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# THE INTERDEPENDENT DEVELOPMENT OF AGRICULTURE AND OTHER INDUSTRIES

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MY first step must be to apologize for the inadequacies of this paper which is merely an introduction to a difficult problem. On the other hand I am unrepentant regarding the unorthodoxy of my approach, which offers no formulae, models, or solutions.<sup>1</sup>

I shall concern myself with the problem of economic development in the backward countries, and shall omit discussion of the development of agriculture or of other industries in advanced countries. I shall also omit any discussion of countries in which the State is responsible for organizing the total economy. Let me commence by explaining the terms that I shall use.

In the backward<sup>2</sup> countries the term agriculture must embrace a much wider scope than it usually does in the other countries. Personally I prefer the term rural to agricultural but to keep within the title allotted to me, I shall use agriculture. However, I shall take that term to include not only the production and sale of crops and livestock products, &c., but I shall also include fishing (in salt and fresh water), and activities related to the production of jungle products like timber, resin, and canes including riparian economic activities.<sup>3</sup> The significance of this wider connotation is that the straightforward application of agricultural economic theory as it has been developed in most of the English language textbooks and

<sup>1</sup> Cf. G. Myrdal, *Economic Theory and Under-developed Regions*, London, 1957, p. 101. 'In this epoch of the Great Awakening, it would be pathetic if young economists in the under-developed countries got led astray by the predilections of the economic thinking in the advanced countries, which are hampering the scholars there in their efforts to be rational, but would be almost fatal to the intellectual strivings of those in the under-developed countries. I would instead wish them to have the courage to throw away large structures of meaningless, irrelevant and sometimes blatantly inadequate doctrines and theoretical approaches, and to start their thinking afresh from a study of their own needs and problems.'

<sup>2</sup> Backward countries are those without a significant industrial sector and where the rural section is characterized by poverty. See also H. Myint, 'An Interpretation of Economic Backwardness', *Oxford Economic Papers*, new series, vol. 6, No. 2, June 1954, pp. 132-63; Y. Itagaki, 'The Problem of Economic Backwardness and the History of Economic Development', *The Annals of the Hitotsubashi Academy*, iii. 1, Oct. 1957, pp. 20-28.

<sup>3</sup> e.g. attap or thatch manufactured from the leaves of the nipah palm.

journals will not help to solve the basic problems of agricultural development in the backward countries.

I have defined the concept of development in the following terms : 'Agricultural (or rural) development is the planned process which uses any type of action or communication designed to affect the institutions, techniques, environment and minds of the rural people in such a manner as to raise their standard of living and improve their way of life.'

A higher standard of living can be demonstrated by statistical observations of the material conditions of living. Even improvements in the way of life can be assessed objectively once the criteria regarding education, medical facilities, sanitation, nutrition, cultural and recreational facilities have been laid down. In carrying out economic development, at any given time and place the principle of economy must never be overlooked. Robbins has described this as the disposal of scarce means that have alternative uses for the achievement of given objectives.<sup>1</sup> However, this principle which is excellent for a static analysis must be complemented by a second principle so that a dynamic approach towards economic development may be obtained. Myrdal has called this 'The principle of circular causation and the tendency for a social process to become cumulative and often to gather speed at an accelerating rate.'<sup>2</sup> This can be called the principle of cumulative causation.

With the above definitions and principles in mind we may proceed to consider the four main possibilities that confront us :

1. To develop agriculture at the expense or neglect of other industries, believing that other industries can only be developed when agriculture is well developed.
2. To develop other industries at the expense of agriculture, believing that only a highly developed manufacturing sector will create the surplus and the markets for an expanding agriculture.
3. Moving in a series of short-term zigzags developing first one then the other and co-ordinating each stage so as to provide an impetus as well as a source of economic power for the other to develop.
4. Simultaneous development of both agriculture and other industries.

The second and fourth possibilities would appear unrealistic in the context of a backward country that plans economic develop-

<sup>1</sup> L. Robbins, *An Essay on the Nature and Significance of Economic Science*, London, 1932, ch. 1.

<sup>2</sup> *Op. cit.*, p. 13.

ment but does not intend to place the whole economy under state control.

The choice between these will depend on the arrangement of resources within a particular country as well as the type of economic organization that prevails. Thus, a country that has the bulk of its agricultural land and labour resources tied up in the production of rubber and rice is not likely to be able to turn its agricultural production towards the development of a big textile industry or an extensive food-processing industry. It would be better for it to use its rubber to buy imports of capital goods for such industrial development as appeared most desirable for the fulfilment of its economic development plan.

For most of the backward regions the following conditions are likely to prevail:

The agricultural sector will largely consist of one or more export crops that are grown on plantations, and export crops and locally consumed crops produced on native farms. The effect of Western imperialism<sup>1</sup> on farming in what are now the backward regions was to disrupt the balance of village autarchy.<sup>2</sup> Of special importance were the extensive monetization of the economy and the enforcement of changes in land tenure, crop patterns, and labour status to fit the demands of the imperialist power. In brief this brought about the disintegration of the traditional villages as well as an increase in poverty. This increase in poverty may appear paradoxical since the natives in fact often have more material goods than before. However, a closer examination will reveal that not only is village wealth much more unevenly distributed than previously but also there are certain trends in the ownership of land and capital equipment that indicate that a smaller and smaller proportion of people are coming to own larger and larger shares of the land and capital in the village. With the rise in monopolistic tendencies in most parts of the economy there is increasing exploitation of the peasant farmers and plantation workers by landlords, moneylenders, and merchants. Between 60 and 90 per cent. of the total population of the backward countries will be found in the rural areas. Thus progress in agriculture will have a

<sup>1</sup> Western imperialism is preferable, as a term, to colonialism, because it clearly includes economic as well as political influences, whereas the latter may only be associated with a special political status.

<sup>2</sup> Cf. 'In actual fact the record of every imperial power in Africa in modern times is one of impoverishing the subsistence economy, either by taking away peoples' land, or by demanding forced labour in the capitalist sector, or by imposing taxes to drive people to work'. W. A. Lewis, 'Economic Development with unlimited supplies of Labour', in *The Manchester School of Economic and Social Studies*, xxii. 2, 1954, p. 149.

direct impact on the bulk of the population, whereas the development of other industries will be felt only in an indirect way. This is the crux of rural poverty.

Before examining conditions prevailing in the other industries, I should like to point out that these include (a) heavy industry (e.g. steel works, ship yards), (b) light industry (textile manufacturing or radio assembly), (c) rural industry (i.e. located in rural areas but organized as factories), (d) cottage industry (located in farm houses). These are not exclusive categories. The effect of Western imperialism has been to destroy cottage industries, to neglect the development of rural industries, to prevent the growth of heavy industry, and to allow the establishment of some light industries, particularly assembling plants.

In the light of this background we may now consider the consequences of an attempt to create economic development, paying special attention to problems arising out of the interrelationship between agriculture and other industries. In other words, how poverty can be eliminated from the national economy.

In this context poverty has three causes, namely low productivity, exploitation, and neglect. Thus, we must see how agriculture and other industries are to be developed in such a way that poverty is eliminated through the elimination or counteraction of these three causes. Agriculture in the backward countries is characterized by low productivity. This is particularly true for native agriculture. However, even plantation agriculture, with the possibility of cheap and abundant supplies of land and labour, does not generally aim at high productivity per unit of land or labour. In order to raise productivity we must not only teach native farmers how to use better seeds, tools, and fertilizers as well as better farming techniques, but we must also provide them adequately with the necessary working capital to do so. Here is our problem in miniature. Let us suppose that there are limited funds for a development bank and also a limited number of trained personnel. Shall we set up a farm credit organization, an industrial development bank, or a general purpose national development bank? Many governments want to bet on all horses and make sure of getting a winner and so they choose the general purpose national development bank. In effect they try to spread their limited resources on too wide a front and finally fail to achieve a significant impact anywhere.

Industrial development will need foreign technicians as well as foreign loans or grants. The method for ensuring that such loans, &c., do not jeopardize the political future of the country is itself a subject for politicians and not for this paper. The fact is that foreign

aid and foreign loans are being organized successfully in many countries. Naturally, if the plan for agricultural development includes rapid mechanization or extensive use of chemical fertilizers or some other intensive application of an industrial product, then some resources will have to be denied to agriculture and devoted to the industrial development associated with the production of these items. Agricultural and industrial development do not take place in a vacuum. One must never forget the effects as well as the needs of economies of scale. Thus a fertilizer plant will involve development of power sources as well as the need to find markets for certain by-products. How far all these requirements can be integrated is determined by certain technical functions. In its best form this type of development is seen in valley schemes like the Damodar Valley project in India or the Tennessee Valley Authority in the United States of America.

Let us now consider exploitation, which is the second cause of rural poverty. A simple example of what I have in mind is the terms of trade that prevail between agriculture and the other industries. By and large, if free competition prevails the terms of trade tend to be unfavourable for the farmers. The efforts of the U.S. Government to provide 'parity' schemes are a good illustration of an attempt to deal with such a situation. In the backward countries the farmers seem to be exploited every possible way. The terms of trade are unfavourable to them. This applies to imported goods as well as locally produced goods. In addition they have to bear heavy rents and other payments charged by powerful landlords; not to mention insecurity of tenure. They also have to pay to unscrupulous moneylenders exorbitant rates of interest on debts that never seem to get settled. The unfavourable terms of trade are made doubly so by the margins that are charged by monopsonistic and monopolistic traders who buy their produce and often sell them their requirements. In brief, agricultural development means putting an end to the depredations of landlords, moneylenders, and monopolistic merchants. This may not appear to have many direct connexions with industrial development. These exploiting groups are not likely to transfer their capital towards industrial development. However, when they are frustrated in the agricultural sector, they will go in for black marketing and corrupt dealing which may weaken the financial controls necessary in any economic development plan.

In the process of achieving agricultural development the State may decide to organize or plan whole sections of the economy, e.g. fruit marketing or transport of rural produce on a co-operative basis. Or

it may even decide to operate it as a State-managed project. Whatever it is, it is not likely that private enterprise or the capitalistic system is going to be encouraged in that sector where there is an attempt to cure the evils of exploitation of farmers. This may have some psychological impact on the flow of private investment into the development of other industries. Therefore an assurance that non-exploitative private investment in industry will be welcome, may be necessary.

The third cause of rural poverty is neglect. Western trained economists, especially those who are schooled in the highly refined and complex analytical apparatus of social accounting, econometrics, and even Keynesianistic margins, are apt to miss the wood for the trees in the jungles of the backward countries. The fact is that in the backward countries government budgets are largely spent on urban development. Roads, hospitals, and schools are largely for the benefit of the towns. The farm population who make the biggest contribution towards the national output as well as to the taxation (which is largely indirect) are invariably neglected. The only areas outside the towns that are properly serviced with roads, electricity, and health services are the foreign owned plantations and mines. If other industries are to be developed near the urban centres, then this neglect will be perpetuated. Therefore a vital requirement is that the location of industrial sites be integrated with agricultural development plans. In fact this will encounter many difficulties. The road, water, and power facilities will be poor. Rural labour will be less well educated. Urban labour, especially the managerial and supervisory groups, will dislike going to these areas for lack of recreational facilities, &c. Some attention should also be given towards the further disintegration of the village way of life and village economy as a result of 'factory-ization' of village workers.

The training of agricultural economists in universities modelled on those of the advanced countries using texts and methods which may be very appropriate in such countries also helps to exacerbate this process of neglect. The training system should be adapted to the special needs of the backward countries. This means not only better textbooks and improved teaching technique, but also a proper approach towards the relationship between the intellectual and the farmer.

With a view to making the analysis more specific I shall now examine how certain important aspects of each of the factors of production stand in the light of the basic problem, namely, the interdependent development of agriculture and other industries. All



factors will be examined from the point of view of mobility between the two sectors and of organization within each sector.

*Labour.* Various economists have a number of beliefs about labour in the backward countries. Some are myths and some have a rational economic basis.

One of the more popular notions about labour in backward countries is that the elasticity of demand for income is negative.<sup>1</sup> In brief, there is no empirical study demonstrating the 'laziness' of the native and all the writers holding this view merely demonstrate their own predilection to make rationalizations, and their ignorance which Myrdal says 'is seldom random but highly opportunistic'.<sup>2</sup> In fact, all the field studies made indicate that native labour is quite sensitive to and sensible of price changes.<sup>3</sup>

This aspect is important for the outlook and attitudes of planners. If they accept a positive elasticity of demand for income on the part of agricultural labour then the wage system can be a major incentive for labour to move from agriculture to other industries. However, other influences can be equally important. Thus in anticipating any changes in the supply of labour either in agriculture or in the movement of labour between agriculture and other industries the following influences should be taken into account :

- (a) The motive for production, i.e. production for home consumption should be differentiated from production for the market.
- (b) The general availability of consumer goods and specially semi-durables will have considerable influence on attitudes towards money incentives.
- (c) Obstacles of a social or cultural nature can be important. Stigma or taboo may be associated with certain types of work.
- (d) Government policies especially in dealing with unrest or militant uprisings may affect willingness and capacity for work.
- (e) Net real earnings must be considered rather than the cash difference between two occupations. Rural labour may be thinking in units and using a time sequence different from that of the economists who are anticipating a movement of labour from agriculture to other industries.

<sup>1</sup> U. A. Aziz, 'The Development and Utilization of Labour Resources in Southeast Asia', in P. W. Thayer (ed.), *Nationalism and Progress in Free Asia*, John Hopkins, 1956, pp. 193-203.

<sup>2</sup> *Op. cit.*, p. 123.

<sup>3</sup> Cf. I. C. Graves, *Modern Production Among Backward People*, L.S.E. Studies No. 5, 1955, pp. 163-5; S. Rotternberg, 'Income and Leisure in an Underdeveloped Economy', *Journal of Pol. Economy*, lx. 2, April 1952, pp. 95 ff.; G. W. Ladd, 'Farm Income and the supply of Agricultural Products', *Journal of Farm Economics*, xxxix. 4, Nov. 1957, pp. 865 ff. My own unpublished researches among rubber and rice farmers and fishermen in Malaya all indicate a positive elasticity in the demand for income by rural labour.

A second notion about backward agricultural labour is that it is often under-employed. In fact this under-employment may be seasonal or chronic,<sup>1</sup> or non-existent. If it is seasonal then the development of other industries in the rural areas will be particularly effective in raising the general standard of living. Success will depend on the other influences on the mobility of labour, such as skills and communications, &c., being favourable. Seasonal under-employment implies that if a portion of labour is permanently removed then the total output will be reduced, e.g. at the peak period of demand for labour in padi harvesting some of the crop would be lost because of an inadequate supply of labour.

If the under-employment is chronic, the solution will be much more complicated than simply taking off a certain surplus number of chronically under-employed individuals. It is likely that the most chronically under-employed individuals will be the most unsuccessful farmers and the least able persons from the point of view of physique, age, education (or I.Q.), adaptability, &c. On the other hand, the people who are most likely to be ready to move are the more successful members of the local community. They will be the most flexible and the most mobile. Their loss in turn will have serious cumulative repercussions on the village economy.

Thus it will be seen that whereas seasonal under-employment can be adjusted by planning the development of other industries, chronic under-employment requires drastic treatment. It may require the establishment of a new industry that will take whole communities out of agriculture. On the other hand, in some countries like Malaya where land is not so scarce a resource, it may be better to deal with chronic under-employment through agrarian reforms and land settlement schemes.

A third notion about agricultural labour is the prevalence of disguised unemployment.<sup>2</sup> This is qualitatively and quantitatively different from under-employment. Here the emphasis is on the type of work done. Typical examples are the lottery ticket sellers and car watchers to be found in most of the big cities<sup>3</sup> in the backward countries.

In the rural areas there are the petty merchants and 'brokers' or petition writers who haunt the rural coffee shops. Then there are the

<sup>1</sup> Chiang Hsieh, 'Underemployment in Asia', *Int. Lab. Rev.* lxxv, 1952, pp. 703 ff.

<sup>2</sup> Cf. Joan Robinson, *Essays in the Theory of Employment*, London, 1937, pp. 82-101, for this concept in an urban setting.

<sup>3</sup> Cf. A. Navarette, Jr., and I. M. De Navarette, 'Underemployment in Underdeveloped Economies', *International Economic Papers* No. 3, London, 1953, pp. 235-9, for Mexican examples.

men who are always standing by at local loading or unloading points for boats, trucks, &c., to lend a hand and get paid a little something and perhaps manage to pinch a little something else on the side. If they are to be absorbed by the development of other industries then it must be demonstrated that there will be categories of employment that will attract such types.

A particular complication that can be found in any of the backward Asian countries is racial specialization of labour. This is a considerable hindrance to the movement of labour from agriculture to other industries. A small factory making light metal goods may be set up by a Chinese capitalist. He will tend to employ Chinese labour for reasons of language, skill, and perhaps a feeling of community responsibility within his dialect group (e.g. Hokkien, Cantonese, &c.). He will find it inconvenient to employ Malays who are Muslims and therefore, for example, not prepared to share in the free midday meal that he would normally provide.<sup>1</sup>

When most of the capitalistic classes in a country belong to one or two racial groups and the peasants are of another group this produces tensions that have been well described by social scientists who have studied the economic problems of plural societies.<sup>2</sup> The fact that these capitalists are exploiting the peasants of their own race is often overlooked by the political leaders of nationalistic movements based on the indigenous peasantry.<sup>3</sup>

The fundamental prerequisite for the solution of problems in this field is education. In most backward countries what little education there was in the past was based (*a*) on the need to supply clerks and storekeepers for the colonial enterprises and government, and (*b*) on theological teaching that never got much further than the memorization of dogma. A false linguistic élite was created which was not fit to do more than take orders from their masters, who were rarely locally educated. Education in science and technology was invariably left out. Education in agriculture in primary and secondary schools, and at higher levels, was pitifully neglected. Not only was there no teaching in agricultural economics but most governments did not have any qualified agricultural economists on their staffs.

<sup>1</sup> Chinese food is bound to contain pork or to be fried in lard which is forbidden to the Malays who are Muslims.

<sup>2</sup> See J. S. Furnival, *Colonial Policy and Practice*, Cambridge U.P., 1948; R. Emerson, *Malaysia*, New York, 1937; W. A. Lewis, *Theory of Economic Growth*, London, 1955.

<sup>3</sup> A curious perversion of this reasoning is found in Malaya, where nationalist politicians are using their influence to augment non-Malay capitalists with a number of Malays in the name of rural development and 'the improvement of the Malay economy'.

Today a beginning is being made. There is an increasing awareness of the need for better and more useful education, especially in the medium of the indigenous languages. Agricultural economists are gradually making their value known. The fact that the I.C.A.E. is in Asia for the first time is itself symbolic of this new trend. But there is a vast gap to be closed before labour in agriculture can raise its productivity through education, and also before it achieves that necessary degree of mobility and flexibility that will allow it to take full advantage of the development of other industries.

*Land.* The significance of land in this context is not so much the competition between agriculture and other industries for physical space or for natural resources like water, but it is the impact of land as a factor of production on agriculture. There is also significant competition in the economic utilization of land as a means of increasing the farmers' standard of living (I shall call this agrarian reform) and as a means for supplying the raw materials needed for the development of other industries.

If there is an absolute shortage of land in relation to the farm population, given the existing technology (e.g. India or Japan) or if the mechanization of agriculture is likely to create a surplus of farm labour, then it is essential that all suitable types of other industries be developed so as to provide employment for the surplus working population. In some countries, however, particularly Malaya, parts of Indonesia, and the Philippines, there are still large areas of jungle that can be developed into farm land. In this case the supply of capital to agriculture for the creation of new and more efficient farms may be the best strategy for rapid development because this would provide higher farm incomes in the shortest possible period. This new type of farm would take full advantage of the economies of scale through collective processing, collective use of heavy equipment, &c., and thus provide a big impetus for the development of heavy rather than light or cottage industries.

One particular aspect of land economics that is common to all backward areas is the uneconomic organization of the individual pieces of farm land in so far as operation of such pieces of land are concerned. In brief, farms often consist of small fragmented pieces of land that are subdivided because of inheritances, indebtedness, &c. Further, the majority of farmers are tenants of part, at least, of their land.<sup>1</sup> There is a strong tendency for non-farming classes to invest in land rather than in industrial development.

<sup>1</sup> In many backward regions rents are from 25 to 55 per cent. of the gross output.

The net effect of subdivision, fragmentation, extensive tenancy, and a preference for land as a form of investment<sup>1</sup> is to create a process that I have called 'agglomeration', whereby the village farmlands come to be owned by an increasingly smaller number of non-farmer owners<sup>2</sup> and where the pattern of ownership—not the pattern of operation in this case—is a fragmented one. This process of agglomeration is a major cause of rural poverty. It leads to fragmentation in the operation of farms, high turnover of tenants, and exploitation of tenants through high rents, insecurity, &c. Furthermore, agglomerator-owners are not interested in well-planned, consolidated farms or efficiency in farm methods or conservation measures. They are primarily interested in acquiring the maximum number of separate pieces of land irrespective of their location, and they are interested in high rents and tea-money.<sup>3</sup> They create poverty in agriculture and a general decline in the productivity of land. They also help to augment the number of landless peasants.

In such a situation agrarian reforms are the main requirements for the development of agriculture. A by-product of such reforms will be the discouragement of speculation in land and, if the exploitation of tenant farmers becomes unattractive, this will probably encourage some investment of capital and talent in the development of other industries.

Probably the most significant results of agrarian reforms, however, would be those coming from the creation of farms that are either fully organized as co-operatives or at least have their main economic activities organized co-operatively. It would be relatively easier to co-ordinate the supply as well as the demand aspects of such farms with the needs and production of other industries.

The biggest shortage is that of skill in planning and organization. A piecemeal land reform plan associated with the unco-ordinated expansion of State supported rural credit loosely connected with a government department for co-operative development (all of which is vaguely part of a scheme, or 'plan', for economic development which is also supposed to encourage some growth of other industries) is not likely to create any significant results. This is often the real picture in the backward countries. Agrarian reform, rural credit, and the co-operative movement are often as disassociated from one another as they all are from the development of other industries.

<sup>1</sup> Which is a preference for absentee landlordism rather than for farm management.

<sup>2</sup> e.g. shopkeepers, moneylenders, government officials, 'rich' non-farming peasants.

<sup>3</sup> A 'present' that must be given to the landlord by each new tenant and is often equal to half a year's rent. Sometimes a deposit equal to an interest free loan may be demanded.

*Capital.* Often, when people think of development, the first factor of production that occurs to them is capital. This is frequently the scarcest factor and also the factor which transcends national boundaries.

A most important aspect of the problem of allocating capital for development between agriculture and other industries is the source of such capital. Is it to be obtained by 'mobilizing domestic capital' or by trade aid or loans from foreign sources? As there are many excellent texts on the methods of mobilizing domestic capital<sup>1</sup> and no lack of theoretical as well as applied studies of the methods of allocating capital between the various sections of the economy, I shall only deal with certain aspects which seem to me to be given less emphasis than they deserve.

I am prepared to defend the statement, 'in the backward countries capital is the basic tool for exploitation of farmers and other rural workers'. The landlord, moneylender, and merchant increase their wealth not so much by taking, respectively, economic rent, the rate of interest as related to the money market rate, and normal profits. In fact they use their capital to acquire all the farmers' land in the village; to obtain a lien on the farmers' labour (thereby virtually making them serfs) and by forcing the farmers to sell their crops in advance of harvest at low prices while they must buy their necessities at monopsonistically enhanced prices. In brief, capital manipulation causes rural poverty in the backward countries; and because conditions favour such exploitation, there is little incentive for such capitalists to invest in industrialization. Therefore it will be clearly seen that the only scope for agricultural development is through an alteration of the role of capital in the rural economy. This must come through the creation of new institutions such as the co-operative movement and State supported credit agencies and marketing boards.

Agrarian reforms to discourage landlordism and the rationalization of the use of land by farmers are also directly associated not only with an increase in the possibility of mobilizing savings in the rural areas (consequent upon higher incomes) but also with an increase in the flow of capital into industrial investment (consequent upon investors being discouraged from investing in land). No quantitative changes in capital flows can have any significant impact on agricultural development without fundamental institutional changes in the rural economy.

<sup>1</sup> *Mobilization of Domestic Capital*: Reports and Documents of the First and Second Working Parties of Experts. (E.C.A.F.E. refs. 1951: ST/ECAFE/4; 1952: E/CN 11/I & T/63; 1953: E/CN 11/I & T/81.) *Processes and Problems of Industrialization in Underdeveloped Countries*, U.N., 1955 (Ref. E2670. ST/ECA/29).

One other topic that is relevant is the mechanization of agriculture. If land and labour resources are favourably arranged, then a mechanization programme can raise productivity very rapidly and this can create the necessary surplus not only for higher standards of living in agriculture but also for the industrial programme. It may be, however, that mechanization should not be carried out until industrialization has been successfully developed so as to produce the right kinds of equipment. Much of the agricultural machinery produced today is not specifically designed for tropical conditions or tropical crops.<sup>1</sup>

Finally, since it is likely that there will continue to be a large number of small farms in the backward countries, various forms of collective utilization of capital will be an essential pattern if farmers are to have the benefit of efficient equipment. New institutions may have to be created to prevent local capitalists from continuing to exploit the farmers through the use of modern equipment.

*Conclusion.* Structural defects and perversions in the economic organization of most backward countries render it dangerous for economists (of all shades of political philosophy) to apply theories worked out within the historical context of the other countries for the solutions of the problems of the backward countries. The basic problem of the backward countries is poverty and when we speak of development we mean the elimination of poverty. It is only when poverty is eliminated that we can begin to consider raising the standard of living or achieving full employment. Low productivity, exploitation, and neglect are the main causes of poverty. Looked at from another angle the problem can be seen in terms of inherent distortions in the roles of the factors of production.

In considering the interrelationship between agriculture and other industries in the achievement of economic development we must realize that (a) the 'other industries' (except cottage industries) are practically non-existent, while agriculture is the major occupation in the country; (b) the economic development of agriculture cannot be separated from agrarian reform and from revolutionary changes in such institutions as the market, credit, and State aid to the peasantry, i.e. piecemeal changes and 'show-piece' projects are not likely to make any significant impact. In brief, the role of capitalists<sup>2</sup> in agriculture must undergo a complete change, but (c) there is scope for

<sup>1</sup> See Report of a Survey of *Problems in the Mechanisation of Native Agriculture in Tropical African Colonies*, H.M.S.O. London, 1950, and *Considerations and Procedures for the successful introduction of Farm Mechanisation*, F.A.O. Dev. Paper No. 44, Rome, 1954.

<sup>2</sup> Including landlords, moneylenders, merchants, and speculators.

the entrepreneur to function within the planned development of other industries. Such capitalists will function in a different way and on a different basis from capitalists in agriculture. (d) The allocation of resources for development between agriculture and other industries must be determined by technical considerations and by the phasing and priorities of a national development plan. (e) Although planners should bear in mind the principle of economy (i.e. that all resources are scarce and have alternative uses), through time economic activities can have cumulative results owing to the principle of circular causation. (f) Finally, it follows that agricultural development is largely a matter for national action. Negative or passive<sup>1</sup> action internationally may also be helpful. On the other hand, there is considerable scope for international action in the supply of the requisites for the development of other industries through loans, grants, and 'aid facilities'.<sup>2</sup> Of course it is difficult to believe that any advanced country is going to spoil its own markets by helping to develop a competitor in a backward country. However, competition between industrialized countries may offset this effect.

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I do not think Mr. Aziz need call himself unorthodox, for his approach to these problems in many ways resembles that of the early British economists who also were concerned with the development of a mainly agricultural society into an industrial one.

I think he underestimates the influence on this development of the rapid rise of population. This is important for two reasons. In the first place, he ascribes to Western capitalism what surely arises from the impact of Western medicine and Western hygiene. Falling death rates have caused in most countries a rapid rise in population which, without adequate capital for development, results in the increasing pressure on resources which in turn creates the opportunities for greater exploitation of the masses by the fortunate few. Secondly, the rise in population itself determines the priority in development for many countries. If there is not to be less food per head there must be more food in total, which involves investment in agriculture.

We should all agree with Mr. Aziz that the shortage of capital and credit is the key factor to this double process of simultaneous invest-

<sup>1</sup> e.g. elimination of tariff barriers or restraint from subsidizing home production of agricultural products that are produced in the backward countries.

<sup>2</sup> e.g. training schemes.



ment in agriculture and industry. Here again, he is on common ground with the early economists whose wage-fund theory was an expression of the scarcity of capital at that stage of development. Now he suggests that those who already possess some of the scarce factors—moneylenders and traders—should be excluded from the process of further development, for fear that they would continue to exploit those less well placed. They are to be excluded from agricultural trade in favour of State-encouraged co-operation among farmers; yet Mr. Aziz does not think that they will use their resources in industry either. I wonder if a country in this early stage of development can afford to ignore these owners of desperately scarce resources. If the provision of more warehouses, more go-downs, more farm credit and capital is to wait until the State has organized and equipped co-operatives in every village, surely the increase in population will outstrip the food resources. As the process of development gathers momentum, these little local monopolies will die a natural death. Cannot the State, which Mr. Aziz urges into partnership with the peasants, also go into partnership with the traders and moneylenders? Cannot their capital and knowledge and, above all, their enterprise, be harnessed to the common task of creating new wealth?

The recent experience of India has shown, I think, how difficult it is to organize a network of co-operatives in a hurry. But I hope we shall hear the experience of other countries in organizing their capital inflows into this urgent task of extending food production to keep pace with the rising number of human beings.

J. MARULL, *Inter-American Institute of Agricultural Science, Montevideo, Uruguay*

Unfortunately my experience with under-developed countries is limited to Latin America, thus making it somewhat difficult for me to assess the general validity of Dr. Aziz's statements. Certainly, the picture he has painted does not represent to any great extent the situation in the Western hemisphere. It is true that some common ingredients are present, but often in quite different proportions, while other components are lacking altogether.

Recently countries of Latin America have been increasing their *per caput* incomes at a rate that exceeds the long-term figures achieved by Germany, Sweden, Canada, Australia, New Zealand, and the United States. They are doing so in the context of a rapidly expanding population and in spite of little or no co-ordinated and sound development planning. Local governments are just letting these countries grow. There are even those who say that the countries

grow in spite of their governments. Of course, this does not imply that they could not develop even faster if policies based on facts rather than on emotions or on simple reactions to emergencies were adopted. In this connexion the U.N. Economic Commission for Latin America (E.C.L.A.) deserves credit for helping to establish a factual background. Since *per caput* income is only one-eighth of that for the more highly developed countries there is still a long way to go. Some estimates put it at two generations.

Although gross income in agriculture has risen by 80 per cent. over the last fifteen years, it is not expanding fast enough to fulfil adequately its multiple development roles of feeding the population, supplying raw materials to domestic industries, offering a market for other sectors of the economy and, above all, exporting in sufficient quantities to render possible the purchase of manufactured consumer goods as well as capital goods. Looking at it on a *per caput* basis, it becomes not just a matter of keeping up with rates of population increase or with general development; it also implies narrowing the gap between agricultural incomes and incomes obtained in other sectors of the economy.

Some thirty years ago agriculture absorbed nearly two-thirds of the labour force and represented the main source of national income. This is still true in a few of the smaller countries (although in Uruguay the proportion is down to twenty-two per cent. of the population). However, it is no longer valid for the area as a whole. At present, agriculture occupies about one-half of the active population while contributing less than one-fourth of the total income. Income per person employed in agriculture is roughly one-third of that for individuals engaged in non-agricultural activities. Therefore it becomes urgent to increase output per worker in agriculture, provided a favourable international demand for agricultural exports prevails. Without this, surpluses would pile up.

In order to attain such higher output per worker, both a reduction in the agricultural labour force and the achievement of higher crop and animal yields are required. A rapid and economically favourable decline in agricultural population is unlikely. On the one hand, a slowing down in rates of population growth may hardly be expected among predominantly Catholic people with high birth-rates and health programmes which are achieving remarkable success in postponing deaths. On the other hand, although there is considerable industrial development at various spots in Latin America, such as São Paulo and Mexico City, industry as a whole has not yet developed sufficiently to absorb those now being attracted into urban centres,

and city slums are becoming more widespread. Scarcity of several manufactured goods during war time strongly stimulated local industries. Added to that, several countries have pursued protective policies or have diverted foreign currency away from the importation of certain consumer goods. Industrial growth has been hampered by a relatively low rate of investment as well as by the fact that the region's market is subdivided into twenty countries, most of them much too small to support efficient industries. Nevertheless, the idea of a common market is rapidly gaining acceptance.

Let me examine next the possibilities of technological development that would make possible a higher output per worker. A widespread introduction of technical improvements into some eight million farms is a staggering task. Dr. Mosher has already brilliantly analysed many of its phases. On this occasion I would just emphasize that government policies should contemplate a balanced distribution of domestic talent so that sufficient numbers of young men and women would be stimulated to become professional agriculturists. Latin America's forty-five colleges of agriculture are only half full, and have managed to graduate less than 16,000 experts while minimum estimates put the number needed to staff research, extension, teaching, and government services at 43,000.

A transfer of technology would also need larger investment in agriculture as well as industrial supplies such as fertilizers, pesticides, and farm equipment. Capital investment per person occupied in agriculture is only one-twentieth of that for advanced countries, while in industry it is nearly one-tenth. On the other hand, net investment in agriculture proceeds at a rate twelve times less than the overall average for Latin America. Again, sound policies are needed to keep adequate balance. These countries could have and still may have more capital available if they decide to spend less for their armed forces. Most of them are allocating between 30 and 40 per cent. of their national budgets to maintain military apparatus. A notable exception is Costa Rica, where armed forces were abolished several years ago and the corresponding funds subsequently devoted to education with excellent results.

At present, in Latin America all sectors of the economy are growing but none is expanding fast enough to satisfy the current explosion of expectations—least of all, agriculture. Inflation is widespread, and people find it increasingly difficult to wait for an orderly and slow development. They are always more inclined to look for scapegoats, such as imperialism, or to listen sympathetically to the siren song of experimental political short cuts to prosperity.

K. S. RAO, *Ministry of Food and Agriculture, New Delhi, India*

It is a modern fashion among economists in under-developed countries to say that the techniques developed in advanced countries are not applicable to their countries. This may be true to some extent, but it may lead to a kind of stagnation; under-developed countries may have to tackle their problems with under-developed techniques, unless they are quick enough to develop the needed new techniques.

For the development of an under-developed country it is necessary not only to examine the terms of trade between agriculture and industry but also to examine the terms of trade between industry in an under-developed country and industry in a developed country. Unless such a comparative study is made, an under-developed country cannot develop its industries. In spite of cheap labour it is found that industries in under-developed countries are not able in general to compete with industries in developed countries, mainly because of the highly developed organization of industry in the latter. The external economies make economies of scale possible; interdependent economies of scale of various industries lead to their simultaneous development. Unless this is brought about, the development of an under-developed country will be slow and difficult.

If we consider the terms of trade between industry and agriculture, we find that there is a huge pressure of population on agriculture in under-developed countries. Consequently, the rural sector eats most of the food produced, leaving only a small fraction for the urban sector. Any deficit in food is felt more in the urban than in the rural sector. For example, the impact of a 10 per cent. overall deficit in food may be reflected as a considerably magnified deficit in the urban sector. This is because the rural sector bases its production plan on a subsistence scale; it caters food for itself first. The cultivator's basic plan is to secure food for himself and his cattle. The marketable surplus going to the urban sector is consequently very limited and highly variable. Thus, urbanization and industrialization on a sufficient scale to take advantage of interdependent economies of scale are inhibited. Therefore it seems expedient to treat urbanization as an industry by itself. Such induced urbanization must be built around a main focus of locational industrial advantage as in the case of Jamshedpur in India. It brings about a development of industries complementary to the main industry enjoying locational advantage. By a planned procedure, if some complementary industries are encouraged, urbanization is speeded up, leading to better terms of trade between agriculture and industry in the hinterland of the urban

pocket. Examples of induced urbanization are to be found in India itself. About twenty miles from Delhi, the industrial township of Faridabad was built mainly to rehabilitate displaced persons. It is now prosperous and pulsating with economic activity.

By a study of the process of urbanization, it is possible to bring about industrial development and improvement in the terms of trade between industry and agriculture, while planning the agricultural sector in isolation may not develop it very far. Land reform and similar measures, standing alone, may not achieve much; they may even bring bottlenecks into existence which may retard development. Without induced urbanization, the scope for the success of support measures intended to provide external economies to develop industry and agriculture over a widely scattered area of the rural sector is limited—at least in the initial stages of the development of an under-developed economy. Take, for example, the scope for increasing agricultural incomes by the use of very cheap electricity. Bullock power accounts for from twenty to thirty per cent. of the cost of production in Indian agriculture. If it is replaced by free electricity the costs should go down and incomes increase. But the cultivator cannot take advantage of it since the capital necessary for using that electricity is beyond his means.

It is not possible to induce the needed capital formation in the agricultural sector by price policy alone—as, for example, by ensuring increased prices to agricultural products relative to industrial products.

A. M. SACO, *Joint E.C.L.A./F.A.O. Programme, Santiago, Chile*

Unfortunately, I have insufficient time in which to express all my disagreements, not only with Dr. Aziz, but with others who have spoken here about the development of under-developed countries, particularly with reference to industrialization. Industrialization has been in the minds of Latin American people for many years, and it has grown rapidly in countries such as Argentina, Chile, Brazil, Mexico, Colombia, and even Peru, especially since the last war. The trouble is that governments in their anxiety to develop industry have overlooked agriculture, thus causing considerable disequilibrium in the economy of these countries. In Argentina, for instance, the main possibilities of developing industry and other sectors of the economy depend upon the export of agricultural products which now constitute about 95 per cent. of total exports. I have estimated that if Argentina does not develop its agriculture much more quickly than at present, there will be no supplies available for export in eight or

ten years' time. In Chile, in fact, since agriculture has not developed sufficiently, imports of agricultural goods have actually been mounting. This all delays industrial development. Fortunately, the Latin American countries have realized that it is wrong and are placing renewed emphasis on agricultural development. I should also say that the Economic Commission for Latin America is paying considerably more attention now than in the past few years to the problems of agriculture.

The decision whether agriculture or industry should be the first to be developed is no longer a practical issue in our area. Historically agriculture developed before industry and there is no point in debating nowadays whether the horse should be put before the cart or behind it. The problem is how to move the cart without leaving one or two wheels behind. In other words, agriculture and industry should develop hand in hand. The problem is that in the undeveloped countries serious difficulties are being experienced in the exportation of their agricultural products on which depends the import of capital goods. I was very much impressed by Professor Lewis's remark that if international division of labour had its way, India might be exporting steel to North America and importing wheat from that continent in the coming years. The actual picture is somewhat different. It is that North America is exporting steel and manufactured products and at the same time wishes to export wheat. The sooner this situation is corrected the quicker will be the development of the under-developed countries.

ALI ASGHAR KHAN, *Agriculture Department, Lahore, West Pakistan*

Dr. Aziz makes a very bold statement when he claims that to remove poverty in under-developed countries, the operations of landlords, moneylenders, and merchants should be suppressed. I hold no brief for these people, and I am not using this forum to plead their cause in my country or in other under-developed countries. But Dr. Aziz's approach to the subject is too theoretical. He has not defined a landlord, nor has he said how much land a person must possess if he is to be considered a landlord or an exploiter of tenants. He emphasizes the importance of capital in agriculture, but it is these institutions—landlords, merchants, and moneylenders—who play a very important role in under-developed countries as far as finance capital for production and marketing is concerned. Dr. Aziz has rightly made a suggestion that co-operatives can take the place of these institutions. No doubt they have done wonders in other parts of the world and they are still doing wonders. But as far as the history

of the movement goes in some under-developed countries—and I must frankly admit as far as Pakistan is concerned and perhaps also India—co-operation has not given any happy or encouraging results as far as finance for agricultural production and marketing is concerned for more than half a century. To cut away a very important agency, whether landlord or merchant, in an under-developed country under the present conditions when the standard of literacy is very low and the farmers, be they tenants or peasant proprietors, do not understand the spirit of co-operation, is a very dangerous suggestion.

U. AZIZ (*in reply*)

In some senses I think that Miss Whetham and I have different areas in mind when we are talking about poverty and population. Certainly I agree with her analysis that population increase can be an important cause of poverty, especially in places like India where it is a very serious problem. But this is not true of the under-developed areas of south-east Asia, including Indonesia taken as a whole, perhaps the Philippines taken as a whole, and certainly of Malaya. I imagine my colleagues from Burma and Thailand would also agree with this analysis. In these countries the population problem is not so serious because there is an abundance of land resources. The only difficulty is in administration or planning to get these areas opened up.

On the question of managerial skills, I appreciate Miss Whetham's suggestion that we should try to engage the capitalists and landlords as managers of the co-operatives. In fact, in my country today this is precisely what is happening—with disastrous results. The local merchants and landlords are becoming the *élite* and the organizers of co-operatives; and in these co-operatives these people exert a subversive influence (using the term 'subversive' as it is often used in south-east Asia today) because, after they have taken over the co-operatives, they channel the co-operative funds back into their own businesses. They do not have the co-operative spirit. We must remember that co-operation is not merely a kind of business organization; it has an ideological basis; and a person who has been a business man with the entrepreneurial attitude of a capitalist—especially one in the under-developed areas—is not the right person to operate a co-operative. It is like asking an atheist to be a priest. He may be a very good man, but you would not think of choosing him. We have tried to do our best, however, in the University of Malaya when training the sons of capitalists to give them the right outlook, and I must say

that some of them are becoming very good organizers of co-operatives, State marketing boards, and so on.

I think Dr. Marull and I are examples of the very wide gap between south-east Asia and Latin America. It occurred to me while I was listening to him that although both groups of countries are under-developed it is very dangerous to lump them together. Historically, the countries of Latin America had their independence earlier; they are, in the modern sense of the word, much more civilized than the countries of south-east Asia; they have a language unity that the under-developed countries in south-east Asia have not yet achieved; through Spanish and Portuguese they have access to Western knowledge. In all the backward countries of south-east Asia we are trying to develop our national languages and to open them up through the use of translation into the native languages rather than by adopting a Western language. This of course makes it very difficult for us to progress. One other important point is the difference of role of the two areas during World War II, and the consequent migration of highly skilled personnel including, I imagine, some very famous architects to the Latin American countries. The countries of south-east Asia have not had this benefit, and therefore their development must be very different.

In reply to Dr. Asghar Khan I would say that when I talk about landlords I mean absentee landlords, those who live on rents. The ceiling must vary with the local cropland condition. He is worried about the lack of progress of co-operation in India and Pakistan—and to be frank I must add Burma and Ceylon. In all honesty—and I think the people of Britain would agree with me—you cannot expect a colonial government to build up a co-operative movement in a colonial territory which will destroy local business associated with the metropolitan territory. It is asking too much. There will be a co-operative movement—co-operative advisers and so on—but it must result in a rather stunted and limited co-operative movement. What is really significant is what happens after independence. Does the co-operative movement take an upsurge and develop new life, new attitudes, new growth, or does it continue with the same kind of futile pattern and the same kind of plans? This is something which each country must examine for itself. I think the least we can do is to look at countries like Israel and Denmark and see what is possible in a co-operative movement in half a century.