maintenance of the holdings or for repaying debts by instalments. Thus, not only are these farmers unable to supply their own means of production, but they borrow means mainly for purchasing consumer goods rather than for productive purposes.

The relatively rapid progress in industry and mining in present-day Yugoslavia has created new possibilities of earning away from the farms for peasants who are not fully engaged on their holdings. Many peasants have moved from the villages to the towns, selling their properties or leaving them to relations. A sample survey of the cash incomes and expenses of peasants in the year 1953/4 shows that the development of the economy has also enabled many peasants to obtain part-time employment. Farmers with up to 3 ha. have obtained 55·5

[1] M. J. Komadinić, *Problem seljackih dugova*, Beograd, 1934, p. 51.

per cent. of their cash incomes from outside the farms, while those with from 3 to 8 ha. and with more than 8 ha. have obtained 35·7 per cent. and 23·8 per cent. of their cash incomes respectively in this way.[1]

This increase in outside employment may be a fundamental reason why the amount of debt incurred for unproductive purposes is decreasing. But even allowing for these off-the-farm earnings, incomes are not sufficient to supply necessary means for increasing production. Table 6, taken from the same sample survey, illustrates this thesis.[2]

TABLE 6. *Cash incomes of private individual farms according to size (dinars)*[3]

	Average	*Up to 3 ha.*	*3–8 ha.*	*Over 8 ha.*
Total cash income from the farm	73,918	45,303	76,510	133,062
Cash expenses of the farm	59,934	37,671	63,245	102,062
Difference	13,984	7,632	13,265	31,002
Earnings from outside the farm	47,537	56,521	42,461	41,755
Investments in the farm	1,936	1,030	1,702	4,702

It is a fact that the prices of agricultural products have increased by 11 per cent. in relation to prices of industrial products since the inter-war period. But even so small farmers are not able to supply necessary means for themselves. These have to be supplied from other sources —by credit obtained from funds which have been earned in other branches of production.

Disposable means can be used by the farmer in two ways: as circulating goods in the course of production and as long-term investments. This has to be taken into account when supplying necessary means through credit, and when assessing the credit worthiness of farmers. If credit worthiness were to be assessed on the basis of the average incomes of farms in various size groups, all farms of less than 5 ha. would fall below the marginal limit, and even the number of credit-worthy farms of over 8 ha. is questionable. On what basis should credit be given to farmers? Credit based on mortgages gives some security to the creditor and may be sufficient for him, but as it carries no guarantee that it will be used profitably, it is not satisfactory from the point of view of the national interest. It cannot be a matter of indifference to the national economy whether the individual farm is

[1] *Statisticki Zovod, F.N.R.J.: Index No. 6, 1955*, p. 46.
[2] *Index No. 6, 1955*, p. 55.
[3] 1,000 dinars = 24 shillings or 3·3 dollars (approx.).

ruined as an economic unit or whether it improves in one way or another. Where the country is short of financial means of economic development it is obviously very important that means should be used profitably. Consider, therefore, one way of providing circulating means in the prevailing circumstances.

There is a series of problems which can be partially solved within the small-farm framework. For instance, the use of fertilizers, improved seeds, more productive livestock and more intensive planting methods are not dependent upon size of holding. The fundamental obstacle here is rather the shortage of means. The credit worthiness of farmers depends more upon the productivity than upon the size of holdings. But the small size of a holding is an obstacle to development in as far as it limits the possibilities for accumulating means. If means could be supplied from other sources, it would be possible to obtain better utilization of land and labour.

Land could be better utilized by growing crops which are more profitable than cereals, and this can be done without difficulty provided the cultivation of the more profitable plants is familiar to the farmers. Table 7 presents data obtained by the Institute of Economics in Skopje for the yields of different plants in 1951.[1]

TABLE 7. *Income obtained for various types of plant*

	Total area (hectares)	*Total income (mills. of dinars)*	*Average income per hectare (dinars)*
Cereals . . .	326,300	7,603	23,000
Industrial plants . .	46,700	3,985	85,000
Vegetables . . .	22,900	2,055	90,000

When considering the provision of necessary means for agriculture the aim is often to save labour. However, when a country's economy is not sufficiently developed to absorb such labour as may be released from agriculture at a given time, the aim should be to provide additional employment on the holdings themselves. There is another reason too for seeking this solution. The farm labour force includes the farmer as well as members of his family, and if there is no other source of income they all have to be maintained by the farm. Of course it would be neither wise nor acceptable to suggest a form of production which would reduce the productivity of labour. But at the existing level of productivity—perhaps even at a higher level—it

[1] D. Bojanovski, K. Dzonov, ing. Pemovska, *Razvoj na selskoto stopanstvo vo Makendonija.*

is possible to concentrate upon crops which absorb more labour and also bring in more profit than those grown at present. An analysis of the labour requirements of various crops in Vojvodina is given in Table 8.[1]

TABLE 8. *Labour requirements of various crops*

	Man-days per ha.
Wheat	26
Sugar-beet	100
Potatoes	170
Cotton	130

The growing of small-leaf tobacco in Macedonia absorbs about 600 man-days of labour per hectare, including the post-harvest work done in the farmhouse.

Of course the cash returns are more important to the worker than the time spent on the work; and from this point of view it is interesting to estimate how much society acknowledges the work through the market. Neither local nor world markets value the labour embodied in the production of various plants at a constant rate. This is because the productivity of labour is itself not constant as between various lines of production. Net income per man-day spent in producing various plants according to the calculation of the Institute of Economics in Skopje is given in Table 9.

TABLE 9. *Net income derived from various crops per man-day of labour (1951)*

Crops	*Income per man-day (dinars)*
Industrial crops	300
Cereals	346
Forage crops	349
Vegetables	405
Fruit	661

Thus 600 man-days spent on producing tobacco would return the same income as only 520 man-days spent on cereal production. If the labour on a small farm could be fully occupied in cereal production it would not pay to produce tobacco. But the farmer turns to tobacco because he can thereby obtain 520 cereal-days' wages, whereas if he

[1] Ing Zika, Bogdanović, *Kontrahiran je poljoptivrednih proizvoda*, Beograd, 1955. D. Bojanovski and others.

grows cereals he obtains only 26 (or in some cases, up to 40) days' wages. In terms of cash, he obtains 180,000 din. by producing tobacco compared with 17,000 din. at the most when producing wheat. The concentration of production on plants with very high labour requirements is not likely to continue for very long. Economic development is likely soon to absorb so much labour that agriculture will be faced with the problem of securing enough. But until then the production of plants which require more labour can result in a considerable increase in profits. This shows that even on such small holdings, all productive resources are not well utilized. It is evident that even the introduction of industrial plants and vegetables could contribute to better resource utilization. But such reorientation is not easily achieved. Even if it be assumed that the market can easily absorb more, a great financial problem arises in the provision of means for reorientation.

The more profitable types of crop give greater income per unit of land, but cost more to produce.[1] For example, in 1951 cereals cost 10,200 din., industrial crops 16,700 din., and vegetables 28,000 din. per hectare. Thus, to change from one crop to another might result in a two or threefold increase in costs. It is not easy for farmers to incur increases of this magnitude—especially when they have had little previous opportunity of saving. But this does not mean that they are not extremely interested in the question of how to obtain means to reorientate production towards more profitable crops.

Who would finance these smallholdings for such a purpose? The source of credit could include banks, credit co-operatives or other kinds of co-operatives, and factories which process certain farm crops. Whether a co-operative would use its own means or borrow them is not important for the present purpose. As an organization of agricultural producers the co-operative can be a useful negotiator between its own members and various other enterprises. In some cases it is best for the farmer to contract to sell his produce through the co-operative which is better acquainted with the market and can often offer him certain assistance during the process of production. Manufacturing enterprises should also be considered as possible sources of credit. Some such enterprises depend upon the farmers for certain raw materials. The experience of the sugar factories between the two world wars shows that such enterprises are greatly interested in helping the farmer not only with finance during the crop-growing period, but also with special technical assistance in growing the required

[1] D. Bojanovski and others, op. cit.

crops. Manufacturers are most ready to assist farmers when there is a scarcity of the raw materials which the farmers produce. When the accepted method of developing a backward country is industrialization, it should help agriculture by assisting the domestic production of the raw materials it needs. By making contracts for certain agricultural products the manufacturers secure regular supplies of raw material at contract prices. On the basis of such contracts, manufacturers can finance agricultural production.

In considering the size of these credits, they should be sufficient to cover the increased material expenses of production, but not to cover the whole cost of the commodity which is still in the process of production. The bearer of the costs of agricultural production should be the farmer himself, while the industrialist as an agricultural creditor should assist only where agriculture has insufficient means. The extent to which such assistance will vary—from the increase in production costs up to the whole of production costs or even more—is determined by a series of factors which may influence the creditor and the farmer. For tobacco and cotton, credits are about equal to total material expenses—i.e. 20–25 per cent. of the value of the product. These terms are very favourable for the farmer. Not only do they enable him to reorient his production but they also release the means which were employed in producing the original crop. These means can be used, therefore, either for the intensification of production in other directions or for raising the standard of living. There are indications that the farmer tends to retain a considerable proportion of such means in the processes of production. These credits do not tend to increase the long-term indebtedness of farmers. These are probably some of the reasons why the crops for which this form of credit is available tend to expand quickly.

The provision of long-term investments is another problem. Here, creditors and borrowers are in a qualitatively different position from that discussed above. In the engagement of means for longer periods, the general financial situation of the country and its prospective economic development must be taken into account. There is really no place for smallholdings of the Yugoslav type in a modern economy. The problem is what to do with them and their owners. There might be a tendency for them to disappear spontaneously in the strengthening of some farms and the ruin of the less efficient; but such a course could not take place in a socialist economy. Any other kind of expropriation would also conflict with socialist agrarian policy as it is

understood in Yugoslavia. For the nation it is most important that no production unit should fail. If units are unable to develop by themselves without obstructing others, then they can develop in co-operation with others. The form of collaboration depends upon various factors, the most important being acceptability to the individual farmers concerned. From the economic point of view, any form of collaboration which aims at solving problems which are insoluble within the small-farm framework means a practical step forward.

All this must be borne in mind when questions of investments are concerned. Problems of irrigation, problems of crop rotation for the conservation of fertility, problems of mechanization and many other problems cannot be solved within the small-farm framework. The average holding has about 4·8 ha. of land split up into ten or fifteen fields widely separated from one another. After meeting basic production expenses for low-yielding crops it can provide some 1,702 din. a year for investment, to which the household can add 13,265 din. It carries a labour force for which it cannot provide continuous full employment. Shortage of labour arises only for a very short period of the year mainly in connexion with harvest and threshing, when machinery is needed. It does not pay to use a machine on one holding alone, but if the burden of purchasing and using machines is spread over a group of co-operating farms it could pay, and could also further agricultural development. By easing the peak demands for labour, machinery would enable the farmers to concentrate more upon crops which would give them and their families more continuous employment.

A further problem arises in connexion with better utilization of land and labour. It has been mentioned already that the land gives higher yields under fruit trees or vineyards than under cereals, and that labour employed on orchards can earn twice as much as on cereals. The farmer is therefore interested in converting arable land to orchards. The bank, especially the co-operative, could give credit on the basis of participation since such investments are always profitable in present-day Yugoslavia. But would they really be soundly based? Economic conditions may well be different by the time the investment becomes effective. The land today suffers from extreme fragmentation and excess of labour. How are vineyards or orchards to be laid out? Machinery can hardly be used today, but tomorrow suitability for mechanical cultivation may be an absolute necessity. How should credit for orchards and vineyards be regulated so that

investment should be profitable not only today but also in the future? Co-operation is the best solution, not only in laying out orchards and vineyards, but in a variety of forms which would be to the advantage of the farmers. For example, a plantation could be established within which each farmer might own a plot though the whole plantation would be concentrated together so that it could be cultivated by machinery should this become profitable. In this way farmers in Kumanovo have attained good results. Such planting could be financed by the banks to a considerable extent; but the participation of the farmer is also necessary as a guarantee to the creditor. Through association in co-operatives, farmers could obtain technical assistance for cultivation, pest control, &c., together with help in marketing their produce. Here again farmers, through their co-operatives, would be able to overcome many of the handicaps which arise from the small size of their farms. All this would lead to better use being made of invested means. Under such conditions, profitable use of credit—i.e. profitable farming—would be a better security for creditors than any mortgage.

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