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# LACK OF INSTITUTIONAL FLEXIBILITY IN AGRICULTURE

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## *Some theoretical concepts*

1. A *social institution* may be called flexible if an external disturbance causes adjustments or adaptations of its constituent elements (structural or functional) over time, without changing the fundamental social relations of the institution. If there is no change we speak of inflexibility or rigidity. An institution lacks flexibility if its resistance to change is such that the external disturbances do not cause any alterations in its constituent elements; or if the change, when it occurs, alters the identity of the institution by changing fundamental elements, the strain in this case causing it to break rather than bend. Dealing with flexibility, or with lack of it, we have always to look for an outside force which tries to induce changes in the institution.<sup>1</sup> By *adjustment* we mean changes in the functions of the institution with no changes in structure. By *adaptation* we mean an alteration of the structure of an institution caused by outside influences.

2. There is a difference between functional and structural changes considered to be lesser changes on the one hand, and *fundamental* changes which bring about a qualitative difference in essential social relations among human beings on the other. For example (a) If a peasant holding acquires more land, and the family members work it by increasing their labour efforts (increase in function), such a change will be a flexible one. (b) If they acquire so much land that the family labour is not sufficient to work it and hired labour must be permanently employed, the social change is fundamental, and the holding can no longer be considered a peasant family holding. (c) But if for working the extended land the family buys machines (and does not hire labour), then there is no fundamental social change, and the holding remains a family one. In the second case we have to deal with a rigid institution; in the first with a flexible adjustable one; and in the third with a flexible and adaptable one (i.e. change in structure).<sup>2</sup>

<sup>1</sup> For considerations regarding a similar concept of flexibility limited to price mechanism cf. O. Lange, *Price Flexibility and Employment*, Cowles Commission Monographs No. 8, 1944, pp. 2, 3, 91.

<sup>2</sup> Regarding differences between fundamental and structural changes see J. Tinbergen,

The fundamental elements of an institution can be varied, and they depend on the character of the institution. Malinowski, dealing with cultural changes, distinguished several functions, such as those covering essential physiological needs, personal elements, instrumental, technical, institutional, normative, operative elements, &c. He maintained that changes of one element lead to changes in others.<sup>1</sup> To Marx the fundamental element was the change of technology (development of production forces) which brought about institutional changes (the production relations).

3. The persistence of non-financial elements. Under financial elements we understand here results of economic activity aiming at profit in terms of money. Lack of flexibility regarding the profit motive thus means a situation where a change in agricultural institutions, motivated by profit expectation, is expected to occur, but such a change does not in fact take place. In extreme cases the institution disappears or fundamentally changes its social character, but neither adjusts nor adapts itself to the profit motive.

#### *Population and institution in agriculture*

The institutional approach in agriculture is of such importance that even the definition of agriculture has an institutional character. Many household auxiliary and ancillary activities which in a more fully developed economy belong to another group of economic activities (manufacturing, transportation, building, &c.), in a lesser developed society are still considered as agricultural activities. Thus what is agricultural activity depends on the institutional development of agricultural organization.<sup>2</sup> 'Agriculture' here stands for joint economic activities of primary, secondary, and tertiary industries, integrated in agricultural organizations in a society with undeveloped division of labour.

Agricultural institutions are influenced, and ultimately, even fundamentally changed by, many non-financial elements. Population pressure is one of the non-profit motivated forces which may change the character of agricultural institutions. Childbirth is certainly a phenomenon where the profit motive is not the moving factor. On

*Economic Policy*, 1956, pp. 4, 5, 149, 186. His definition of fundamentals could be differently classified. Marx called changes in production relations fundamental social changes.

<sup>1</sup> B. Malinowski, *The Dynamics of Cultural Change*, 1945, pp. 105-9. For a criticism of the functionalist theory cf. R. Fletcher, 'Functionalism as a Social Theory', *The Sociological Review*, vol. 4, No. 1, vii, 1955. Regarding social change cf. W. F. Ogburn, *Social Change*; R. Manheim, *Man and Society in the Age of Transition*; U.N.E.S.C.O., *Social Change and Social Tension*; T. Parsons and I. Smelser, *Economy and Society*.

<sup>2</sup> *Measurement of Income Originating in Agriculture*, E.C.A.F.E., E. CN. 11 STAT./Conf. 3/3, 1953. U.N.-E.C.O.S.O.C.

the other hand the number of family members remaining on family land, or leaving it, is flexible and depends on both financial and non-financial considerations. We are dealing here with only one restricted aspect of the problem and are interested in the degree of flexibility or inflexibility<sup>1</sup> of agricultural institutions caused by movements of population according to social status. Sex differentiation also plays an important role in institutional flexibility. As there is a general tendency for the agricultural population to decrease in developed countries the question is who leaves agriculture first?

Most inflexible is the male owner-operator; then comes the female owner-operator. The number of owner-operators of holdings has increased where land reform has taken place and where population pressure leads to the dismemberment of rural holdings. Hired labour is next in inflexibility, and here again male agricultural workers are more mobile than female. In some lesser developed countries, however, there is an increase of male hired labour, showing a tendency for the extension of labour (and not machine) using capitalistic development in agriculture. There is an increase of female hired labour in some well-developed countries (possibly as a consequence of the Second World War) although on the whole female hired labour decreases more rapidly than male. Unpaid family members are the least inflexible and move away from agriculture fastest.

The figures in Table I support the following tendencies: (a) a relative decrease of agricultural population; (b) an institutional resistance to change, tending to weaken the family holding, with the owner-operator showing comparatively the greatest immobility and the family members the greatest mobility; (c) a tendency to deproletarianization of agriculture, fast reducing the amount of hired labour. This last institutional change is a development which has been taking place ever since the second half of the nineteenth century in European countries, and which gradually spreads to other regions as economic development spreads. In England between 1871 and 1951 the index number of owner-operators rose from 100 to 112; relatives working on the farm decreased to the very low figure of 21, and the workers to almost a half, only 55. In Italy the number of owners increased between 1871 and 1931 from 100 to 106, the sharecroppers increased to 118, and hired labour fell to 54. The same tendency is seen in France between 1896 and 1946 where per 100 holdings using hired labour the number of owners increased to 130 and that of workers fell to 85. In the U.S.A.

<sup>1</sup> The term mobility is used here for movements of individuals and flexibility for changes in institutions.

TABLE I  
*Active Agricultural Population by Social Status*  
*(Percentages of annual change)*

		Owner-operator			Unpaid family members			Hired labour			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Japan . . .	1947-50	+1.1	+8.1	+2.0	-4.5	-2.3	-2.9	+3.3	+5.0	+4.0	-1.0	-1.2	1.1
Egypt . . .	1937-47	..	..	-0.1	..	..	3.0	..	..	0.32	..	..	0.15
Mexico . . .	1940-50	..	..	+10.8	..	..	-3.5	..	..	-2.5	..	..	+2.6
Yugoslavia . .	1931-53	..	..	+1.0	..	..	-0.3	..	..	-2.8	..	..	+0.1
Portugal . . .	1940-50	-0.2	-1.3	-0.3	+2.1	-4.7	+0.2	+4.4	+9.2	+5.1	+0.6	+0.7	+0.6
Belgium . . .	1930-47	-0.8	-1.4	-1.4	-1.9	-3.6	-2.6	-3.0	-4.5	-3.2	-1.6	-3.3	-2.0
W. Germany . .	1946-50	-2.1	-7.6	-3.2	-0.5	+1.5	-1.2	-7.3	-5.1	-6.6	-3.8	-0.5	-2.1
Ireland . . .	1936-51	-0.4	-1.6	-0.6	-1.7	-3.2	-2.0	-2.5	..	-2.5	-1.3	-2.4	-1.5
Gt. Britain . .	1931-51	-0.5	-0.6	-0.5	-4.6	-1.0	-4.2	-0.1	+6.2	+0.2	-0.84	+2.8	-0.4
Sweden . . .	1945-50	-1.0	-1.8	-1.0	-6.1	+5.5	-3.9	-4.0	..	-0.40	-2.9	+3.8	-2.5
Denmark . . .	1940-53	+0.5	-3.8	+0.3	..	+0.8	+0.8	-2.1	-2.9	-2.3	-1.0	-0.5	-0.9
Norway . . .	1930-50	+0.1	-1.3	0.0	-1.3	..	-1.3	-1.0	-3.2	-1.2	-0.4	-1.7	-0.7
Finland . . .	1940-50	-0.2	-2.4	-0.6	-4.9	-2.1	-3.2	+3.0	-6.7	+1.2	-1.4	-3.0	-2.1
Canada . . .	1941-51	-1.2	-4.3	-1.3	-5.0	+53.0	-4.3	-0.9	-4.7	-0.6	-1.9	+9.0	1.8
U.S.A. . . .	1940-50	-1.6	-2.4	-1.6	-3.8	+4.1	-2.3	-2.5	+3.3	-2.3	-2.4	+1.8	-2.1

between 1910 and 1950 the number of agricultural workers fell to 57, and that of farmers to 64.

In the most recent years, 1950-5, the mobility of workers and family labour in Europe has been somewhat reversed, and the workers have been moving out of agriculture faster than family members. It is due to the increasingly strong 'pull out' factor of full employment in industry, which is even stronger than the already powerful 'push out' factor of agricultural mechanization.<sup>1</sup> This is also the case in countries with a quickly developing industrialization, i.e. those in eastern Europe, in spite of land reforms which were carried out on a large scale. Many agricultural workers in Yugoslavia preferred after 1945 to get employment in factories rather than remain on the land which they had got by land reform.

In the Soviet Union, on the other hand, in spite of accelerated mechanization there had to be a mobilization of 2 per cent. of the agricultural youth of the kolkhozes per year, to be transferred compulsorily to industry between 1940 and 1955. There are no published data of occupations by social status in the U.S.S.R. But the number of kolkhoz homesteads reached its peak in 1950 (20.5 million) and is gradually falling (19.7 million in 1955). In 1940 it was only 18.7 million. At the same time the percentage of kolkhoz peasantry fell from 57.9 in 1937 to 41.2 in 1955 when there were 82 million. The numbers of sovkhoz workers increased in 1940-5 from 1.8 million to 2.8 million and that of the M.T.S. workers from 537,000 to 3,120,000. In 1953 the members of the tractor brigades (some 1.8 million people) were transferred from the status of kolkhozniks to that of M.T.S. workers.<sup>2</sup>

There are little data for long-term comparisons of the very complex social status of agricultural population in under-developed countries, but it may be expected that this will follow the tendencies of mobility shown in the developed countries. In India the change from 1931 to 1951 was in the same direction, as the figures of labour force show (in millions):<sup>3</sup>

	1931	1951	±
Non-cultivating owners . . .	2.45	2.04	-0.41
Cultivating landowners . . .	51.3	79.9	+28.6
Agricultural labourers . . .	28.0	20.1	-7.9

<sup>1</sup> U.N.-E.C.E., *Economic Survey of Europe in 1955*, p. 170.

<sup>2</sup> *Narodnoe Khozyaystvo*, S.S.S.R., pp. 19, 128, 134, 138, 188. For changes in Asian people's democratic countries compare E. F. Kovalev (ed.), *Agrarnie preobrazovania v narodno-demokraticheskikh stranah Azii* (Agricultural Transformations in the People's Democratic Countries of Asia), Moscow, 1957.

<sup>3</sup> *Studies in Indian Agricultural Economics*, p. 226.

*Entry and exit*

Population problems cannot be considered as changes affecting a mass of individuals. People live in social groups and population pressure manifests itself through tensions in and between social groups. Most of the agricultural social organizations are production and consumption units at the same time. These organizations are subject to many changes, and alterations in their personal structures come with many other changes—instrumental, operational, technical, normative, &c. Thus the problem is much too complex to be reduced to the system of land tenure.<sup>1</sup>

We shall deal here only with extreme cases, those of fundamental inflexibility causing an increase or decrease in the number of units; enumerating briefly the causes of the entry and exit. These depend to a great extent on socio-economic structure and its development.

1. In a *tribal* society the land is allocated to the new entrants (mainly newly-wed couples) by the tribal head, from the common land, and the new household is included in the tribal economy.<sup>2</sup> Exit is also regulated by tribal customs and relates to death or expulsion from the tribe. In shifting agriculture, and in tribal or village organizations where there is a periodic redistribution of land, entry is still less important, as all holdings are quite uniform and non-stimulative, being equal and able to operate within the customary tribal economy.

2. In a family economy, particularly that of a joint family, most often the family holding is perpetuated, as there is no change in

<sup>1</sup> For some recent international comparisons of agricultural institutions mostly connected with land tenure, see Colin Clark, *Conditions of Economic Progress*, 3rd ed. 1955; U.N. *Land Reforms*; W. and S. Woytinsky, *World Population and Production*; Sir John Russell, *World Population and World Food Supplies*; K. Parsons, Penn and Raup, *Land Tenure*, 1956. Particularly for Europe: E.C.E.-F.A.O., *European Agriculture*, 1955; Folk Dövring, *Land and Labour in Europe 1900-50*, 1956; F.A.O., *The State of Food and Agriculture*, 1955; René Dumont, *Les Systèmes agricoles*, 1956.

<sup>2</sup> In the Bantu reserves in South Africa every newly-wed member of the tribe normally gets about 0.4 hectare of land as his homestead, and around 4 hectares of the arable land which represents about one-eighth of the total tribal land. Two-eighths of the tribal land is used for common pastures. For each wife an appropriate amount of land is added. The cultivable land is given to the male as his personal holding which returns to the tribe when he dies. Nowadays there is some expectation on the part of the wife and children that the land of the deceased will be reallocated to them. D. Hobart Houghton, *The Tomlinson Report* (A summary of the findings and recommendations in the Tomlinson Commission Report, Johannesburg, 1956); *The Pattern of Race Policy in South Africa, Digest of South African Affairs, IV*, 1956, State Information Office, Pretoria. For still stronger tribal relations in a more primitive agriculture in Kenya see S. and K. Aronovich, *Crisis in Kenya*, 1946; C. K. Meek, *Land, Law and Custom, in the Colonies*, pp. 76 ff.; Colonial Office, *Land and Population in East Africa*, H.M.S.O., 1952; East Africa Royal Commission Report, *Land and Population in East Africa (1953-55)*.



continuity of the family holding when individual members of the family die. The exit of the family unit takes place only if the family dies out. Inheritance of land is the method of entrance. In countries where real division of land is the law there is great rigidity, farm holdings having to be split with almost every new generation.<sup>1</sup> In countries where there is no real division but where consolidated farms as a whole are inherited there is more flexibility and less entry and exit of farms as such than in the previous case.

3. New entry can be made by purchase of land or farm, and this is the normal way in capitalistically developed countries which consider farming as a specialized occupation, trade, or enterprise. In this type of land tenure, the family cycle is not connected with changes in property, as there is a business continuity of the holding. In the commercial farm type there is a discontinuity between the farm and the family, and each has a specific institutional structure of its own. In some countries there is an astounding rigidity of agricultural holdings (in particular, Austrian agriculture shows such rigidity of size with practically no changes since the First World War).

Exit of production units is due to many factors, including the natural death of the owner, migration from land, partition among successors, and sale of parts of the land or of the whole farm.

*Inheritance* means change of property without new capital investment, although the adequate paying out of other successors having some other occupation by those remaining on the land means a steady outflow of capital from agriculture. On the other hand, purchase of land from others than farmers can mean considerable flow of capital into agriculture.<sup>2</sup> Where there is concentration of land there is a net number of exits, as the statistics of the U.S.A. and Great Britain show.<sup>3</sup> This drift out of agriculture refers mainly to small family farms which could not adjust themselves to new conditions and disappeared as independent units.

4. In many countries of Europe, Asia, and Latin America, *land reform* secured the entry of many new small production units, by

<sup>1</sup> The old Tchayanov-Marxist controversy whether the size of land adjusts itself to the size of family or vice versa, is thus resolved as neither is an independent variable. In modern agriculture, where the role of land and manpower is being reduced, and capital investment is of ever-increasing importance, they depend on a larger system of equations, where many 'push-and-pull', 'in-and-out', factors play their role.

<sup>2</sup> An expanded research of national accounts by sectors, with the agricultural sector properly defined, would be of great help in establishing the flows of current and capital transactions in and out of agriculture.

<sup>3</sup> The number of farms in the U.S.A. decreased from 1950 to 1957 by 802,000 or 14 per cent., and in the United Kingdom from 1951 to 1957 by 94,000 (also 14 per cent.).

force of law dismembering the old estates and large farms. In some countries where much of this took place the number of production units increased by 20 or 30 or even 44 per cent. (Mexico). The effect was mainly to level out differences in size. In fact, land reform where land was actually divided speeded up two basically different and historically opposite trends. One was the process of decomposition of feudal or semi-feudal estates which were inefficient but still resisted change, and of giving the land to more efficient peasant smallholders. The other gave land to those victims of capitalistic development, the agricultural labourers and small peasants, for whom the concentration of land into ever fewer hands meant being crushed and deprived of their own land. Political pressure and social justice required that they should be given land, especially in countries where no other means of existence were available.

5. *Collectivization* of land in Soviet-type countries resulted in institutional change—the exit, as independent units, of millions of peasant holdings, reduced from the status of production units to the status of households (consumption units). Thus, for ideological reasons, there was an impatient anticipation of the process of concentration of land by force of the State. This measure did not examine the flexibility of peasant holdings with regard to new economic and technical possibilities, but assumed their utter rigidity and inability to adapt themselves even when full employment of their resources had not been achieved. The result was that the anticipated economies of scale were offset by other factors, such as lack of personal initiative and efficiency in work, lack of flexibility on the part of the centralized management to adjust means of production to their full use. As this administrative change lacked material economic basis collectivization was carried out by coercion and arbitrary measures, and the whole system became degressive and inefficient and had to be changed.<sup>1</sup>

The next institutional normative change in the U.S.S.R. was the concentrating of about three kolkhozes into one, thus increasing the possibilities of economy of scale. But once more the administrative rigidity of centralized planning did not allow production to increase up to the possible levels, and since 1953, further organiza-

<sup>1</sup> Cf. for Poland, statement of M. Jaworski, U.N.—E.C.E., op. cit., 1956, and of E. Lipinski, in E.C.E., *Economic Bulletin for Europe*, 1957, No. 3, p. 31. The final judgement on kolkhozes in Yugoslavia, expressed by the National Assembly in 1957 was that experiment showed negative results; loss of interest by agricultural producers in their work, and decay of agricultural production. Therefore 'nobody thinks any longer of collectivization of agriculture in Yugoslavia' (S. Komar)—Federative Peoples' Assembly, *The State of Agriculture and Co-operation, and the Perspective for Their Development*, Beograd, 1957.

tional changes were found to be necessary to increase the flexibility of the kolkhozes, i.e. stimulation of producers by increase of prices; gradual relaxation and abolition of compulsory deliveries to the State, and the paying of more attention to peasants' material interest in general. On the other hand the peasant kolkhozniks showed great tenacity, and changed the fundamental character of the plots of land which they had received under the new agrarian policy, so that instead of subsidiary self-subsistence production they were turned to commercial production of a more intensive type than the kolkhozes themselves.

6. In the *post-collectivization* period in countries which almost entirely abandoned the Soviet type of collectivization, i.e. Yugoslavia and Poland, the peasants re-entered agricultural activity organized in family holdings as producers and consumers. A re-generation of agricultural production became evident after the collectives were allowed to disband. The policy first was to increase production by letting the peasants make the fullest possible use of their own productive capabilities, helping them by allocating more investment funds to agriculture, and trying to supplement by organizing co-operatives where the limits of small family holdings had been reached. On the other hand, priority is given to the technological leap in the effort to bring agricultural production up to modern standards on the large socialist estates run by workers' management. The whole system is liberated from administrative rigidity and a flexible system of land ownership exists, with free establishment of family holdings (free entry—although it is limited in Yugoslavia to a maximum of ten hectares of cultivable land per family holding), and a flexible system of marketing (free market prices and free sale of products).

7. *Human vacuum in agriculture.* A new development in European agriculture is a mass movement of people, particularly young people, from agriculture. This movement, the obviously complex causes of which should be more closely examined, shows that in many countries there is a rural exodus even where economic conditions in a narrow sense do not justify it. In France in 1955 50 per cent. of the owners of holdings of more than 30 hectares were considered to be without successors, and in those below 10 hectares the percentage was as high as 30 per cent. In Western Germany there is a tendency towards an ageing male agricultural population, and in Norway there are no sons remaining on land in many peasant families.<sup>1</sup> Recently in some of the most fertile parts of Croatia (the

<sup>1</sup> U.N.-E.C.E., op. cit., 1955, p. 141.

Danubian plain) as well as in the most mountainous parts (Lika) the same phenomenon became evident. This kind of movement is very strong in the U.S.A. Even in Texas the age of 47 per cent. of all farm operators is sixty-five years or more.

Further investigation might show how far all this is a consequence of war losses which are only now becoming apparent, and how far it is a consequence of the pull-out factor of industrial full employment, or of other psychological factors such as improved general education, and also how far modernization of agriculture has justified it economically. In any case this vacuum caused by the shortage of young people is bound to show itself in the near future in great institutional changes in the agriculture of countries where it occurs.

#### *Preservation of the peasant way of life*

Agricultural inflexibility is often linked to the preservation of the 'peasant way of life' based on tradition and past rationality of techniques, where agriculture is considered as an art rather than an economic activity based on scientific research and accountancy.

No doubt, peasant farmers and other types of agricultural population show many cases of non-rational conservatism. But there are also cases where other people's rationality based on different *principium rationis* is imposed upon the agricultural population which then rejects it. The reason for this rejection may appear conservative at first glance but may prove to be quite rational from the point of view of the peasant. Allegations of conservatism are sometimes too easily accepted, be it for reasons of preventing changes from taking place, or not admitting that things have already changed. Such allegations may serve also as a pretext for justifying imposition by force of changes against the interests of the agricultural population, or as an excuse for the failure of inadequate policies.

More intensive research is needed to investigate 'the way of life' and the 'conservatism' of the agricultural population. Perhaps a definition stripped of the emotional and romantic shell, might be that of a large number of different services supplied by, and organized on, an agricultural family or village basis:<sup>1</sup> economic (productive, consumptive, transport, distributive, &c.), protective, administrative, religious, health, educational, recreational, &c. It seems the village community movement is based on such multiple

<sup>1</sup> For some recent definitions of peasant family holdings cf. O. Howald *Schweizerische Zeitschrift für Volkswirtschaft und Statistik*, 1957, p. 151. F. G. Friedman (ed.) *The Peasant, a Symposium concerning the Peasant Way and View of Life*, Nos. 1-8, 1954-7.

services, rationalized, modernized, and multiplied, taking advantage of the non-utilized resources lying idle in the village.<sup>1</sup>

Studying the process of the reduction of functions of peasant families in Yugoslavia we noticed the rigidity of some of them (with a low coefficient of variation) and the greater flexibility of others. Comparatively most inflexible were the biological functions of the family (number of family members, percentage of the population in matrimonial status, &c.). All functions connected with the problem of expanding monetary economy showed greater flexibility. Most flexible were those connected with a higher standard of living (spread of electricity and expenditure for various services—medical, cultural, &c.).<sup>2</sup> The variation coefficients in the first group were around 0.18, in the second near to 0.28, and in the third from 0.47 to 0.72.

Pride and prejudice, honour and prestige in the environment could be transferred to economic language where conspicuous consumption plays a great role, but *conspicuous production* in traditional and modern ways should not be over-looked either. There are many instances where economic investment in capital goods was made with very little economic calculation but more for reasons of prestige—to have a good team of horses even though uneconomical on a small holding, or to have a stable or barn bigger than a neighbour's, is the counterpart on the production side of such conspicuous consumption as a large and expensive house, family festivities (weddings especially), rich national costume, radio, television, motor scooter, &c.<sup>3</sup>

In connexion with institutional inflexibility we shall deal in this paper with two cases of the 'way of life'. One is the prejudice of growing one's own food, and the other is the desire to have one's own implements and machines.

(a) Growing one's own food is one of the fundamental principles of subsistence agriculture. Even when the economic calculus shows

<sup>1</sup> D. Ensminger, *A Guide to Community Development*, 1957, pp. 65–92; V. T. Krishnamachari, *Community Development in India*, pp. 66–82; H. D. Malaviya, *Village Panchayats in India*, pp. 272–6, 280–3.

<sup>2</sup> R. Bičanić, *Reduction of Family Functions in Peasant Families*, Conference on use of statistical methods in sociological research, Beograd, 1957.

<sup>3</sup> For reasons of ideological prestige horses were replaced by tractors in the first days after the revolution in eastern Europe in many co-operatives where horses could have done the work more economically for many years to come. In an effort to keep the younger generation on the land in some countries, e.g. Sweden and Austria, the farmers were advised by experts to buy tractors or cars where mechanization was plainly uneconomical, in order to persuade the sons to stay on the father's farm. U.N.—E.C.E., op. cit.

an evident loss the peasant family will still grow its own food however uneconomical it may be. The result is that some kinds of staple food are grown where much more rewarding crops could be cultivated, be it for economic or for natural reasons. These crops are preserved only for reasons of peasant prejudice based on the family institution as a consumption unit as closed as possible. Since the turn of the twentieth century western European agriculture has moved away from this type of agriculture, and concentrated mainly on livestock and dairy intensive farming, relying for the supply of cereals on imports from abroad. Nevertheless in some countries the policy of growing one's own bread has become again, on the national level, the main bulwark of agricultural policy. Large subsidies given to staple food production, in order to make it adjustable to national needs under the existing institutional framework, represent the extension of the peasant prejudice from peasant family to national level for various reasons (strategic, full employment, &c.).

In the U.S.A. where there is excess production of grain, grain producers are paid for not producing certain kinds (i.e. wheat, maize, rice). This policy of making individually profitable the idleness of resources, however well justified it may appear from a national point of view, is difficult to understand from an international standpoint in a world where so many people are unable to satisfy their hunger, or even to produce their own food.

In the Soviet Union the policy of growing one's own grain led to the imposition of compulsory deliveries of grain all over the Union, with the effect that the more intensive and advanced areas, such as the Baltic republics with intensive dairy farming, had to return partly to grain production in order to satisfy the policy of compulsory deliveries of grain. The rigidity of the system of compulsory deliveries caused a retardation in the production of livestock and dairy products, and even a general recession of agricultural production in zones which had long ago passed this phase of agricultural development.<sup>1</sup>

(b) Peasant families desire to own their own implements and machines even when their capacity oversteps the organizational framework of the peasant family holding. This means an excessive investment in an agriculture which is otherwise poor in capital. This over-investment then leads to under-employment of capital goods when there is a great shortage of capital in other machines or other

<sup>1</sup> In the report of Mr. Khrushchev of 17 June 1958 a change to a more flexible system of compulsory deliveries in this respect was proposed and subsequently introduced. *Pravda*, 21 June and 1 July, 1958.

means of production. For example, the capital investment in agriculture in Yugoslavia is 600 dollars per hectare and in the U.S.A. 300 dollars per hectare (including land value). The investment in Yugoslavia is so much the larger mainly because of the great density of agricultural population (42 male agricultural workers against 4 in the U.S.A. per 100 hectares of cultivated land). It is also caused by the particularly large number of small family holdings each wanting its own means of production and its own house. The use of the means of production has to adapt itself to the relatively stiff relations of ownership and lack of other opportunities.

The number of ploughs in Yugoslavia in the private sector (i.e. peasant family holdings) is particularly large. In 1957 there were 2,320,000 holdings with 1,400,000 ploughs, or 60 ploughs per 100 holdings. But the area under plough was 6,960,000 hectares. Counting as optimum utilization one plough per 10 hectares (which is very low), 700,000 ploughs would be enough to work this area if rational overall principles of distribution could be applied. Thus there was an apparent over-capitalization in ploughs of 50 per cent.—i.e. half the existing ploughs, rationally distributed, could do the work for which twice the number is used today. A similar (very general) comparison for India (counting the area sown more than once as double) shows that on 100 holdings there are 75 ploughs, and that counting 10 hectares per plough some 13.5 million ploughs would be sufficient. Therefore, 59 per cent. of the ploughs could apparently be considered in excess.<sup>1</sup>

There can, however, be quite a different approach to this problem than the macro-economic one, namely the micro-economic approach of the peasant who wishes to have the equipment of his own choice; to have it at the time most favourable for his work; to be independent of other people's services, and not to have to pay excessive prices for such services. On these grounds it may pay to have one's own plough even in such general situations as previously described.

Some years ago Colin Clark estimated that the investment in tractors in Great Britain was carried to excess. Britain had the greatest density of tractors in the world per 100 acres of arable land, 2.5 times more than U.S.A., and 3.5 times more than France or Denmark. He attributed this mainly to the British taxation system which enables farmers to spend part of their taxable income on the purchase of machinery rather than pay it to the treasury, as this expenditure is exempt from taxation.<sup>2</sup>

<sup>1</sup> The quality of the ploughs is here not taken into account.

<sup>2</sup> *Manchester Guardian*, 25 May 1955.

Unused, excess capacity exists also in the U.S.A., in land, in machinery, and in tractors. There is even a surplus agricultural population, as we shall see later.

There is excess, unused capacity, due to institutional rigidity in the Soviet Union. This was officially admitted in 1958 when the Machine Tractor Stations were abolished. It was then said that there were too many people engaged in them, doubling the administrative line of the kolkhozes, often one M.T.S. serving just one kolkhoz.<sup>1</sup> Expenditure for the superfluous personnel amounted to 4.8 mrd. roubles a year, as they worked only seasonally and had to be paid all the year round. Altogether, on an average, one quarter of all M.T.S. (i.e. 2,250 M.T.S.) served up to no more than 5 kolkhozes each in 1955. M.T.S. machines had to work from 10 to 100 kilometres away from their stations, and depreciation of machines was premature causing excess expenditure for repairs. Allocation of inappropriate types of machine was not infrequent. The M.T.S. had full monopoly of large machines; they were expensive and did not serve the kolkhozes at the right time, nor with the proper service. Yet the stations had adverse balances which had to be met on the State budget. Khrushchev estimated that the kolkhozes could use machines much better, and do the same amount of work with 80 per cent. of those used by the M.T.S.

This institutional change could not be carried out for many years because of administrative rigidity, caused by the ideological stiffness of the agricultural policy makers. The reasons given were that it would mean a retreat from state ownership to the lower, co-operative level of socialist property.<sup>2</sup>

In Yugoslavia experience with M.T.S. was so unsatisfactory that they were abolished in 1950.

#### *Institutional influence on the agricultural terms of trade*

It is too often assumed that agricultural producers face a market of perfect competition because they are, to a very great extent, small producers who cannot influence the market prices by the small quantities which they offer for sale,<sup>3</sup> and that for this reason their production is not influenced by prices, though it is admitted without

<sup>1</sup> Mr. Khrushchev's speech, *Izvestia*, 1 March 1958.

<sup>2</sup> J. Stalin, *Economic Problems of Socialism*, pp. 96-104.

<sup>3</sup> We are far away from perfect competition in agriculture as this definition shows: '... in an adjusted agriculture individual farms would be producing the products in which they had greatest comparative advantages, farms would be of such size that unit production costs were at a minimum, inputs would be used in such combinations and amounts that marginal costs equalled marginal revenues, and both quantities of resources used in agriculture and the volume of farm input would be such that market



controversy that they buy goods at the monopolistic price level.<sup>1</sup> These statements only partly correspond to facts, as the inability to influence prices by producers occurs also where monopsonistic tendencies are prevalent, as is the case in many agricultural markets. Monopolistic and monopsonistic dominations depend on the size of the markets, and are observable even on small local markets. The technique of trade should not prevent us from noticing the essence of this kind of imperfect competition. Improved competition already represents a higher level of economic development.

In a capitalist developed country, with sufficient capital available, large storage facilities, a developed transportation system, and a fairly large and transparent market, the monopsonistic tendencies are not so obvious. Nevertheless agricultural protective organizations in this field, such as sales co-operatives, public warehouses, credit and market control, &c., are the best proof of the existence of such monopsonistic pressures though they are partly neutralized or checked.<sup>2</sup> The recent spread of contract farming in the U.S.A., Sweden, and the U.K., &c., certainly strengthens the monopsonistic tendencies. It somewhat freezes the demand over a certain period giving the farmer certainty and elimination of risk. The agricultural producer prefers to renounce for a limited time his managerial function of manœuvring on the market as a seller, in order to concentrate on combining the factors of production. He gains more stability in his money income together with the possibility of making larger and more expensive investments. The managerial decision making and risk bearing is then taken over by big business ('agri-business') capitalist corporations operating on a large scale.<sup>3</sup>

prices enabled earnings of labour and capital in farming to be comparable with those outside of agriculture, non-monetary factors taken into account.' G. E. Grandew, 'Alternatives to Orthodox Programs and Goals of Agricultural Adjustment', *Journal of Farm Economics*, 1957, p. 1634.

<sup>1</sup> *Policy for Commercial Agriculture*, Report of the Sub-Committee on Agricultural policy to the Joint Economic Committee Congress of the U.S.A., 10 Feb. 1958, pp. 3, 12, 17.

<sup>2</sup> Cf. in particular the striking analogy which Vining finds between the workers' trade unions, and the farmers' organizations' practices in the U.S.A. Vining's main idea is that farmers there should get stability of income through organization as workers get it through their trade unions, and big business in monopolies. He defines stability as a fixed relationship between two calculations. He compares mandatory co-operative marketing to the T.U. closed shop; collective bargaining of farm co-operative and industrial management in setting up commodity prices, to T.U. bargaining for wages; the parity principle to the escalator clause in labour clause contracts; rules on the assignment of allotment acreage to the seniority rule. Surplus production and surplus acreage for him are similar to labour unemployment or idle resources in industry. Rutledge Vining, *Parity, Price and the Farm Problem*, A.E.R., Supplement 1958, pp. 343 ff.

<sup>3</sup> Such a farmer was wittingly called an agricultural foreman by D. F. Capstick at the conference of South-western Economists, Dallas (U.S.A.) 1958.

The purchase of agricultural products for the 'ever normal granary', strategic stock-piles, emergency reserves, communal feeding, foreign aid, &c., provide other institutional forms of agricultural trade which relieve monopsonistic pressures by increasing the demand for agricultural products.

There is strong criticism in America of the present American agricultural policy. Price support is criticized in that it benefits only large farmers, in that it discourages the 'natural movement' of farm population out of agriculture (the 'natural' principle being: get bigger, get better, or get out), in that it increases the government cost of storing and acquiring surpluses (amounting already to 7.3 milliard dollars), and in that higher prices cause loss of foreign markets.<sup>1</sup> From 1932 to 1956, 22.5 milliard dollars were spent for agriculture (net cost) of which one half went to stabilize prices and incomes. This amounts at present to about 2 milliard dollars a year.<sup>2</sup> The efforts to get land out of production through the Soil Bank mechanism cost the Federal budget in 1957 1 milliard dollars for 83,000 conservation reserve contracts. Nevertheless the aggregate net income of farm operators declined from the peak year of 1949 to 1956 by 34 per cent., but as there were fewer farms, the decline *per caput* was only 6 per cent., while the overall increase of income per head in the U.S.A. amounted to 37 per cent. Thus the still greater flexibility of incomes than of farms made life for those remaining on the land possible at only a little under the previous level. Those going out (about 1½ million farms and 3 million people) found employment outside agriculture more profitable.<sup>3</sup> The policy did not achieve the adjustment of demand to production. Private demand for agricultural products was not expanded and therefore surplus stocks increased. In order to get rid of them a double price system has been

<sup>1</sup> For recent discussion of the problems of American agricultural policy see particularly *American Economic Review* (Suppl. 1958) Address, articles, and discussion of J. D. Black, W. Wells, R. Vining, E. J. Working, &c. The Compendium Policy for Commercial Agriculture connected with the U.S. Congress Hearings, 16-20 Dec., 1957; *Journal of Farm Economics*, Dec. 1957, articles by J. D. Black, J. Brandon, E. O. Heady, &c. Committee for Economic Development, *Toward a Realistic Farm Policy*, U.S. Congress Joint Economic Committee, *Policy for Commercial Agriculture* (Papers, Hearings, Report of the Sub-committee), 1957.

<sup>2</sup> U.S. Department of Agriculture, *Realised Cost of Agriculture and Related Programmes*, March 1957.

<sup>3</sup> T. S. Schultz is of the opinion that the main cause of the maladjustment of agriculture in the U.S.A. is not the unsatisfactory allocation of land but the labour force which is still too large, although it has sunk to a bare 12 per cent. of the active population, having been reduced by 3 million since 1940. T. S. Schultz 'Economic Prospects of Primary Products', p. 22, *Round-table of the International Economics Association*. Rio de Janeiro, 1957. I am indebted to Prof. Schultz for giving me this paper before it was published.

introduced for exports, and great quantities sold or given away as aid or grants. The acreage decreased, but more intensive farming of these parts under cultivation actually increased the total volume of production.<sup>1</sup> Rigidity of soil allotment was offset by flexibility in capital. Moreover the more flexible and non-restricted crops (barley, sorghum, and soyabeans) were substituted for restricted crops and their production greatly increased. Most critics agree on one thing, that the basic problem is that of institutional inflexibility. 'All of the people now in commercial agriculture using all of the land, machinery and other resources they are now using, could not earn reasonable incomes at free market prices for their products.'<sup>2</sup>

One is impressed by the fact that the main practical proposals for new agricultural policy measures are restrictive, limiting production, and nationalistic in character, solving the problem within national frontiers rather than by expansion of demand and of production. One is tempted to ask what kind of income and price levels would be reached if a break through the existing price-cum-income monopolistic circle could be achieved, and full use of productive resources envisaged for agriculture.<sup>3</sup> There are some experts who think that in order to achieve income parity at the present aggregate income level in the U.S.A., the agricultural population would have to be halved (from 22 to 10 million, and the number of farms reduced to almost one-third, from 4.9 to 2.2 million). If such a tremendous change be the price of achieving stable income, what would be the price of achieving full use of productive capacity?<sup>4</sup>

In under-developed countries the monopsonistic tendencies are much more highly developed, and their institutional character more visible. The markets with strong imperfect competition are most obvious on the lowest level of the local (village) market. The barriers to the entry of new buyers to the market are often limited by custom, local or central government regulations, and also by the position of

<sup>1</sup> According to Dr. B. T. Shaw American agriculture produced in 1957 about 40 per cent. more from the same acreage as in 1939. Wheat production is 27 per cent. more on 17 per cent. less land, maize 32 per cent. more on 17 per cent. less land, and the cotton acreage though reduced by 45 per cent. yielded 95 per cent. as much cotton as in 1939. A similar trend is shown by Dr. F. Wahlen in western Europe, where the area was reduced, the labour force cut by one-fifth and at the same time the volume of production rose by 20 per cent.

<sup>2</sup> Committee for Economic Development, *op. cit.*

<sup>3</sup> Such an experienced expert as L. H. Bean estimates America's capacity to produce in agriculture by referring to a possible increase in acreage of 40 per cent. and of production of 50 per cent. 'Agricultural Capacity', *America's Needs and Resources*, 1955, pp. 810-12.

<sup>4</sup> J. A. Baker, 'Full Flexibility will not Solve the Farm Income Problem', *Policy for Commercial Agriculture* (Papers submitted), p. 466.

monopsonistic buyers sometimes strengthened by government pressure for taxes in money, particularly in the colonies. The personnel for this trade often represents an extension of tribal or village organization, where the local chiefs assume this position of monopsonistic buyers of agricultural products. On the other hand some marginal individuals or traders' *élites*, strongly bound by their loyalties, form potent monopsonistic and monopolistic groups, based on social deviance.<sup>1</sup> The narrow markets loosely integrated, the deficiency of storage in the hands of the producers, the consumers, and the dealers, and the shortage of capital restrain to some extent the monopsonistic tendency. On the other hand it is strengthened by restrictive trade practices, the transportation bottle-neck and many institutional elements such as lack of sellers' organizations and the splitting of solidarity for non-economic reasons (different tribes, racial groups, villages, nationalities, &c.). The trader-cum-moneylender is often in complete control of an area's contact with the outside world, controlling even the post and letter writing where there is a high degree of illiteracy. The very rigid institutional elements on the lowest level show a gradual weakening as one approaches the higher level of market organization, where capitalistic market practices prevail over the rigidity of local markets<sup>2</sup>. Institutional rigidity enables those in control of the market to impose prices which are arbitrary and which depend on their 'free will' and irrational interests. The result is an unstable system of prices sometimes showing several hundred per cent. differences over very short distances or periods of time.

Our survey of price variations in Croatia in 1939 after the harvest established that prices paid to the peasants for wheat on local markets differed from 70 to 165 dinars, and for maize from 90 to 202 dinars per 100 Kg.<sup>3</sup> The position is aggravated by a great number of intermediaries, whose gains are always borne by the weakest link in the chain, the small peasant producer. Thus the greatest exploitation of the peasant producers takes place even before their goods reach the market operations of wholesale commerce.

In Soviet-type countries the trade in agricultural products was

<sup>1</sup> For the most recent description of this behaviour see B. Hoselitz, *Sociological Approach to Economic Development*, Atti del Congresso Internazionale di Studi sul Problema delle Aree Arretrate, 1956, pp. 755-78. See also Hoselitz, 'Economic Growth and Development', *American Economic Review*, Suppl. 1956, p. 37.

<sup>2</sup> For a description of such local monopolistic and monopsonistic markets see *All India Rural Credit Survey*, vol. iii, the General Report 1954, pp. 100-6. For West Africa cf. P. T. Bauer, *West African Trade*, pts. 3 and 7. For pre-war Yugoslavia see R. Bičanić, *Kako Živi Narod* (How people live), pp. 39, 69-84.

<sup>3</sup> R. Bičanić and others, *Najnužnije narodne potrebe*, 1940, pp. 46-53.

rigidly institutionalized, except for the kolkhoz market. The State purchasing agencies, operating under administrative rules were in administrative and economic control of the institutionalized markets, with planned or government fixed prices and 'hard' norms of deliveries for each kind of institution (compulsory deliveries, payments in kind, M.T.S. services, State contractual deliveries, State purchases) and the income was distributed according to rigid administrative rules, different for each kind of institution. The results of this institutionally and ideologically rigid Soviet price policy was that 'up to 1953 the purchasing prices for the most important products were low, they did not repay the labour and material costs, and did not secure the minimum conditions for the development of social production.'<sup>1</sup> The slow increase of agricultural production in the socialist sector was the consequence of this inflexibility.

The rigidity imposed upon the agricultural producers, who were firmly organized into kolkhozes, had grave consequences. The producers were not interested in increasing production. Livestock production in particular lagged behind total agricultural production, and there was price discrimination against the kolkhozes. The goods sold to the kolkhozes were sold at the retail prices, while the sovkhozes made their purchases at wholesale prices. There were some unexpected results. There was an increasing difference between the biological harvest on the fields, and the harvest in the barns. On an average, most of the difference managed to leak between field and barn. On the other hand, the kolkhozniks' plots which were institutionally considered as complementary sources of kolkhoznik family food, grew into a major source of marketable food. The peasant families, reduced to small plots of land comprising only 4.3 per cent. of the total sown area, showed such vitality that their spontaneous production achieved a faster rate of growth than the planned production of the common kolkhoz fields. Kolkhoznik plots were responsible for as much as 45 per cent. of the total production of potatoes and vegetables, 46 per cent. of the cattle (56 per cent. of the cows), 40 per cent. of the pigs, and 83 per cent. of the goats.<sup>2</sup> Also, compulsory deliveries to the state by kolkhozniks from their plots amounted to 19 per cent. of all meat, 16 per cent. of milk, and 11 per cent. of wool. These deliveries were abolished from 1 January 1958. Dividends and money income of the kolkhozniks from the common land brought them in 1957 43 milliard roubles and sales on the kolkhoz market 37 milliard roubles.<sup>3</sup> The total volume of

<sup>1</sup> Khrushchev report to the Central Committee of the C.P.S.U., *Pravda*, 17 June 1958.

<sup>2</sup> F.A.O., op. cit., 1957, p. 116.

<sup>3</sup> U.N.-E.C.E., op. cit., pp. i, 10, 2.25-26.

trade in food increased from 1940 to 1955 in the State and co-operative shops by 43 per cent., and in the kolkhoz market by 68 per cent. The prices increased in the former by 41 per cent., and in the latter by only 11 per cent.<sup>1</sup>

Institutional rigidity on one hand stimulated the peasants to find an outlet for individual activity on the other.<sup>2</sup> The rigid institutional set up of prices and volume of production leads to the appearance of non-normative markets. They are both linked, like a system of double flasks in hydromechanics. The greater the rigidity of one part of the institutional framework, the greater the pressure for flexibility in another market. One cannot help remembering the dictum of A. G. B. Fisher: 'The more stabilization the less stability.'<sup>3</sup>

Following the large expansion of sown areas of new virgin fields in Kazakhstan and Siberia the main interest of Soviet agricultural policy turned to intensification. For this purpose the rigidity in agriculture has had to be softened, and considerable reforms for the improvement of unsuccessful institutions carried out. The new system of prices and deliveries to the State, introduced in July 1958, means a considerable weakening of institutional differences, and a strengthening of the uniformity of the price system for products bought and sold by kolkhozes.<sup>4</sup> The principle is accepted that agricultural products should not be sold at less than cost, and the prices should enable the kolkhozes to accumulate funds for their own investments as well as for their contributions to investment in heavy industry. Prices must be stable and flexible at the same time, depending on the outcome of the harvest. The principle of direct material interest of the kolkhozes and the individual kolkhozniks is stressed, and the kolkhozes are left to sell on the kolkhoz markets all produce which the State does not take. Nevertheless, compulsory quotas of deliveries are all centrally planned and the prices fixed according to zones of production.

<sup>1</sup> Calculated from data of retail trade, food and indices of prices, *Narodne hozyaystvo*, S.S.S.R., 1956, pp. 201, 207, 210, 215.

<sup>2</sup> One is inclined to ask oneself what increase of agricultural production in the U.S.S.R. would take place, particularly in the critical livestock and dairy, fruit and vegetable production, if, say, the kolkhozniks' plots were to be doubled to 8.6 per cent. of the total sown area, or from 0.3 to 0.6 hectares per family. What a release of administratively blocked production forces this flexibility could represent.

<sup>3</sup> 'The more we provide a formal stability in this way (i.e. piecemeal) for selected industries, the more we concentrate the necessity for flexibility upon the other sectors of the economy left outside. Fluctuations which apart from efforts to impose partial stability in the selected industries might have been quite manageable are therefore likely to be converted into violent convulsions.' A. G. B. Fisher, *Economic Progress and Social Security*, p. 202.

<sup>4</sup> Khrushchev, *op. cit.*

The price leadership of the sovkhozes is established, although in 1956 only 28 per cent. of all sovkhozes had positive financial balances.<sup>1</sup> On the whole the reform is directed towards strengthening the market forces, but it can develop in many different ways, increasing the role of kolkhozes or turning them into sovkhozes.

In conclusion I should like to say a few words on the perspectives for agricultural institutional development. In several papers the institutional set-up of agriculture in under-developed countries was considered in opposition to that of developed ones, and subsistence and family farming opposed to commercial agricultural enterprise. Are we right in doing this? Is it really a case of *either . . . or?*

Does not history teach us about multi-institutional frameworks of agriculture? Cannot both types exist side by side, each performing a different economic function? Cannot the labour-intensive family farm with its scarcity of land exist alongside the capital intensive, large agricultural estate which I believe would be better socialized?

There is full scope in the modern development of agricultural technique for both types: for the large-scale commercial agricultural enterprise feeding great numbers of the population, and for the small, family holding dedicated to family subsistence, part-time farming, and the supplementing of family income, using the surplus labour and leisure time of the family members. Let us look at it with no limitations of national frontiers. There may be areas so short of land, and so thickly populated, that there would be no room for large estates, and others so richly endowed with fertile land that only a small part need be devoted to subsistence farming, the major part supplying the wide world with its main foods and fodder.

The strongly marked increase of part-time farming in advanced capitalist countries, and the irresistible trend towards strengthening the production on kolkhozniks' plots in Soviet-type countries, are evidently part of the same general tendency imposed by modern technological development. It seems to be of a more permanent character than is sometimes envisaged. What will happen in the future industrial society, when the expectation of life is extended to over seventy years of age, and the working hours shortened to 30 or less per week? Will the workers' leisure be exhausted in horse or dog races, and in watching football games, that most frustrating way of spending leisure in the lonely crowds of industrial agglomerations in both capitalist and socialist countries?

Is not modern civilization moving in the direction of multi-institutional agricultural organization? We have to bear in mind that

<sup>1</sup> S. Nedelia, *Finansy S.S.S.R.*, p. 35.

the process of industrialization of agriculture is simultaneous with the movement of urban populations from towns to suburbs, and from suburbia to conurbia and to exurbia—back to nature. Thus what used to be a romantic dream of integrated peasant culture may turn into the general pattern of life of the humanity of our atomic age, removing the difference between town and country, and between agriculture and industry. I feel deeply that we should give some thought to these ideas in this country of India, which gave the world the great teacher of integrated humanity, Mahatma Gandhi.

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It is clear from what Professor Bićanić and others have said that in the highly developed economies agricultural inflexibility shows itself in a tendency to over-supply its markets, whereas in the less well developed economies, agricultural inflexibility often shows itself in an apparent inability to expand production in some cases even to the point of satisfying the basic physiological requirements of their populations.

Both types of situation have this characteristic in common. Efforts to increase elasticity through deliberate planning and governmental intervention usually have comparatively little overall effect, and can even intensify the problems they would solve. Another distressing effect is that when responses or lack of responses to economic stimuli are not what the economist expects, he is prone to label the producer's responses 'perverse', or condemn him for 'irrational' conservatism. Professor Bićanić is surely right when he suggests that the agricultural producer might well be perfectly rational in what he does. It is just that the principles upon which he operates are different from those which economists, administrators, and legislators in their ignorance—or their arrogance—scribe to him, often without any preliminary investigation whatever. For example, an agricultural producer might well put greater value on security or self-sufficiency or leisure or local prestige, as measured by the size of his land or the size of his family, than he does on cash income. In such cases if we wish to induce a change in agricultural conditions we either have to change the stimulus from cash inducement, or change the producer's scale of values. It is quite futile to assume that he must respond in a certain way to a certain stimulus, and then label him perverse because he does not. Another frequent reason for apparent lack of flexibility is that the economist does not take into account all the factors concerned. During a recent visit to Yugoslavia I was told a story—it may have been my good friend Professor Bićanić



who told it to me. An enthusiastic extension worker persuaded a peasant in Bosnia to get rid of his cow, which gave only enough milk for his family, and buy a high-yielding cow from Slovenia which would give much more milk for very little more labour and fodder. A year later the extension worker called again at the farm and inquired about the cow, only to be informed that she had been sold. 'But why?' he asked—'didn't she give much more milk than the old cow?' 'Yes' said the farmer—'but you didn't tell me what to do with the milk.' As can be deduced from the illustrations Professor Bićanić has given us, the benefits of specialization and comparative advantage presuppose an organized market which in turn presupposes an organized transport, storage, and distribution system. In the absence of an established stable and proven market not only for what he would sell but for what he must then buy, is the producer being irrational if he fails to respond to attempts to make him specialize? A self-sufficient farm programme might appear inefficient, but let us be very careful before we discard it. For a large number of agricultural producers, to reach a stage of physiological self-sufficiency would represent an enormous advance, and in many cases it would be much easier and less costly to achieve this either within the farm itself, or within the village community, than it would be to reach an equivalent standard of living through the development of an extensive market economy. Under widespread conditions the desire to grow one's own food in sufficient quantity and variety should not be dismissed as a prejudice, but should be given every encouragement and technical assistance as the most practical first step forward.

Again, is the peasant's desire to own his own equipment no more than a prejudice? Professor Bićanić has already mentioned some of the strictly non-economic benefits derived from owning one's own implements. Perhaps, we can take this a stage further. He has mentioned *conspicuous production* as a strictly non-economic reason for investing in equipment. I think we can expand this by saying that agricultural machines are in part producer goods and in part consumer goods—that they are used partly as factors of production, partly as means of satisfying purely personal and domestic needs. Agricultural economists generally neglect this latter function in their calculations, often with unfortunate effects on investment policies. Pride of ownership and prestige have already been mentioned. Consider also the domestic aspect. For example, in the United Kingdom at present there are hundreds of milking machines which serve no strictly economic purpose whatever. By this I mean that if the machines were removed there would be ample labour on the farms

to hand-milk without curtailing any other productive operation. The milking machines perform the very desirable function of reducing drudgery; but in this they fall into the same economic category as domestic washing machines where considerations of maximum utilization, and costs and returns, hardly apply. Indeed the two may be considered by the small family farmer—or his wife—in exactly the same way and, if money is scarce, it may be a matter of indifference whether she hand-washes the clothes and machine-milks the cows, or hand-milks the cows and machine-washes the clothes. But of course the milking machine is classified as a factor of production and its costs are included in costs of production with appropriate tax deduction. The costs of the washing machine are considered a purely personal domestic expenditure. The same considerations apply to some extent to a great deal of farm machinery. It is partly used just to make life more pleasant or less unpleasant. In this the farmer is being entirely rational. If he can ease his burden in this way, good luck to him. But if we persist in considering all farm machinery investment in a free economy as productive investment, of course there will appear to be excess investment. But it is we who would be irrational, not the farmer. If we go one step further—or should I say, one step worse?—and subsidize farm machinery in the belief that we shall necessarily increase agricultural production and/or reduce unit costs, we are thus likely to be dismayed by the results. This is not because the producer is inflexible, but because we have applied the wrong stimulus.

Also, of course, we have to remember that what is excessive investment in machinery for a normal season might well save the situation in a bad season. Thus from the farmer's point of view there are three entirely rational elements involved in such investment: production, insurance, consumption—the first two being most important on the large commercial farm, the latter having very considerable effects on the small family farm and the peasant farm. Any realistic analysis or prediction must take all three elements into account.

It is we who are being inflexible if we persist in basing our economic policy and analysis on models derived from other spheres of activity and quite inappropriate to the situation in hand.

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The role of the critic is to be critical. This is no easy task in the case of Professor Bićanić's paper, for his researches on his subject are thorough and, in the main, he has proceeded from general

hypotheses to specific conclusions with fine logic. In all candour, however, I must confess that I am more impressed with his facts than with his theory. His lengthy preliminary discussion has but one function, to set the stage for a critical analysis of three contrasting sets of agricultural problems and policies, those in developed countries, in under-developed countries, and in Soviet-type agriculture.

The entire section on farm to non-farm migration might have been summarized simply by saying that, *ceteris paribus*, families and individuals having the weakest attachment to the land are the first to leave it. Within the countries named, the exogenous factor is to be found usually in the interplay of law and custom. In England the Agricultural Holdings Acts have made landlordism so unattractive that most landowners in position to do so have assumed an operational role; hence between 1871 and 1951 the number of owner operators has increased relatively from 100 to 112. In France the principle of equal devolution among the heirs assured extreme fragmentation of holdings, a steady rise in the number of owner operators, and a corresponding decline in the number of hired workers. In the United States of America an expansive industrial economy drew workers from agriculture at the same time that a technological revolution was shrinking the labour requirements on farms. No reason was given for agricultural workers seeking industrial employment in Yugoslavia after they had received farms under the land reform programme, but it may be supposed that many units were too small to provide satisfactory incomes. Shifts in the occupational composition of the labour force in the Soviet Union are explained by the phrase 'transferred by compulsory recruitment'.

I have less quarrel with Professor Bićanić's generalizations about demography than with the way that he arrived at them. Analysis, country by country, perhaps yields about the same conclusions, but in the spirit of scientific inquiry it is more satisfactory, if not more accurate, to extrapolate both from national quantities and qualities—wherever the trail may lead.

We are told that the data for under-developed countries are lacking but that the tendencies of mobility shown in developed countries are likely to be duplicated. This is an assumption of great proportions that surely needs close scrutiny. Under the impact of large-scale economic planning now going forward in many under-developed countries, some of the interim developments may be omitted, or blurred, and the experience of more advanced countries could prove to be misleading. In the demographic context, for example, the spectacular growth of almost all large cities from Tokyo to Tehran

has occurred at rates faster than the increase in opportunities for non-agricultural employment. Food and housing subsidies and other welfare programmes which were unknown in the corresponding era of development of most advanced countries have contributed substantially to this flow of population from agriculture. Experiments in birth control are opening up a vast new prospect of population adjustment which, in a few decades, may put to rest once and for all the Malthusian doctrine. In countries that have a moderate man-land ratio, land reform might have quite the opposite effect from that observed elsewhere.

I must disagree with the observation that 'the family cycle is not connected with changes in property' in capitalistically developed countries. Indeed, in such countries as the United States which has a fluid tenancy system and a live market for farm real estate, transfers of property rights are made constantly to meet changes in the size and composition of the family labour force. Sometimes this is accomplished by buying or selling additional tracts and sometimes through the medium of part-owner operatorship. These changes are conditioned by other forces, of course, such as mechanization and restriction of acreages under Federal programmes of various types. Disappearance of small farm units is much more a phenomenon of the pull of accelerated industrial output, as during a war period, than of the push of strictly agricultural forces.

I pass over the interesting remarks about the peasant's way of life except to endorse the refutation of the *canard* that peasant farmers are irrationally conservative. It has been demonstrated in many countries that farmers are in fact highly responsive to more promising economic opportunities, whether they appear in the form of more rewarding farm enterprises or of more remunerative occupations. Not even the desire to safeguard the family food supply will deter a farmer from shifting to more profitable crops or livestock. In Pakistan this is illustrated by frequent transfers in land use from rice, most of which is consumed at home, to jute—a purely cash crop—in response to changing price relationships. The same is true for cotton and sugar-cane.

Professor Bićanić refers to the paradox that countries which produce excess grain deliberately retire land from production while there is hunger in other countries. The inhumane implication is one that troubles many thoughtful observers, but it is far simpler to cite this dilemma than to solve it. Agricultural surpluses may be distributed either through established trade channels, private or government, or by somehow avoiding them. The first alternative

may be employed for various reasons but mainly to avoid disrupting whatever distribution machinery exists. Unfortunately, these established trade channels are often identified with unfair marketing practices, with the result that the people in greatest need receive the least benefit from additional supplies. The other choice—that of circumventing the trade—also has many disadvantages including high distribution costs and even the danger of infringing the sovereignty of the recipient country. We should all be obliged to the speaker, I am sure, if he can point the way out of this difficulty instead of merely sharing our discomfort in its presence.

It is Professor Bićanić's closing appraisal of the fantastically disparate problems of agriculture in the United States and in the Soviet Union, respectively, which deserves our most serious attention. Consider the persistent gains in agricultural production in the United States during the last twenty-five years in the face of strenuous government efforts to reduce surpluses. Then dwell for a moment on the Soviet Union where the full power of the government has been exerted, with indifferent success for nearly forty years, in trying to raise agricultural production. One cannot refrain from musing about what would happen if these two countries should trade their agricultural policies.

Professor Bićanić's treatment of the second half of the paradox is considerably more lucid than that of the first half. His sources for the story in the United States are persons and organizations of greatly differing economic persuasions, and in the absence of careful interpretation their combined views tend to add to rather than subtract from the confusion. The central fact is that throughout the modern history of government programming for agriculture in the U.S.A., the basic incentives to the individual farmer to increase his output have remained more or less undisturbed. Backed by enormous technical facilities, American farmers have responded to every type of control with higher yields. The heart of the policy has been to compensate them for their lack of bargaining power in the market-place. For political reasons, indirect methods—that is, acreage reductions instead of restraints on volume of output—have been employed, and have promoted greater and greater applications of capital to less and less cultivated land.

Much of the criticism of the American policy is merited, especially its parochial character in a world containing so many ill-fed people. From a purely domestic standpoint, however, American policy has not received proper credit for its accomplishments. Notwithstanding the charges of the critics, these include a sizeable contribution to

better allocation of manpower, better husbanding of soil and water resources and a more tolerable income distribution. That these achievements have not been marked by a greater awareness of international implications is a cause of distress that we can share with Professor Bićanić. Conferences such as this very one may help to bring home to our American associates the paramount need for lifting the horizons of a policy that is no longer the exclusive concern of one nation.

Institutional rigidities and their deleterious consequences were never better defined than in the brief case history presented of agricultural policies in Soviet-type countries. Three items stand out: first, agricultural production as a whole has shown a comparatively negative response to collective methods; second, the peasant, wherever he functions, effects a fair resemblance to the economic man; and third, the more intensive and interest-consuming the enterprise the less reaction to regimentation.

K. M. DJALILOV, *Research Institute for Agricultural Economics, Uzbek S.S.R.*

In connexion with flexibility I should like to describe the development of agriculture in the central Asian republics, taking Uzbekistan as an example. These republics, forming part of the Soviet Union, have been extremely backward from the economic point of view. They had no industry, and their agriculture was decadent. The farmlands and the water resources were usually in the hands of large landowners. The immensely rich natural resources were unexploited, and many of the farmers had no land. The material and cultural levels of life were extremely low. These were regions of overall illiteracy. Agriculture is impossible in this region without irrigation, but the irrigation and water-supply network did not develop nor, before 1918, was there any reclamation of new lands. In the pre-revolutionary period the area of irrigated lands in central Asia amounted to about 4 million hectares—that is, 2.6 per cent. of the total farmland.

Before the Revolution, cotton was, as it is now, the principal commercial crop in central Asia, yet the yields of raw cotton were extremely low, amounting to 10 or 11 centners per hectare. The yield of fibre amounted to 25 or 28 per cent., the length of the fibre ranged from 20 to 22 mm., and the weight of one cotton boll was about  $3\frac{1}{2}$  or 4 gr.

Cotton growing was based on manual labour, and the agro-technical level was extremely low. Many peasant households even

had no draught animals. The total cost of the basic means of production in a peasant household constituted on an average several scores of roubles, and the annual gross income amounted to 450 roubles. A bondage system of rent and statute labour were widespread. The farmers had often to give up the greater part of their crops as rent. The productivity of labour in cotton-growing was extremely low, the production of one centner of cotton involving from 28 to 30 man-days of working time.

After the October Socialist Revolution tremendous changes occurred, particularly in agriculture. Uzbekistan occupies a territory of 409,400 square kilometres and its population totals 7.3 million people. Out of this number 5.1 million are villagers. By 1 January 1958 the Republic had 1,396 collective farms, 172 State farms, 110 repairing and technical stations, and 35 machine and tractor stations. The total area used for farming purposes, including pastures, constitutes about 45 million hectares, including 3.7 million hectares of arable lands. Of this, 2.5 million hectares are watered.

During the last forty years the sown areas have been extended by the reclamation of new irrigated lands, and large irrigation canals and reservoirs have been built. The total length of the irrigation and draining network in the Republic amounts to 160,000 kilometres, and there are now more than 9,000 hydro-technical engineering constructions. The total capacity of all canals has been brought to 7,000 cubic metres of water per second, against 1.5 thousand cubic metres in 1913. Apart from this, 1.2 million hectares of watered lands have been reclaimed and prepared for exploitation.

At present collective farms are the principal producers of basic agricultural produce. They produce 85 per cent. of the raw cotton, 45 per cent. of the grain, 72 per cent. of the karakul skins, and by far the greater part of other agricultural produce. Both collective and State farms are large mechanized enterprises. In 1956 the average sown area of one collective farm amounted to 1,368 hectares, and the average cash income of one farm exceeded 5,000,000 roubles. State farms are organized on a still larger scale.

The technical reorganization of agriculture on the basis of mechanical energy and electrification was started in the first years of Soviet construction work. At present Uzbekistan has 64,000 agricultural tractors (in terms of 15 h.p. units), about 18,000 cotton-picking machines, 840 excavators, 2,250 combines, and many other farm machines. In the power resources of agriculture which amount to 3,139,000 h.p., 1,637,000 h.p. is provided by tractors, while motor lorries have a total capacity of 1,291,000 h.p. The share of draught

animals expressed in units of mechanical force amount to only 5 per cent.

In 1956 the mechanization of the ploughing and sowing of cotton was completed, and inter-row treatment was 95 per cent. mechanized, while the removal of stalks was 90 per cent. mechanized. Such types of work as the drawing of watering furrows, the combating of pests and the application of mineral fertilizers are now almost completely mechanized. Manual labour can be found only in cotton-picking. Our research organizations and designers' groups are working on new types and kinds of machines and on improving the existing ones. We hope that in the next few years we shall be able to solve completely the problem of complex mechanization in all basic and auxiliary processes used in agriculture.

In the Soviet Union labour is divided among the various republics according to plan, and this finds its expression in the specialization of production. The Uzbek S.S.R. specializes in the production of raw cotton, silk cocoons, karakul skins, dried fruit, and bast crops such as 'kenaf' (gambo hemp) and jute. Our Republic holds the third place in the world for cotton-growing (following the U.S.A. and China); the third place in the world in the production of silk cocoons (following China and Japan); and the fourth place in the world in the production of bast crops (following Pakistan, India, and China). The extension of areas sown to cotton and other farm crops is combined with large-scale measures for improving soil fertility. The results of this work are particularly apparent in the development of cotton-growing. While in 1913 the yield of raw cotton amounted only to 12.2 centners per hectare, in 1950 this figure rose to over 20 centners, and in 1956 to 21.9. About 30 per cent. of the agricultural enterprises in the Republic are now getting from 25 to over 40 centners per hectare. As a result of the extension of areas sown to cotton and the increase in its yield, the total production of raw cotton in Uzbekistan rose from 516,000 tons in 1913 to 2,858,000 tons in 1956, a 5.6 fold increase. Moreover, the yield of fibre from raw cotton has risen by 33 or 34 per cent.

Owing to the consistent introduction of mechanization and the application of the latest scientific discoveries, the standards of agriculture are rising and the most modern methods are being mastered. From 1954 onward, the progressive method of hill-check sowing in combination with narrow inter-row spaces and machine treatment in two directions, has been used on a large scale. This method of tending cotton rapidly reduces the manual labour requirements.



Grassland crop rotation has been introduced to increase soil fertility, and both mineral and organic fertilizers are being effectively used. The introduction of a scientific system of cotton-growing on the basis of progressive methods and the complex mechanization of work has made possible a fivefold increase of the productivity of labour. The expense involved in the output of one centner of raw cotton has fallen from 28 or 30 man-days in 1913 to 6 or 7 man-days in 1957. The application of mineral fertilizers has become more effective and the material and financial expenses involved in cotton production have dropped. The profitability of the crop and the wages of the growers have gone up accordingly.

At present work on a seven-year plan for the development of agriculture is nearing completion in the Republic. According to preliminary estimates, the production of raw cotton will rise to 4 million tons in 1965, and to 6 million in 1970. This will require a further extension of sown areas and an improvement in yield. For cotton, it will be necessary to increase the areas sown to 1,600 thousand hectares, with a yield of 25 centners per hectare.

Uzbekistan also produces about 50 per cent. of all silk cocoons, and more than 40 per cent. of all fruit, grapes, and karakul skins produced in the Soviet Union. These are included in the cotton-growing complex, that is, they develop on the same basis.

Alongside its achievements in plant-growing, Uzbekistan is also successful in livestock breeding, particularly in the raising of karakul sheep. By 1 January 1916 the Republic had 2,800,000 head of goats and sheep. In the last forty years their numbers have increased 2.5 times. The number of cattle is now 1.8 million. This also exceeds the 1916 level. The number of pigs has increased from 2,800 to 209,000 head. Great changes have also taken place in the breeds and yields of animals and in the entire system of stockbreeding. A number of State centres for artificial insemination and animal husbandry has been set up.

The development of fodder production by the introduction of a cotton-alfalfa rotation, and the large number of livestock now in the Republic make it possible to increase the production of meat 2.5 times before 1965 and to treble the output of milk. Production *per caput* will amount to at least 400 kilograms of milk and from 50 to 60 kilograms of meat (in slaughterhouse weight).

The development of versatile agriculture with many specialities makes it possible to use farmlands, water resources, farm machinery and manpower more effectively and to increase cash incomes considerably. In post-war years (in comparison with 1940) the total

cash income of collective farms has risen from 2,200,000,000 to 10,400,000,000 roubles. This has brought about a steep rise in the material and cultural standards of agricultural workers and made it possible to invest considerable funds in industrial, cultural, and public utilities construction. In 1917 there was not a single Uzbek specialist with higher education in the entire Turkestan territory. There were only 160 primary schools with an attendance of 17,800 pupils. In the years of Soviet power, Uzbekistan has become a republic of complete literacy with a highly developed culture.

With the development of national economy and culture, the network of higher and secondary special schools is expanding. We have 35 higher schools which were attended in 1955-6 by 66,000 students. Our hundred technical and other special secondary schools have an attendance of over 58,000. In 1956 over 9,000 young specialists graduated from Uzbekistan's higher schools, against 2,800 in 1940, and in the various branches of Uzbekistan's national economy and culture there were 59,250 specialists with higher education, among them 10,190 engineers, 4,298 agronomists and zootechnicians, and 7,822 doctors, while the number of specialists with a secondary education amounted to 65,250, including 14,300 technicians.

By 1 January 1957 the Republic had 26 theatres, more than 3,500 libraries, 3,264 clubs, houses of culture, houses of folk art, and other cultural and educational institutions. There were 96 research institutions, including the Academy of Sciences and the Agricultural Academy. In higher schools and research institutions 6,421 scientific workers were employed, among them 183 doctors and 2,100 masters of science. Together with the other Republics of the Soviet state, Uzbekistan has developed from the backward and economically under-developed country which it was in the past into a modern, economically powerful Republic with a strong industry, progressive agriculture, and a highly cultured population.

The steep rise of the national economy in general and of agriculture in particular is in the first place determined by the fact that the Revolution put an end to feudalism. Land became the property of the State and was given to the peasants free for tilling and exploitation; now it has been placed for all times at the disposal of collective farms. The water resources have also become State property. The petty households of the farmers have been merged into large collective farms. These successes are also accounted for by the great material help extended to Uzbekistan and the other central Asian republics by the Union Government. For instance, in Uzbekistan alone over 4,000,000,000 roubles has been invested in irrigation in

the last few decades; and as a result important canals and reservoirs have been built.

The Union Government has given great help in the equipment of agriculture with modern farm machinery, in the training of specialists and in the general rise of the Uzbek people's cultural standards.

J. B. BHATTACHARJEE, *Agro-economic Research Centre, Santiniketan, West Bengal, India*

There are one or two respects in which Professor Bićanić's scholarly and comprehensive paper seems to leave room for improvement. It is divided into four parts, of which the last two are the more important in the context of the theme of the Conference. Unfortunately these parts, dealing respectively with the peasant way of life and the institutional influence on the terms of trade of agriculture, appear somewhat disjointed. These aspects of the topic should have been tied together in greater detail and more conclusively. The general impression is of an inconclusive analysis in which the rigidities arising from the functional and structural aspects of the different social institutions have been discussed in the context of three different types of agricultural organization. Of the three types—peasant farming in under-developed countries, the developed capitalist agriculture, and the Soviet collective system—none seems to enjoy the degree of flexibility in organization and functioning that would make for easy adjustments in dynamic situations. But value and direction conscious as most of us are, we would like to know which among the three types is best suited to the prevailing conditions, particularly in this part of the world. Or, is there any other system that Professor Bićanić would advocate? If so, he has remained silent in his paper.

Secondly, I would like to refer to the general manner in which Professor Bićanić has framed the basic issues in terms of the so-called prejudices connected with the way of life of the peasant. Exception can be taken, for example, to the description of the peasant's desire to grow his food or own his implements as prejudices. There is not enough evidence in his paper to justify this. For example, if we look at the behaviour pattern of the peasants, particularly small farmers, we shall find that they have a desire primarily to reduce their vulnerability to external forces. Their aim, most often, is to cushion the impact of these forces, so as to protect themselves physically as well as financially.

This desire to reduce dependence on institutions or agencies outside the farm for inputs and for ensuring a minimum level of physical subsistence seems to Professor Bićanić to be an operative force in all

the three types or stages of development of agricultural organization. Thus he has admitted that the relative over-capitalization of agriculture is a feature of most types, and that this arises mainly from the tendency of the farmers on holdings of various sizes to own their means of production. Since this feature characterizes the Soviet as well as the commercial family farm pattern of American agriculture, it can hardly be called a prejudice in any sociological sense. If it is a prejudice, it seems to be one from which there is no possibility of escape. It is better, therefore, to call it a regular behaviour pattern which has to be accepted and contended with. The question, therefore, arises how best to resolve this conflict. In other words, what is the best way to distribute the means of production, including implements, among the different operational units of production so as to ensure an optimum utilization? Professor Bićanić has given no answer to this question.

I should like to elaborate some aspects of the behaviour pattern of farmers, particularly in the context of unpredictable external forces. The usual explanations of this behaviour run in terms of conservatism, way of life, &c., behind which Professor Bićanić has also taken shelter without further analysis. It is time, however, that we try to understand what these things mean and how they come about. Some of the studies in rural change that are now being conducted in India show that the so-called peasant way of life can best be described in terms of behaviour patterned by tradition. The term tradition can be defined as the sum total of past experiences as distilled into certain norms and codes. In a new situation the farmers inevitably tend to find a parallel with some old experience, and behave in what has been found to be the safest way in the past. The usual norms, such as profit maximization, are thrown out of the window in such situations. In fact, our general finding is that in most cases the objective of the farmers is not so much to maximize profits as to minimize losses simultaneously with ensuring a higher level of security. Security in the mind of the peasant is associated only with situations which are observed in the village and in the immediate surroundings. Any event or any force that is not associated with the village or its immediate neighbourhood generates in him a mistrust or fear of its nature and purposes. Thus any measures or activities that reach the village either from the government or through the operation of the market forces or from the sky are taken by the farmers to be disturbing forces, from which they inevitably try to protect themselves. Their reaction is seldom one of accepting them and making the best of the available opportunities. Sociologists would perhaps go a step further and say

that the resistance of the farmers can be broken down only if dynamic forces reach them through their primary and common interest groups and largely in a familistic setting. In any case, this type of resistant behaviour, caused as it is by the instinct of self protection and preservation, is not unique and can be found among other groups also. To call it a prejudice would be to ignore the social realities an error which many an economist has been guilty.

Only when the fear and the insecurity of the farmers have been reduced through the internalization of external forces, will the farmers think of adjusting themselves to the new set-up. Thus we have found that in areas where new irrigation has been introduced it takes a number of years for the farmers to reap the full benefit. The crop pattern remains unchanged for a number of years; and the input structure does not show significant changes until after the farmers have been convinced that the water would be available regularly without any uncertainty and that production would be more stable than it had been before. It is only after they have convinced themselves about these things that they tend to go in for improvements in agriculture and also for a greater market orientation of their products. The profit motivation seems to come only at the second stage and even then to a limited extent. The position is stabilized at this level and becomes a pattern until another change becomes compulsive.

The farmer is much less of an economic man and far more of a psycho-social entity in respect of his production than we are apt to think. This is true in all stages of agricultural organization, as Professor Bićanić's analysis seems to show, even though he has not admitted it openly. The question is, therefore, what would be the best type of organization to which this psycho-social entity can properly adjust both from the social and from the individual points of view? In the context of India, co-operative farming seems to be the direction which comes immediately to mind. Unfortunately there has been no reference to it in the paper.

P. S. NARASIMHAN, *Asian Field Office of I.L.O., Bangalore, India.*

We have been talking about institutional flexibility in agriculture. Perhaps there is also something to be said for flexibility in our own approach and in the approach of governments to the farmers' problems. Take tenant legislation for example. As an observer of developments in the Philippines, Burma, India, and other places, it seems to me that there is too much emphasis on the legislative approach and not enough following up and complementary action to make it effective. For instance, there is a tendency to be self-

satisfied because we have passed a large volume of tenancy laws, but mere legislation cannot change institutions. In Madras a 'sharing' act has recently been passed with regard to agricultural produce. But how exactly does it work? Is the tenant equipped to benefit from it? We cannot really evade the issue of education and extension. Here I would like to point to a resolution which was adopted by the recent meeting in Delhi of the Asian Regional Conference of the International Labour Organization. After reviewing the legislation of the various countries, the Conference adopted a resolution setting out a number of points, one of which is that tenancy legislation, to be effective, must be supplemented by proper measures for encouraging the formation of organizations landowners, tenants, and share croppers. The creation of voluntary organizations would help in the administration of the law by making it known to most of the people concerned. Secondly, there is a need for establishing machinery at national and local levels for quickly settling disputes arising from the interpretation of such legislation. For instance, every new law which tries to change the pattern of money-lending or of tenancy has often been followed by a great deal of litigation which has been too expensive and complicated for the poor farmer. Again, we have perhaps been obsessed with the possibilities of legislation as a means of changing institutions and have not followed up the implications thoroughly. In this respect I think Professor Bićanić made a very important point, namely that there is a tendency to over-capitalization. One common side effect of tenancy legislation is that when a man becomes a part owner of the land, he tries to have his own bullocks and ploughs. So two contradictory tendencies emerge. On the one hand the landlord who has been providing credit is no longer willing to do so and, on the other, the tenants who have now taken over the land need more credit than before.

Experience in some Asian countries has also revealed the need for a flexible approach on the part of the institutions which are designed to help farmers. For instance, there is a lot of established theory in the fields of co-operative credit and commercial banking. But the conventional approaches in these matters are not wholly suited to Asian conditions and agricultural credit and marketing institutions may have to adopt new techniques.

GYAN CHAND, *Delhi, India*

Professor Bićanić's treatment of the subject is comprehensive but, I am afraid, somewhat inconclusive. I do not know what is the upshot of his arguments, but he seems to suggest that collective farm-

ing or co-operative farming stands discredited and self-condemned, and that peasant farming is on the way out. Well, I have been recently to his own country and to Hungary, Poland, and Czechoslovakia. In all these countries it is admitted that collectivization led to a miscarriage of values, but correctives are being applied. And even in his own country the Government is acting on the premise that co-operative farming is the goal towards which Yugoslavia should proceed. Co-operation is being combined with constructive working of the price mechanism. I get the impression that the technique of combining the two has to be further developed. Yet, what are known as general co-operatives, which cover almost the whole country, are making very good progress through marketing and selling combined with the introduction of mechanization. Responsible agricultural policy makers are of the opinion that the general co-operatives would pave the way for co-operatives in production. The same process is at work in Hungary where compulsory deliveries have been given up, and where there is no programme for developing farming co-operatives according to a time schedule. It is hoped none the less that, through marketing co-operatives, co-operative farming may develop on a completely voluntary basis. In Poland where the number of co-operatives has been reduced to one-tenth of the number in 1956, the development of co-operative farming remains the objective of the Government's agricultural policy. Again, through general agricultural circles which correspond to general co-operatives in Yugoslavia, the ground is being prepared for voluntary growth of co-operative farming. My conclusion is that although mistakes have been made in the past in the Soviet Union and in eastern Europe in promoting farming co-operatives, it is not proved that the price mechanism and co-operative farming cannot go together—the price mechanism not being the type which functions in other countries but a planned working of the price mechanism in the framework of social decisions and social objectives.

I would therefore ask Professor Bićanić to look into the future. It may be possible that to combine the growth of co-operative farming with a flexible working of the price mechanism would ensure agricultural efficiency, provide a decent standard of living to the agriculturist, and at the same time serve the best interests of the community.

R. BIĆANIĆ (*in reply*)

I thank all those who have contributed to the discussion of my paper. I would agree with Mr. Jones, that the concept of over-capitalization in agriculture depends on the definitions of producers'

and consumers' goods. My idea was not that we should not invest in agricultural machinery; I was just giving a warning that mechanization should not be a mere slogan but that we should apply a rational method in selecting the machines.

To Dr. Shafi Niaz I would say that I really could not solve in my paper all the problems which the economists from developed countries are trying to solve. I only indicated what some of these problems were. The idea that the United States of America and the Soviet Union should trade agricultural policies is a very interesting one, and I think something is going on already. I can see an exchange of delegations, and countries saying, 'We have to reach and surpass what the others have done.'

I followed with great interest the remarks of Mr. Djalilov particularly about the success of the economic policy in central Asia. I would add only one point. The greatest success is with commercial crops which represent quite a specific kind of agriculture. I have an impression too that he talks descriptively rather than giving us a picture of the problems with which agriculture in his country has to struggle. The many institutional changes which are taking place are evidence of the existence of such problems.

Dr. Bhattacharjee asked me about the peasant way of life. I have studied this phenomenon for a number of years and my belief is that the peasant way of life should not be considered as a fixed, frozen concept. It changes. It is quite different after electric light has been introduced into the home, or if one member of the family works in a factory. We should not talk about the peasant's way of life in the sense of the romantic writers. Rather, we should study the facts associated with changes in that way of life.

Dr. Gyan Chand gave a valid explanation of the agricultural policy of Yugoslavia. Our difference is only one of terminology. When I said collective, I meant a specific type, not collective in the sense of communal, joint, or co-operative work in agriculture. I am the last to believe that family farming is the final word in the development of peasant agriculture, and I have stressed that there is a policy in Yugoslavia which extends the activity of the family holdings by co-operative effort. Where these co-operative efforts cannot succeed agricultural estates have been formed so that the most modern agricultural techniques can be applied. I would emphasize that I am strongly against an agricultural policy which in principle would oppose family farming to co-operative forms of activity. They should find a common language in their joint effort to increase production and this, I think, is what is going on now in Yugoslavia.