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PROCEEDINGS OF THE
SEVENTH
INTERNATIONAL CONFERENCE
OF
AGRICULTURAL ECONOMISTS

HELD AT
VILLA DELLE AZALEE
STRESA, ITALY
21-27 AUGUST 1949

GEOFFREY CUMBERLEGE
OXFORD UNIVERSITY PRESS
LONDON NEW YORK TORONTO
1950

THE SPREAD OF INDUSTRY INTO RURAL AREAS

OPENING ADDRESS

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ANYONE seriously approaching the question of the possible spread of industry into rural areas of the world is bound to be plagued by numerous difficult questions. Some of these will be questions of fact, some questions of what is politically desirable, and some merely questions as to whether one's prejudices are somehow being violated.

Long consideration of this whole range of material has brought me to the feeling that at any rate industrialization seems bound to happen in the places appropriate for it, that in those places it will be useless to try to oppose it, and that, therefore, it had better be done well. But I should have to admit that there are numerous subsidiary questions which need answers I am not prepared to give; nor, so far as I know, is anyone prepared to give them categorically. For instance, it will occur at once to ask, 'What are the appropriate places?' and even as to this there will be a previous question: 'What kind of industry?' This is to indicate that not every location is equally desirable for heavy or medium industry or, for instance, extractive industry. The only reasonable certainty, I think, concerning these subsidiary questions is that for every area of large population of considerable density it is of advantage to manufacture certain of its consumer goods and to fabricate, so far as possible, the raw materials it produces. Beyond that the questions become really puzzling.

Until contemporary times reasonably informed persons could feel fairly certain what the resources were on which basic industries could be built. That time is rapidly passing. So great has been the progress of basic research into energy and industrial resources that within the next few decades, over which any plan for industrialization must stretch, it seems likely that new sources of both power and materials will be opened. And it does not seem impossible that these may change the whole nature of the industrial process. Such fundamental changes will, of course, affect agriculture too in ways which, at this moment, are unpredictable; so I must be understood, I think,

to be discussing a question which is a strictly temporary one. What kind of industry may be extended to what kind of agricultural community is likely, within the lifetime of plans made in the present, to be quite a different problem than it is at present.

Nevertheless, the general progress of mankind towards better contrivance, towards the relegation of mechanical tasks to power-driven machines, towards specialization and social integration have, I believe, determined that industrialization—of some sort—will affect the production of foods and fibres more and more powerfully. The process will, as an incident to this productive revolution, affect basically the rural ways of life. It will reduce manual work, emphasize management and ingenuity, increase security, raise the levels of life—and, it may be, break up and refashion the rural communities to which our generation has become accustomed. It seems unlikely that opposition can greatly retard or advocacy greatly change this probable result, since the forces causing it are civilizational or cultural ones which lie outside the control of agriculturists. It is, however, possible and desirable, it seems to me, that the processes should be understood, and even forwarded, so that the transition may be hastened and the results shaped to a desirable pattern.

With the understanding, then, that what we are discussing is the desirability of deliberately extending industrialization, as we know it now, to the rural areas of the earth, as they are at present, but with a wary eye on the future, there are some considerations which can be seen to be relevant. For instance, it can be seen that the incidence of such an industrialization movement could fall in either of two ways. It could benefit an employing or money-lending class, the class which has so much initial advantage in any backward economy and, indeed, in almost any rural economy, except those few in the most advanced western countries where State or co-operative credit institutions are so far developed. Or industrialization may be carried out so that the benefits will accrue to those who must be acknowledged to need it most—the disadvantaged rural masses.

It could also conceivably be done (1) so that it gradually reduced the farming population, or (2) so that it supplemented farmers' incomes without reducing the population. It is almost inevitable—and has, I believe, always been historically true—that the former will be the result unless there is more careful planning and more drastic control than there has been in any known instance.

If, then, we accept for the moment the inevitability of the spread of industrialization and the result that the farming population will probably be greatly reduced, we shall seem to have arrived at one

general conclusion at least: there will have to be a very large shifting movement going on for a very long time out of the world's rural areas into its urban areas. This will cause very great dislocation and make the necessary readjustment such as to try the abilities of statesmen everywhere; but it is rather likely than otherwise to be favourable to the strictly rural communities, especially those now clearly suffering from overcrowding.

Something like three-quarters of the world's people live well or badly, as it may be, on the land and practise some kind of agriculture. As is well enough known to this company, there is an enormous difference between the different areas of the world in respect to the percentage of farming people in the whole population. In the United States it would be something like one-fifth; but in India, for instance, the percentage would be very much higher—in many areas, perhaps, nine-tenths. In a European country like France the percentage would be more than one-half. I call attention to these differences because the assumption behind a deliberately entered-on programme of industrialization for the world is that it is desirable to consider bringing the rest of the world into more or less the same percentage relationships of, say, the United States or of Switzerland. An industrialized world, in other words, would mean a world as highly urbanized as the West has already begun to be.

There are, as I have said, real questions, moral, political, and having to do with men's prejudices, whether entering on a programme of industrialization which will have these consequences is desirable. But if we assume for the moment that these questions have been answered in favour of industrialization, and ask how, if it is desired to do so, the programme of industrialization may be advanced, we come upon two rather distinct general problems: first, those relating to already advanced and partially industrialized areas; and, second, those relating to the backward or non-industrialized areas. For the first—the areas which have begun their advance towards industrialization—no 'outside' help is perhaps needed. At a certain stage, industrialization will have begun to produce such surpluses that a governmental organism will have been able to transfer enough surplus from one kind of activity to another so that the kind of objective which has been established may be reached. In the second—the non-industrialized areas—however, the problem will be to find the necessary surpluses to support a beginning and to reach the independent stage at which the self-feeding spiral of advance begins to establish itself.

To take the advanced society first (although already partially

industrialized societies are not in a sense the more demanding for our purposes here) the objective will have been rather sharply defined. That objective is, logically, (1) complete urbanization, that is, to make all social life centre in the urban community; and (2) the industrialization of agriculture itself. I think this follows, although I realize that this is a consequence which may be disputed. Nevertheless, I do not see that agriculture may be immune from the prevailing cultural influences in the community in which it operates. Agriculture can be seen, in the United States for instance, to be ceasing to be exclusively known as 'a way of life' and is becoming another category of production like any other class of commodity. This is not a generalization which is universally true and it probably never will be universally true. There would always be, perhaps, areas where the old rural ways of life could be kept and the old virtues cultivated; but, in the sense of being important contributors to the gross product of agriculture, their old importance would be lost.

To pursue this thought for the moment, the aim of a backward or non-industrialized society, which wishes to establish the standards of quantitative production and to raise its levels of living to those of the industrialized areas, would necessarily be to establish those minimum conditions upon which the autonomous spiral of industrial advance can be supported. The foundation for this self-supporting evolution towards industrialization was found in the United States in vast empty lands and unexplored resources. It might, I suppose, equally well be found in the artificial establishment of those minimum conditions of well-being for farmers and workers out of which such a beginning spiral might spring. That is obviously the rationale of President Truman's announced programme of assistance for backward areas and of the recent report of the Secretary-General of the United Nations outlining a beginning of such assistance.

I should like to make the point that the methods in the two instances must be quite different. The advanced industrial society moves towards integrated organization, towards institutional relationships (such as farmers' and workers' organizations and their recognition by government), and, generally, towards that close integration which is so characteristic of industrialized society. In order to do this it establishes minima, and methods for securing them, so that all members of the community may be active participants in its decisions and activities, and so that established reciprocal relations may be matters of conscious adjustment and may not be ruptured easily by accident or by circumstance. Such established and protected reciprocity is for the purpose of maintaining an active going community.

This is the process, I think, that can be seen to be the objective towards which most western countries are well advanced.

As part of a whole scheme for integration it has sometimes been proposed—and in a few instances attempted—to found industries or branches of industries in otherwise rural areas. There are great difficulties in such an effort and, lacking some special advantage, it has usually not succeeded. The reason for doing it owes its origin to a desire to arrest the decay of a rural community or to supplement its agricultural income. But industries have lives of their own. They need to be efficient, and this requires that they be fixed in an industrial milieu where the labour force is single-minded, the management severely practical, and so on. The rule economists long ago rooted out in the location process is that people move to industries, not industries to people. And a reversal of this rule does in fact encounter difficulties which are far from imaginary. The idea of such a scheme is not to begin the building-up of a visible industrial complex as would be the case in a backward area, for which appropriate allowances would be made over a developmental period, it is rather to set up an island in an otherwise rural area, to emphasize and maintain its ruralness, rather than to transform it. And this is a paradoxical effort which will almost certainly succeed only with permanent subsidy. The subsidy may be judged to be worth while, but it ought to be recognized clearly for what it is.

It is the problem of the backward or non-industrialized areas to reach a level at which the process of integration and industrialization can begin. When I spoke of the establishing of minimum conditions for farmers and workers I had in mind an implication running a good deal beyond a certain amount of international relief work. As a matter of fact, it is quite clear that, although it is necessary to banish famine, and even to establish world-wide immunity to hunger, the spiral of advance cannot be established on such bare minima. It can only begin when there is available a massive infusion of technical services and of capital. The surplus to support such an effort can and, in some instances, has, come from some fortuitous circumstance within or from outside. The fortuitous circumstance might be the possession of a much-needed raw material, saleable to the more advanced areas. Arabia, for instance, possesses oil and that oil is saleable. It can be used to transform Arabia into a very different kind of area. The real doubt whether such a transformation actually will occur illustrates one distinction I have been trying to make here—whether industrial advance is to be used to benefit the *élite* or to transform a whole social organism. Palestine offers a ready illustra-

tion of another sort. She has begun what seems an almost magical transformation, depending almost altogether on imported capital and sheer expertise. She had almost no resources. Russia, of course, when she began her transformation in 1917, had enormous potential resources; but she also had the will to change. And she had little but opposition from without. Nevertheless, she had some aid and she borrowed ideas and expertise very freely. As we can see, aid from without may be of numerous sorts, may be extended for very different reasons, and may be used for very different ends. It depends on the objective; it depends on who is consulted; it depends on the determination to seek the transformations inherent in industrialization.

As a matter of fact, this aid from without is a matter for very serious consideration at present, especially among more advanced peoples. The impulse to aid others, to lift their living levels, to bring them into the circle of highly organized areas, rests fundamentally on the perception that the world is now too small for safe division into haves and have-nots. For the have-nots will be envious and the haves will be—and, what is equally important will *feel*—insecure in their possession of privileges. It can, of course, have other origins not nearly so noble, among them the private investment of capital in the hope of profit which we used to call 'capitalistic imperialism', or even the need to export capital and create a market in order to support the western economies, since they have by no means reached that degree of internal reciprocity necessary to a permanent high-energy functioning, and often prefer to export surpluses rather than to invest them at home or to eliminate them by more equitable distributive measures.

These three are, perhaps, the more usual impulses: (1) to reduce envy and increase security; (2) to find profitable investment; and (3) to dispose of surpluses or to create markets. But there is, in addition, that genuine philanthropic impulse which actuates many people to the extent, even, of influencing governmental policy, and which has played, besides, so large a part in the initiation of certain private attempts to set going the spiral of advance in backward areas. The Rockefeller International Basic Economy Corporation with its operations in Venezuela and Brazil, and the Liberian venture of Messrs. Stettinius and others, are examples of this impulse. In this connexion I suppose I should also mention the desire to advance the interests of associated people such as are to be found in the modern empires or commonwealths. This is modified to a certain extent by a lingering colonialism, but there is no doubt that there has been a change in recent years. I should cite the Colonial Development and

Welfare Fund of the British Commonwealth as an illustration of this last. But there is, finally, also the possibility already mentioned—that the equalization of technical ability and the extension of certain welfare services may be a major activity of the United Nations, and even, perhaps, that its fiscal agencies, the Bank for Reconstruction and Development, for instance, may be the way of extending the capital necessary for the industrialization of backward areas everywhere.

However it is done and whatever the source, there are certain techniques for assisting non-industrialized areas with which there has by now been a good deal of experience; and conclusions from this experience may be examined.

In seeking to establish the foundations for industrial advance, it seems obvious that a very wide base must be built. This means that agriculture must be put on a firm foundation and industries must be begun, even if in a small way, on the most efficient pattern. The aim may be to urbanize, to reduce the agricultural population, to specialize, and to industrialize; but these objectives lie at the end, not at the beginning, of the spiral; and the end must be accepted as one which is a long way off in time and for which there must be careful and patient planning and social management. There must, for these purposes, be capital in amounts relevant to the particular instance. This capital may be indigenous or it may be loaned by an outside agency. But, from wherever it comes, its use must be a carefully directed use. Loans must be for specified projects and must be supervised to see that the capital is used for the purported purposes.

The loans for agriculture and for small industry may well be of the 'rehabilitation' type. For this purpose, the farm-and-home or shop-and-home plans with which we have become familiar in the United States, in our rehabilitation efforts, are perhaps as well conceived and as well worked out as any. Beyond rehabilitation, there will, at an appropriate time, be need for larger-scale capital expenditure. These will be for such adjuncts as research and plant improvement, for irrigation and drainage schemes, for power production and flood-control, for the establishment of co-operatives, for vocational education, and for many other such undertakings. These perhaps can be said to be the necessities of the secondary stage of advance. At any rate, it is only on the basis of such a foundation that the spiral of industrialization can seriously begin. Until then there will not be a market to absorb the commodities which are to be manufactured or a labour force with the necessary minimum of training—the possibility,

in fact, of subsidiary and complementary developments without which an industrial system can never begin its evolution.

The first industries to be attempted may be of two sorts which will have some advantage: (1) the provision of cheap goods to be consumed at home—textiles, footwear, foods, and building materials; or (2) the processing of locally produced raw materials so that the values added to them by manufacture may help to build up the local economy. And here I should like to say quite categorically, and on the basis of some experience with this kind of attempt, that, except for unskilled labour, the first industries must be operated by imported personnel which may only gradually be replaced by local technicians trained in vocational schools associated with the industry. The experience is quite conclusive, I think, that young people of the range of age from fourteen to eighteen must be thus trained. Mature workers cannot, in general, be successfully readapted from primitive agriculture.

Perhaps the most effective means for beginning this industrial programme is to persuade existing organizations, in already industrialized areas, to undertake management and training contracts in areas ambitious to have a similar development. This has, as a matter of fact, been done in textiles, with tobacco and sugar products, leather products, and other similar products. Sometimes it works well. It is possible to say, also, that it is extremely desirable to accompany such imported 'know-how' with a programme of training in vocational and engineering schools, and experience in the factories, of the advanced countries. Selected personnel will usually be accepted and can be returned as teachers or as industrial leaders.

Another method sometimes thought worth while is the use of various persuasives in order to induce industries to extend branches to less advanced areas. For this, tax remittances are available, as are sharings of risk in various ways, such as making loans, building of plants for lease, and so on.

But industries, on their own initiative, especially ones of a certain sort, will often be attracted to backward areas by low wages or other favourable labour conditions. It is perhaps not necessary to say that when this kind of competitive advantage seems to be the attraction, no great contribution to a general programme of industrialization can be expected. Industries attracted by the prospect of establishing sweatshop conditions will not assist in the basic training necessary and will be likely to move away at the faintest suggestion of regulation or control.

It is perhaps important to note also that, in the past, backward

areas have been kept backward, at least partially, by policies adopted in the more advanced areas with which they have had relationships—policies which sometimes have seemed to have little connexion with such a result, but which actually do. It is notable that many of the programmes looking to self-sufficiency among the nations of the West have had this definite retarding effect. An illustration, which comes to mind, is the subsidizing of beet sugar in the temperate zones and the prohibition of sugar refining or processing in the producing regions. And this same thing has been true of tobacco, of vegetable oils, and of other products which might very advantageously have been processed in the growing regions. This policy has been especially harmful throughout the tropical and semi-tropical regions of the world. The nations of the temperate zones have been governed in such matters by home politics as they would not have been if the colonial areas had had some sort of representative in policy making.

There is a further consideration here to which reference will have to be made, for purposes of completeness, although in my opinion it is doubtful whether it has much importance. Handicraft industries are often put forward as useful in backward economies and it may well be that, under certain specific circumstances, they are. But there is undoubtedly a tendency for them to decay immediately when the economy comes into intimate contact with an industrialized society. If there is any way to acquire the purchasing power, consumers will purchase machine-made goods in preference to handicrafts. Handicrafts are thus more useful as exports than as home consumer's goods, and on this basis their utility is extremely doubtful. Handicraft processes are so extremely inefficient that the resulting goods can seldom command prices which yield anything like a defensible wage. When definite contact is made between a backward and an advanced area in this respect and the capital can be found, it is, I have come to believe, better to introduce the most modern factory methods even though the industries to be begun may be small. It is often argued that not so much *work* can be obtained in this way; but surely the objective is not to make work but to produce income. If the income does not flow outside the economy and have its effects in that way, it can be used for welfare or productive purposes with greater net effect than would be yielded by the extremely low wages characteristic of handicrafts or of sweated industries.

The truth is that there is no general escape from the on-going process of industrialization in the modern world except in unusual circumstances and in restricted areas unless the corollary of low

standards and relatively primitive life are accepted. The pre-industrial economies were and are of a kind which will not be tolerated by those who become aware of the possibilities in improved productive techniques. It is too easily seen that only by the use of power and machines, of paper work and planning, of capital and management, can foundations be laid for the improvement of health, housing, and other welfare institutions which people to-day demand. In no other way can the surpluses be built up which can support such advances. That there are serious political, economic, and perhaps, psychological issues involved, there is no doubt. Even if the capital can be found and the technicians can be sent in generous number and the machines necessary to carry out such programmes can be provided in one instance after another, there will be resistance and difficulties. This is a time of delayed nationalism. The more advanced and industrialized nations have been self-governed (at least nominally) for a long time, sometimes for centuries, in any case, for many decades. But many of the non-industrialized areas are only just coming into the possession of their political sovereignty. They have a desire, which all peoples have had at some stage, to exaggerate the importance of a principle for which they have striven for so long and made so many sacrifices. And non-industrialized areas which have long been independent, such as, for instance, the Central and South American Republics, but have remained backward in this respect, for some reason, have developed dictatorships and governing classes of *élite* who have in many instances no real desire to better the conditions of those whom they are now able to exploit if it will in any way lessen their hold on the economy and the Government. So even the most sincere attempts to extend aid from the advanced to the backward areas must contend not only with the sacrifices necessary to dispensing capital and expertise with no return except in a better-adjusted world, but also often with resistance even from those areas to which they would extend help.

It will not be of the slightest use to give or to loan surpluses to backward areas without administering them. They will be wasted from inefficiency or from the corruption which is characteristic of dictatorships. But then, again, supervision is likely to be interpreted as interference with the precious newly gained sovereignty or as a threat to the privileges of a governing class. There are difficulties either way.

The only method for overcoming these difficulties—or at least part of them—seems to me to be the extension of aid and supervision by an international agency which cannot be suspected of imperialistic motives and which can consequently not be resisted by a selfish

élite. There are, of course, exceptions. One would be furnished by the operation of the Colonial Development and Welfare Fund of the British Commonwealth which I have already mentioned. Since the colonies are now part of the same political system as the Commonwealth and there is no question of imperialistic motives, there ought not to be such great difficulties either in extending or receiving assistance. For another example, there has been undoubted value in the extensions to South and Central America of capital and technical aid furnished by various branches of the United States Government. Frequently as that has been wasted or appropriated by a governing class, there still has been some gain in health and welfare. So that unilateral assistance has at least sometimes to be judged to be useful and acceptable. It does not, however, go very far, and is accepted in most instances with some suspicion. These are perhaps the reasons why the Americans took the lead in requesting the report issued recently by the Secretary-General of the United Nations on technical aids to backward areas.

It has seemed clear to me for some time that, whether desirable or not, there is a technological imperative which requires industrialization, in more or less degree, of the whole world because there is no other way of approximating the standards of life so generally demanded at the present time and because, in any case, industrialization is a cultural mode of the whole civilized complex. But that there are better and worse ways of approaching the problem as well as more and less efficient ways, there seems to be no doubt. I am hopeful that studies of these various methods, and experimentation with them, may be one of the major efforts of the United Nations in the coming decades. It might well be the most practically useful one it may hope to carry out under present circumstances.

M. TOFANI, *The University, Florence, Italy*

In the main I agree with the observations made in Professor Tugwell's paper, but when they are applied to Italy certain of his observations require a number of reservations. In particular, there is his point that in regions where there is already industrial development, the industrial development is bound to change radically the economic and social structure of the regions. Some reservations would be needed also on what he said about the employment of labour. In this connexion I would ask you to recall Professor Medici's paper on the first day of the Conference, which, it seems to me, was not too clearly understood by many of the speakers who took part in the discussion. But I will not take up that point because I believe

that industrial development in depressed and over-populated areas in Italy is a problem which is related as much to the development of capitalist agriculture as to the development of peasant agriculture, and although the latter has always predominated in Italy, the former is of considerable importance also.

I would like to spend a little time on two points: one a strictly economic one, and the other perhaps more of a social or moral or psychological character, but which in reality is basically economic. The first point is simple, and it will be sufficient just to indicate it in a few words. What does industrial development in these over-populated and depressed areas imply? In addition to absorbing the exodus of the excess rural population to the city it implies the growth of markets, and the fact I wish to stress is that with the continued intensification and development of these urban centres markets will be created which agriculture, whether it is peasant or capitalist, needs badly and will have to adjust itself to supply. I cannot offer you factual evidence of this, partly because there is not time and partly because, unfortunately, in Italy painstaking and profound studies on this subject are lacking. I shall refrain from giving even specific examples, although in this country of ours there are very many such examples, inasmuch as practically half the communes throughout Italy, at all times right up till to-day, could provide outstanding examples of this point.

The second point I want to make relates to an anxiety which is not referred to in any way in the paper we are discussing, and I believe it is completely ignored by all our colleagues from the New World—from America, and in particular from North America. It is, however, an anxiety to which agricultural economists in European countries and certainly in Italy have given considerable emphasis. Some people, sincerely persuaded of the high moral value of rural life compared with urban life, fear that with the dwindling proportion of the population reared in a rural environment which inevitably accompanies industrial development there will also be a loss in the population as a whole of that fresh energy and high moral quality which is a peculiar characteristic of country people. They fear above all that the political life of the country will become dominated by the urban centres, and not merely by urban centres but by speculators, by people without scruples, who may debase the political actions of the State in their own personal interests.

This anxiety, I feel, should not to-day be given excessive emphasis by our colleagues from the Old Continent. In the first place, one has to admit that unscrupulous men exist everywhere, even in rural

localities. But in addition we are completely convinced that we are going to have to introduce, even in Italian rural districts, new modes of life which are bound to be very like, if not identical with, those of urban centres. The patriarchal structure of the family, which dominated all European agriculture right up to the last century, is a thing of the past, together with the capitalist country gentleman, who regards the land as a family heirloom and who feels himself bound to this land and to his agricultural business by bonds which are more emotional than economic.

My directness of speech is perhaps not pleasing to some, but we must have frankness if we want to achieve sincerity, and if our studies and our activities are to help agriculture, and above all help it to achieve economic conditions which will give to farm life and to rural life generally the same standard of well being as is enjoyed by those in industry and commerce.

L. H. BEAN, *Office of the Secretary, Department of Agriculture, Washington, D.C., U.S.A.*

It has occurred to me that this Conference ought not to go down in history subject to the criticism which Mr. Playfair made of Adam Smith back in 1821, when he wrote a booklet on agricultural prices. In that booklet, discussing prices in the depression of those days, he refers to a tabulation that Adam Smith included in *The Wealth of Nations*, and points out that Adam Smith had come to the wrong conclusion on the basis of those facts. He added that if Adam Smith had merely presented the price record in the form of a chart everything would have been clear at a glance. My intervention on this discussion will make sure that no Playfair arises in the future to say that this Conference terminated its successful sessions without the use of one single chart!

But I have a more serious reason for my intervention, namely, to add some factual support to the belief which some of you have expressed in the need for more and more industrialization practically everywhere. And the facts that I have before me turn out to be a fair sequel to Dr. Tugwell's paper. If he had undertaken to attach to his paper a statistical appendix, the material I have here would have been appropriate.

With your permission I would like to read five paragraphs and present two charts from a chapter on 'International Industrialisation and Per Capita Income'.¹

¹ 'International Industrialisation and Per Capita Income', by L. H. Bean, Part V of *Studies in Income and Wealth*, published by the National Bureau of Economic Research, Inc. 1946.

'The course of industrialisation has been speeded up almost everywhere by the war [please remember this was written in 1943-44] and will certainly engage attention more and more after the war. If we get the kind of peace and international economic co-operation we are fighting for, the future course of industrialization in various countries is quite likely to be molded more consciously than it has been in the past. To that end much more basic data on national income by countries are needed, but even the data at hand, despite their known shortcomings, may be made to reveal certain broad features in the relation of industrialisation to per capita incomes that should be useful guides to economic programmes. In this paper the different effects on per capita incomes that may be expected from expansion in primary, secondary and tertiary industries, are examined. With few exceptions living standards may be expected to rise and world trade to increase as the inhabitants of more and more agricultural countries go into secondary and tertiary occupations; also, with few exceptions such as in our Southern States, the greater the emphasis on trade and services as compared with manufacturing, the greater the rise in per capita incomes. . . .

'In every region, whether highly agriculturised south-eastern Europe, China, India, Africa, Latin America and Southern United States, or the highly industrialised areas of Western Europe, and North Eastern United States, per capita incomes are larger where the proportions of the labour force engaged in agriculture are lower; and, practically everywhere, economic programmes providing for readjustment out of agriculture are called for. China, India, many sections of Latin America, Africa, Eastern Europe, and South-Eastern United States, are obviously over-agriculturalised, i.e. 60% to 85% of their inhabitants are engaged in producing food and other farm products.

'The low per capita incomes of China and India, it may be expected, could be doubled by shifting no more than 15% of their labour force from food production to other pursuits (with more efficient use of human and natural resources). An additional shift of less than 10% would treble them. The low incomes of Roumania and Bulgaria could be doubled, if less than 20% of the labour force were directed into non-agricultural pursuits. Even in the largely industrialised country such as the United States of whose working populations less than a fifth is now engaged in agriculture, there are over-agriculturalised areas.

'About 800 million of the world's present population, 2,200,000,000, are classed as gainfully occupied; of these, probably 500 million are engaged in agriculture. If, in the course of a reasonable period, say the first two decades after the war, through appropriate regional programmes, including those to increase agricultural productivity, it were possible to alter the world's agricultural-industrial balance so that 40% were engaged in farming instead of over 60% as at present, the general gain in productivity and income and living standards would be enormous. If the United Nations took full advantage of the post-war opportunity to raise living

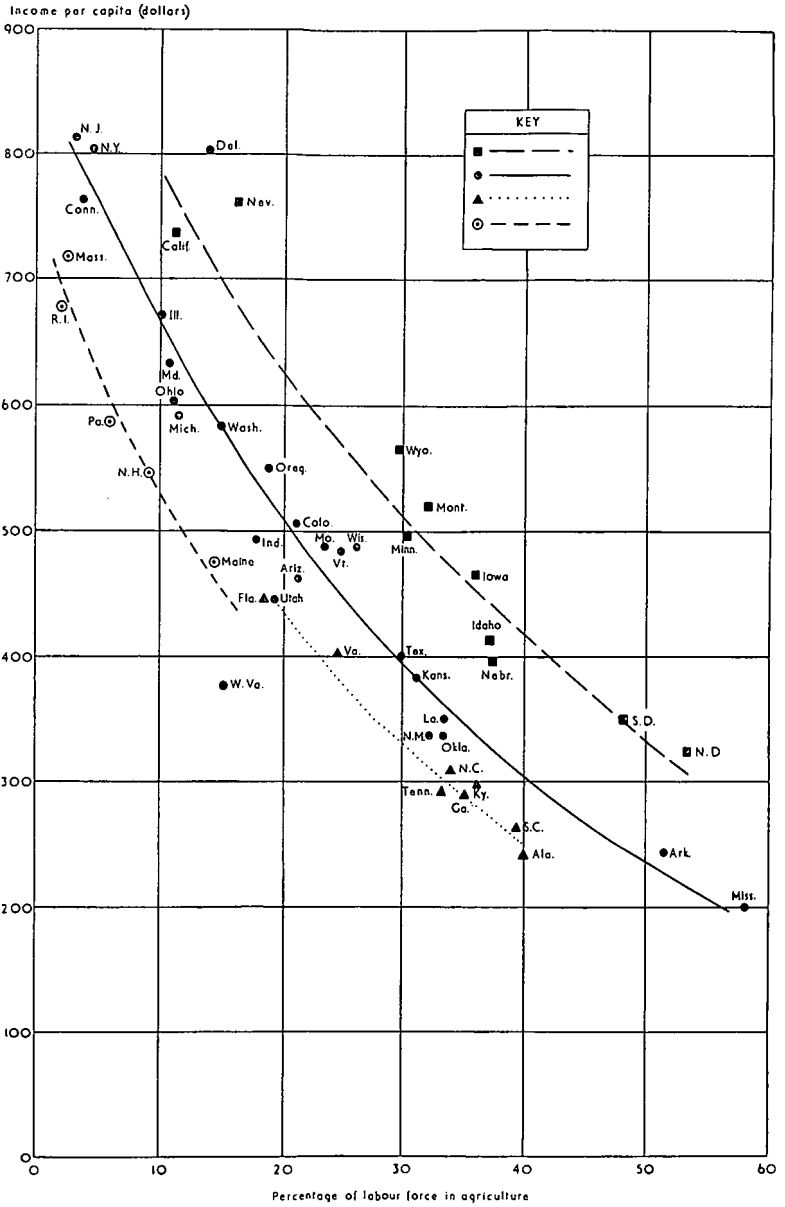


FIG. 1. Percentage of labour force in agriculture and *per capita* income of total population by States, 1939

standards throughout the world, over 150 million persons in the present world population could quit farming, while the remaining 350 millions increased their efficiency.

'To determine the ideal balance between agriculture and industry, both economic and sociological factors must be considered, but as far as economic evidence is concerned, there does not seem to be any definite indication that the reduction in agricultural pursuits can go too far, if countries can draw from the agricultural products of other areas. England and New England are cases in point. England, where 6% are in agricultural pursuits, imports more than half of its food requirements. New England States, such as Massachusetts, Connecticut, and Rhode Island, where fewer than 3% are in agricultural pursuits, get practically all their food supplies from other States. It is possible at some point, too large concentration in non-agricultural secondary industries (such as fuel mining and textiles), tends to reduce per capita incomes, and calls for a further readjustment towards tertiary pursuits. However, evidence from all over the world (except perhaps Australia and New Zealand where productivity in primary industries is greater than in secondary and tertiary), shows that the lower the proportion in agriculture, the higher the income.'

At this point I would like to turn to the figures to make what I have just said perhaps a little more clear. The data that I want to present are of two sorts. One has to do with the proportion of the working population in agriculture. The other has to do with *per capita* income of the entire population of a State or country. I am dealing not with the *per capita* income of farming, but rather the *per capita* income of the entire population in an area—and please bear in mind that it is a rule that farm income and non-farm income tends to rise and fall together, varying in degree. If the *per capita* income of an area rises and falls, you can be pretty sure that both farm income and non-farm income have done likewise. Fig. 1 has to do with this relationship between, shall we call it, the stage of industrialization for several of the States in the United States. You can look upon these States, I think, as 'countries' in North America. We have forty-eight 'countries' in the United States, and I am presenting here the income facts for several of these States. Across the bottom of the chart you have figures from zero to 60. These represent the proportion of the working population in agriculture. On the left-hand side of the chart we have a scale of *per capita* incomes, which vary from \$800 down to \$200. There are four lines which run down through the chart. The upper line represents the course of the relationship between the proportion of the population in agriculture and the *per capita* income of several north-western States. I shall name them: Nevada in the far left-hand corner,

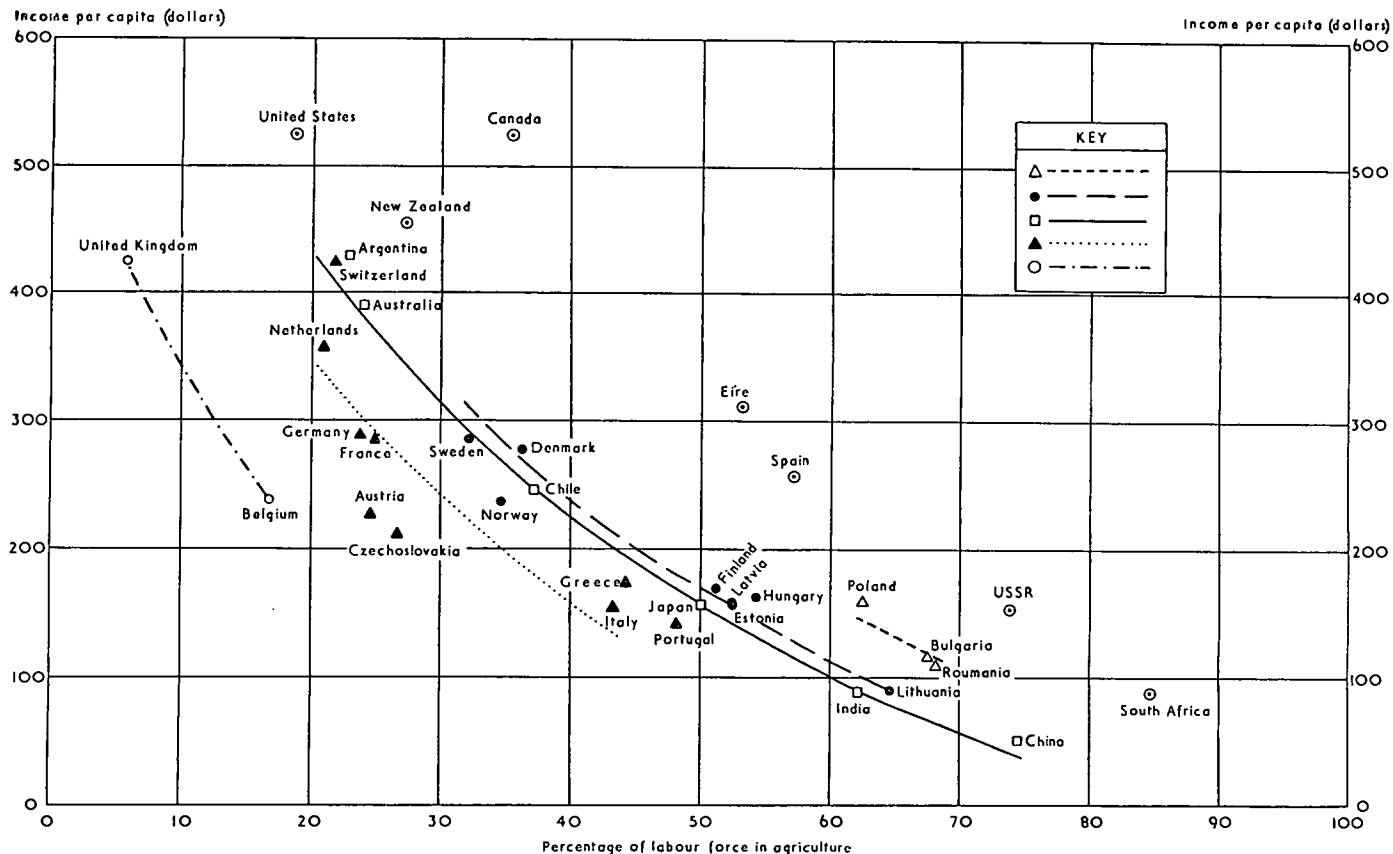


FIG. 2. Percentage of labour force in agriculture and *per capita* income of total population by countries, 1925-34

Wyoming, Montana, South and North Dakota at the lower end of the upper line. Notice that you have there a fairly reasonable-looking statistical law, namely, as the proportion in agriculture increases the income in these areas tends to be lower and lower; or conversely, for higher degrees of industrialization, going from the low level of industrialization in North Dakota to the higher level in Nevada, there is a rise in income.

Please note that the income data are for the year 1939. If you are concerned with current values I would suggest that you consider the scale of dollars, about two and a half times as large to-day as in 1939; but all I want to leave with you is an impression rather than actual absolute fact. Now if you will please take a look at the two lower lines. The States represented by these relationships are Massachusetts at the extreme left-hand side of the chart, Massachusetts with a *per capita* income in 1939 of about \$700, industrialized to the extent of only 3 per cent. in agriculture and 97 per cent. in other industries, and, in the lower right part of the chart, Alabama and South Carolina, 40 per cent. in agriculture and *per capita* incomes of only about \$250.

Between the upper relationship representing certain north-western States and the lower one representing New England and the south lies the relationship for all the other States in the central regions. In each of these four sections of the United States the common rule holds good—the lower the agricultural proportion the higher the *per capita* income.

At this point I should like to indicate how to differentiate between these two levels of income by referring to the difference between the 'stage of industrialization' and the 'pattern of industrialization'. If we consider this broad relationship between the proportion engaged in agriculture and income as standing for the stage of industrialization, then the higher level of income might be considered as representing the effect on income of the different phases or different patterns of industrialization, and by pattern I mean the different types of farming and non-farming industries, say in Montana, as compared with those in Virginia or South Carolina. For the same stage of industrialization in two different regions incomes may and do differ because of differences in productivity, size of farming or business units, amounts of capital and labour, &c.

In Fig. 2 we have essentially the same type of relationship, but instead of dealing with States in the United States we deal with countries. Note at the left two points, one marked U.K. and the other one Belgium. I would like to point to four other countries, slightly to the right—the Netherlands, Germany, France, and Italy.

Note next the points for Sweden, Denmark, Finland, Latvia, Esthonia, and Lithuania. The same kind of law that we found for the United States prevails here also. The greater the proportion in agriculture the lower the *per capita* income of a region. Here also are different levels of income for the same stage of industrialization, and I suspect that the same basic explanation would hold here as for the United States, namely, that in addition to the influence of the stage of industrialization there is the influence of the different patterns of industrialization, the different combinations of primary, secondary, and tertiary industries, and their differences in the use of capital, labour, and management. This figure, dealing with countries, includes comparable data for Latin America (Argentina and Chile) and Pacific countries (Australia, Japan, India, and China). It is striking, at least to me, that whether you compare central European countries or South American or Far Eastern, essentially the same simple relationship stands out. Everywhere the larger proportion in agriculture is associated with lower *per capita* income.

Perhaps that is all I need to do with this basic material on this occasion. I hope that those of you who have the opportunity to discuss the problem of whether there should be more industry in relation to agriculture will examine the basic data in this manner. I hope those of you who have occasion to improve on or develop income information will make an especial effort to secure income data by regions and by provinces; and may I add in conclusion that I hope that the data can be presented or boiled down to some such simple relationships as I have shown here. It is far too over-simplified for the technicians, but for most of us who represent the 2,250,000,000 people in the world, this simple formulation of very complex economic data is particularly helpful. It should serve to stimulate action on the part of governments and administrators at the same time that it calls on technicians to provide better data and more comprehensive economic analyses.

L. LOEWE, *Anglo-Palestine Bank, Tel Aviv, Israel*

In the text and in the charts which Dr. Bean has presented to us account is taken of the variations, as between one country and another, in the proportion of rural population to the total population, but not of the variations which exist within the rural economy itself between one country and another, and between one region and another in any given country. The rural economy is not a homogeneous concept. For instance, when we look, on the one hand, at the rural economy of China and then, on the other hand, at the

rural economy of the United States or Canada, there is a world of difference between them.

It is the amount of labour and the amount of capital per acre which principally determines the level of income per head. This is the background against which to view the vast differences in income per head which exist between one country and another. In China the coolie operates on an extremely small holding, and he has available only a very small amount of capital. In order to live at all, therefore, he has to apply a very great quantity of labour per acre so as to achieve maximum production. It is for that reason that the income per head in the Chinese rural economy is so very low. In the American rural economy, on the other hand, the farmer, especially in those regions where the ratio of rural to industrial population is low, cultivates and sows a very large area; and, in addition, America being a rich country, he has a large quantity of capital available. In these circumstances the agriculturalist is able to achieve a very high income per head.

But that does not imply, as Dr. Bean asserts, that the lower the proportion of the population engaged in agriculture the higher the general level of income per head throughout the population. Rather must one examine the differences in the income per head *within the rural economy itself*, as between one country and another, and then one will find that these differences are at least as great, and probably greater, than the differences which exist between the incomes per head averaged over the entire populations of the various countries.

When Dr. Bean says something to the effect that one cannot go far enough in reducing the proportion of population engaged in agriculture, he is saying something which cannot be denied. This is the typical utterance of someone belonging to a country which controls extraordinarily rich natural resources and whose density of population is extraordinarily light. If a country is going to be able to provide itself with food and, further than that, to have a surplus of food to export, and at the same time it is going to have a small percentage of its population engaged in agricultural pursuits, then it must have available a large area of land per agriculturalist. When these conditions do not exist then the conclusions of Dr. Bean will not follow. Instead of saying that countries which do not have a sufficiency of foodstuff themselves should, via a freedom of international trade, import these from countries with surpluses, one could formulate equally reasonable demands along the lines of apportioning the world's land resources equitably among different countries. Only in conditions of such an equal distribution of land resources can one unreservedly accept Dr. Bean's statement.

Our experience in Israel has shown us that well-organized rural activity can always achieve income per worker equal to that of manufacture or industry. In our collective undertakings, as they are called, we deal not only with agricultural but also with manufacturing and industrial activities, and a comparison which has been made as a result of a thorough inquiry taking several years shows that the overall average income per head in the agricultural undertakings is fully equal to that achieved in the manufacturing and industrial undertakings. The distinction between agricultural activity and industrial activity in our country consists in the level of investment per worker. The rate of investment per worker in a fully developed agricultural undertaking is double the rate in a normal manufacturing or industrial undertaking. The role of industry, therefore, is on the one hand to permit an increased density of population, and on the other hand to permit a lower rate of capital investment per head. But industry, according to our experience, is not in a position to increase the income per worker.

MAX ROLFES, *Institut für Betriebslehre und Agrarpolitik der Ludwigs-Universität, Giessen, Germany.*

Within the last fifty years or so we have had in Germany, and I think in a number of neighbouring European countries, a very steady spread of industry into agricultural areas—in our country mostly into areas that can be characterized as areas of peasant farming. Most of these areas are certainly submarginal as to the size of the farm, and very often also as to the quality of soil and climate. Under this aspect it has become traditional to regard the spread of industries into such backward rural areas as a very effective means of finding gainful employment for the surplus of labour available, as a means of combating over-population (a fourth alternative to the three methods already suggested here a few days ago by Mr. Date, p. 57).

This development has been characterized, at least in our country and also in Switzerland and parts of France, by a very curious sociological phenomenon: the working population has not split into two groups, into the class of industrial worker on the one hand and the peasant farmer on the other. On the contrary, it is almost the standard development that practically the whole farming community resorts to part-time farming. At least, it is part-time farming if we regard not the individual but the family as a unit; usually one or two members of the family remain on the farm whilst others seek wage-earning work in the industries.

In the traditional school of thought in our country this development of part-time farming with the combination of industrial income and independent peasant farming as the basis of the subsistence of a family has been regarded as a very sound and favourable development. Although this appraisal may certainly in very many cases be sound, I think it needs some qualification.

The development certainly seems to have been satisfactory from the point of view of the industries, for by general consent it is agreed that the peasant has turned out to be a highly efficient industrial worker. This can be proved by the quality of the goods he produces, which include Swiss watches and Leica cameras. But I think that the answer to the question whether this is a desirable social and economic pattern cannot be generalized either in an affirmative or in a negative sense, if we look at it from the farmer's aspect.

One main problem is concerned with the labour capacity of the family. There is often a very real danger that industrial labour in addition to the work of operating the farm may lead to a tremendous overburden of labour in the peasant family, and consequently to very distressful social conditions.

A further important factor is the level of industrial wages. It is by no means a foregone conclusion that these wages will be high. Indeed, at the beginning of the development it was quite obvious that many industries infiltrated into backward rural areas specifically in search of cheap labour; of course there were and are other incentives, such as hydro-electric power, raw materials, &c.

A further problem is the security of industrial wage-earning. The type of industrial work, seasonal or full-year employment, work for women or for men, or work for both, are factors which decisively affect the type of farming that the family can pursue or should pursue in conjunction with industrial labour. Very specific adjustments of the scope and size of the farming unit are absolutely inevitable preconditions if the system is to be satisfactory. However, it must be conceded that at least in our country adjustment is very slow and not sufficiently thorough. This is a major problem of particular urgency, as this system prevails to such an extent that in areas often as large as two or three British counties almost all agricultural land is operated by part-time farmers of this type. A particular hindrance to fully satisfactory adjustment lies in the fact that these men cling to every inch of their land with an extraordinary tenacity.

But the whole problem must now be seen in western Germany under a far broader aspect. Owing to the inflow of refugees from the

east, the average western German village to-day has a population 30, 40, sometimes 50 per cent. over pre-war. It would be a truly disastrous policy to try to absorb this great surplus of rural labour in agriculture in a country where the labour productivity of farming in the traditional forms is already far too low. Industrialization of rural areas seems to be the only solution. But it is quite a different question whether, in carrying out this industrialization, we should systematically plan to establish on a large scale the part-time farming family as the main source of industrial labour with a population not hitherto familiar with this pattern of life. I think any such decision should only be made after a most careful and unbiased study of all the factors I have already mentioned, and only if there is absolute certainty that the people affected really wish to live in such a pattern of social and economic life.

SIR MANILAL NANAVATI, *Indian Society of Agricultural Economists, Bombay, India*

I have no desire to follow Professor Tugwell in analysing the whole problem of the development of industries in rural areas, nor am I going to follow Dr. Bean in calculating the proportional income from agriculture as compared with industry. I am here to give you a small illustration of what would happen if all the suggestions made by Mr. Tugwell were carried out. In India we had a very difficult situation to deal with. In about 1875 we had 56 per cent. of the population supported by agriculture, 13 per cent. by industry; and they were very small-scale industries in those days. The population in agriculture was increasing tremendously, and in recent years the proportion has changed to 72 per cent. in agriculture and 9-10 per cent. in industries. The number supported by agriculture has been steadily increasing, due to the natural growth within the industry and also to the decay of the rural industries in the country. Therefore the need for starting new industries to withdraw the surplus population from agriculture had to be very seriously considered. If we could transfer 15 to 20 per cent. of the population from agriculture to industry I think we should have done one of the greatest wonders of the world. But it has appeared to us to be a very difficult proposition.

I come from one of the old Indian States, where I have worked for nearly thirty-five years, and I have considerable experience in starting new industries to divert the population from agriculture into industry. Here we had to contend with difficulties of all kinds. In the last quarter of the last century, we had, on one side, to contend with

famines and epidemics and, on another side, special measures had to be adopted to remove the pressure of population from the land and to improve agriculture.

To begin with, we had a general survey of all the resources of the State—geological, forest, agricultural, &c. Then we began pioneering industries, since the people were not enterprising enough to start industries on their own initiative. In 1895 the State started a sugar-factory and a cotton-mill; a few other small factories were also started by industrialists with the help and encouragement offered by the State. But the latter ventures failed, as the people had not the requisite training and experience of running industries. Nor did the State factories fare much better; the sugar-factory failed, and the cotton-mill just managed to keep itself going. By 1908 the Swadeshi movement, advocating consumption of indigenous goods and the starting of new industries, had begun. The State therefore made a fresh effort in this direction, sponsored a couple of new cotton-mills, and gave them several facilities and concessions in the shape of tax exemptions and octroi duties and special water-rates. A bank was also started to finance industry and trade.

In 1913 we carried out fresh surveys of our industrial resources, and tried to assess the economic value of each raw material. For instance, we had china-clay. We tried to estimate its value purely as clay and also as raw material for the making of china-ware. The Government also defined its industrial policy, so that enterprising individuals might know what type of State assistance and concessions as well as financial help they would get if they undertook to start industries. Regulations, with the necessary details of this policy, along with a summary of the industrial value of the natural resources, were published for the benefit of the public. The State had to offer several concessions and facilities because the local people were not competent or enterprising enough to take up large-scale industries, and we had to attract capital and enterprise from outside the State by giving all possible help and encouragement. Only thus could we remove the prejudice of the capitalists outside against establishing industries in an Indian State. An important question which arose at this time was whether we should allow the industries to be concentrated in one area or disperse them as far as possible. For we were anxious to avoid the sad experience of Bombay and Ahmadabad—two industrial centres in the neighbourhood of Baroda—where the concentration of textile mills had been accompanied by a rapid growth of slums. Some of our people who went to these centres to get employment returned broken down in health,

and we had to avoid similar consequences in our midst. We therefore decided to avoid these evils of unregulated growth of industries. So what we did was this. For every town we had a separate area, demarcated as an industrial area, where only industries could be established. We also directed the people to select such towns as would suit their convenience. In 1936 we took a census and found that practically every raw material that we had was put to use. Hardly any remained which was not utilized. We had eighteen cotton-mills, a woollen-mill, a cement-factory, chemical, pharmaceutical, and dye works, and several other smaller factories. But the number of people that could be taken away from agriculture was not very great. We started at, I think, 18,000 workers, and now we have about 130,000 to 150,000 directly supported by industries. We found this a slow process; but at the same time we took up another measure, namely, expanding education and increasing the working capacity of the people. We started a number of industrial schools and we made primary education compulsory in the State. The result is, numbers of Baroda people have migrated to other parts of India and practically every part of the world. You will find them everywhere, working either in professions, industries, or trades. Most of the people who migrate came originally from agriculture. This has happened in forty or fifty years. The progress of industry may be considered slow, but there is no doubt that in course of time it will get momentum as capital accumulates and the people get some more experience. It must take more time and more concentrated efforts before the number of people supported by agriculture is reduced both in strength and proportion.

There is another aspect of industrial development, particularly in rural areas, of industries dependent primarily on agriculture. We have a very interesting example of such development in one of the sugar-factories in the Deccan area. It was originally a famine area; every second or third year people used to suffer from drought. By canal irrigation that area has been reclaimed, and now it is one of the finest examples that I have seen of industrialization in a rural area. On a sugar-farm of 17,000 acres a sugar-factory, which also produces alcohol, has been started, side by side with a number of other industries. Then there is a mill which crushes groundnuts and thus supplies oil as well as groundnut cake. There is a soap factory, and also a paper-mill. The farm maintains a dairy herd of 600 milk-cattle. The farm employs 7,000 to 8,000 men, and a modern town with all the amenities of civilized life has sprung

up. These are the two illustrations that I wanted to bring to your notice.

M. R. BENEDICT

We had this morning a very thought-provoking paper from Dr. Tugwell in which he brought out some of the many things that must be considered in an industrialization programme. Because of the comment I made last Monday, I want to make my position clear. I share the view, frequently expressed, that a good many of the predominantly agricultural countries should increase their production of industrial products, and shift away from such exclusive reliance on agriculture. There is, however, an unstated assumption which seems to me to be implied in several of the papers we have heard here. Stated very crudely it is this. If some is good, more is better. This runs counter to the law of diminishing returns, one of the most fundamental concepts in both the physical sciences and economics.

The central theme of economic analysis as applied to production is the discovery of best uses for resources. Resources differ very much, both in kind and amount, in different parts of the world. Related to this is the fact that in situations where you have different proportions of the factors, you use more, proportionately, of those factors which are present in abundance. In keeping with that principle, we in the United States, for example, have used land in ways that in many parts of the world would be considered wasteful. We have had large amounts of land in relation to our population. We need to take each situation and analyse it separately. Some of the papers and discussions seem to me to attempt broader generalizations than are warranted in view of the complex and varied world in which we find ourselves. I raised that question in regard to Professor Medici's paper on Monday. For certain conditions the peasant-farm pattern is desirable and should be encouraged. There are other situations in which it probably would not work, or at least would work only badly.

I have the same reservation in regard to Professor Ashby's excellent paper. It seems to me we should not accept uncritically the notion that everything should and will eventually be carried on co-operatively. We shall be more constructively helpful if we provide guidance in determining what things lend themselves best to co-operative handling, and which are too difficult to operate in that way, or do not offer sufficient prospect of gain to be worth the effort of managing them co-operatively.

In the United States we have had much experience with co-operatives. We have found, as I think others have, that some things lend themselves well to co-operation; others do not. For example, co-operative efforts have been very successful where a specialized crop is produced far from its markets and requires special, large-scale mechanisms for handling and sales promotion. Under these conditions co-operation becomes almost essential if the industry is to be organized efficiently. Examples are the California citrus industry, the Danish pig industry, and the New Zealand butter industry. On the other hand, we have had a number of very ambitious attempts to carry co-operation into the central markets for grain. Most of them have been failures. Here the creation of co-operative mechanisms is much more difficult, and the gains are much less evident.

I think we have the same kind of problem in this matter of industrialization. Industrialization is not some one homogeneous and fungible thing. Our job, in so far as we have to do with it, is to throw light on what kinds of industrialization can be carried out in any particular situation, and which lend themselves best to external stimuli from official or other agencies.

While I found myself quite in accord with Mr. Tugwell's comments, I am less able to subscribe to some of the conclusions implied by Mr. Bean. For example, I do not think Mr. Bean, with his broad knowledge of the United States, would seriously propose introducing industrialization extensively into North Dakota. I have seen that tried, and it did not work very well. North Dakota has a particular set of resources. In the main the best use of those resources is in farming. Nor do I think he would, in the present circumstances, urge increased industrialization in Britain, though if we extrapolate the curves he has presented they would seem to indicate that if reducing Britain's agricultural population to 10 or 12 per cent. has increased average earnings, then to bring it down to 5 per cent. would increase them still farther. In every such situation there must be some optimum beyond which it is not profitable to go.

Several of the factors involved are historical. That is one reason for the high level of industrialization in what we in America call the New England States.¹ Some of the industries now in that area are there because they got started there, and no fundamental economic force has arisen which would compel them to move. The reasons

¹ These are the six States in the extreme north-eastern part of the United States. They were among the first to be settled, and industrial activity gained its first foothold in this area.

why the watch industry came to be centred around Waltham, Massachusetts, are, I think, mainly historical. Some other industries, notably textile manufacture, though once well established in New England, have more and more been forced to the southern States as a result of changing economic conditions. New England got its industrial start and its first accumulations of capital as a result of the shipping industry, and, somewhat as England did, because it was in the game early.

The main point I would make, then, is that we need to be sceptical of extremely broad generalizations on matters of this kind. I quite agree, however, that there may be good and sufficient reasons for modifying what, from an economic standpoint, would be an optimum distribution of economic activities. Even in agriculture we may, for reasons that are not strictly economic, find it advisable to encourage a particular type of agricultural pattern, such as a peasant economy or some other. I think, however, that we need first to make adequate economic analyses, and to know something of the costs of the deviations from the economic pattern that would prevail if there were no intervention. In other words, what do we sacrifice, in economic terms, if we choose to adopt a given policy for social, political, or other reasons?

One other point which is implied in Mr. Tugwell's discussion, though I believe not specifically mentioned, is that in the attempt to industrialize rapidly under forced-draught we are in some danger of fragmenting the world in ways that are not in its best interest. The maintenance of excessive protection to new industries, the input of non-venture capital, and the maintenance of special subsidies beyond those needed in the best interest of the nation concerned are cases in point. Nevertheless, we do need more industrialization in many of the areas. We should encourage it only where the prospects of success are good. It is going to be difficult enough there. I think, too, that we should recognize that in some of these areas the problem is not merely one of relationship between agriculture and industry, but rather one of basic over-population in respect to all resources. Where that situation exists we are not going to get a very high level of living whether we industrialize or whether we do not.

J. F. DUNCAN, *Tillycorthie Farmhouse, Udney Station, Aberdeen, Scotland*

I have the feeling that if we had started with this paper at the beginning of our Conference we should have had a very different background from which to discuss the other problems of peasant farming and of co-operation. There are one or two aspects that have

not been covered in the discussion which has taken place during this week. These discussions have ranged round the relation of the agricultural community to the rest of the community. And in all our discussions, no matter what the proportion of the agricultural community may be, we have to keep in view that it is only part of the general community, with its responsibilities to the general community as well as for itself. Now whether or not we accept Mr. Bean's analysis—and I am not prepared to challenge it—does it not just bring out what we had in our earlier discussion, and what is an old-established generalization, namely, that the standard of living in any community varies in inverse ratio to the density of the agricultural population? I do not see that there is any gainsaying that generalization. If, then, we decide we are to secure a reasonable standard of living for the agricultural community as well as for the general community, we are faced with the problem: How can we reduce the agricultural population and at the same time raise the standard of living?

We are living in a time when new sources of energy are being released, sources of energy which are capable of transference, and therefore capable of being applied to industrial purposes, without requiring industry to be located in any particular area as it had to be when we were dependent upon the force of steam and even, to some extent, upon the internal-combustion engine.

Whether we like it or not, we have to adjust our agricultural pattern to the general economic climate of our age. There is a generalization made by Karl Marx that the prevailing mode of production is the most dynamic force in altering not merely the economic but the social and political conditions of any country, and one does not require to accept the modern gospel of the Communist Party to see that there is a very considerable truth in that generalization. Can we isolate the agricultural community from the general economic climate, from the dynamic forces which are at work in the whole of the world, and expect to keep the pattern of the agricultural community much as it was before? Look at those countries which have been developing their industry—Scandinavia, Great Britain, Denmark, Holland, Belgium—and you will find there has been a growing problem of maintaining their agricultural population, so great that most of these countries now have by legislation, or by collective agreements backed by legislation, practically eliminated the gap between the wages of the agricultural worker and the industrial worker. But the difficulty is this: As you increase your industry alongside agriculture, the standard of living of the indus-

trial community begins to have an impact on your agricultural community. An agricultural community may be relatively stable as long as it is not in contact with the contagion of industry, but, as soon as the industrial sector begins to increase, the rural community begins to desire to share to the full in the industrial benefits, and makes increasing demands.

That is what the advocates of the family farm and the defenders of the peasantry are asking for: that the peasants should be equipped with machinery to enable them to maintain their isolation from the economic developments that are going on. Why should we supply the peasant with the mechanical means of improving his standard of living when these mechanical means only became possible by taking the craftsman from his craft, putting him into a large-scale factory, and making him an attendant on the conveyor-belt? There is just as much argument for retaining the independent craftsman as there is for having the independent cultivator. The peasant and the land-cultivator are not entitled to ask that all the benefits of large-scale industrialization, which are only possible through the concentration of the wage-earners as a proletariat, should be at the disposal of the agricultural community, but that they should have no concern for the industrial community. The agricultural community cannot remain in isolation.

One of the essential features of the development of large-scale industry and the development of our urban civilizations is that the State must interfere in the economic processes to defend the standards of living of its people and to ensure their welfare; and when the Welfare State begins to operate alongside the growing industrial State, then you reach a stage where you can no longer leave things to the free play, or what used to be called the free play, of economic forces. We have to control and manage those forces. I suggest, therefore, that we must consider the whole future of the relations of agriculture and of industry on a managed basis and see whether we can make a better job of it. If we are going to leave the development of industrialization in these communities (which we have called backward communities) to the enterprise of capital seeking profits, then we may get the same kind of development that we have had, unfortunately, in the main industrial areas. Most of us, looking at the industrial revolution in retrospect, would say that we should not want to intensify the big over-grown cities; we want, rather, to see whether we can disperse those we have. That can be done only as a managed policy, and, as Professor Tugwell reminded us, the management has to be able to extend beyond the national borders. There must be

management of a much wider sphere if we are to give the assistance that is necessary for lifting up the backward communities. If that assistance is not exploitation, and if in the development of industrialization we maintain those standards which modern civilization and the dispossessed working-class will insist on getting, then we shall see that it is not merely a problem of maintaining the pattern of the civilization that we have had in the past. We must recognize the broad general tendencies of economic development and the results of the technological advances to be able, within these broad general tendencies, by management, by forethought, to see how far we can shape development to give us the desirable quality of life, as well as the quantitative standard, which is now procurable by reason of those very greatly enlarged industrial potentialities.

M. ZAWADZKI, *Agricultural Economics Research Institute, Oxford, England*

I speak here with some diffidence, since I am a very young economist. My studies were interrupted by the war, but at the same time it gave me the opportunity of seeing many countries. I spent nearly three years in Russia, then a few months with agriculture in Palestine, and finally I have been in Great Britain for nearly six years. A Polish proverb says that travelling educates, and I think the Poles who were dispersed over the world by this War, and many of whom have lived in Great Britain, have profited by the experience. Our only regret is that we have not had the opportunity to make use of the experience in our own country.

On the subject of to-day's discussion I should like to tell you in a few words about the plans for the economic development of Poland which were being worked out by my countrymen in Great Britain during the War. I shall not go into details because, unfortunately, circumstances have rendered those plans of academic and historical interest only. But I believe the problems which confronted us are very much the same as those which other peasant farming countries must face when they prepare plans for rapid industrialization and general economic development.

If we look on the interesting chart presented by Mr. Bean, Poland was just a little above Lithuania: 62 per cent. of population derived their earnings from agriculture, and the national income per head was slightly over \$100. Our plan was to double the national income per head in the course of a quarter of a century.

In pre-war Poland, despite the widespread opinion that Poland was a country of great landowners and large farms, the agrarian

structure was peasant. It was a country of small owner-occupiers. Less than a half per cent. of all farmers had more than 50 hectares, and they occupied no more than 15 per cent. of the land used for agricultural purposes.

During twenty years of Polish independence 2½ million hectares were distributed among the peasants. This, however, could not remove the pathological conditions which we have heard discussed here during the first day of the Conference. The pressure of rapidly increasing population on the land was so heavy that two-thirds of the peasants were farming on dwarf farms of less than 5 hectares each. Research carried out a few years before the war estimated that 5 million people could be removed from agriculture without doing any harm to agricultural production. This estimate was made for the conditions prevailing then and for an older agricultural technique, that is, with large use of horse and manual labour and comparatively little use of tractors and modern labour-saving machinery.

It was widely realized in Poland before the War that the first step for raising the general standard of living and especially of those who make their living from agriculture, was to give useful employment to that mass of semi-employed or unemployed people. The problem, however, was a really difficult one. Intensification of agriculture could not help much, for a shift to more labour-absorbing enterprises would sooner or later be more than offset by a fuller use of modern machinery. The growth of industry was so slow that it was unable to absorb the surplus labour, let alone cope with the yearly increase of 350,000 in the total population.

But a closer study of the economic development of western countries and particularly of the methods by which they financed the last war brought our leading economists to the conclusion that the finding of employment in other industries for the surplus of agricultural population was not only necessary but also possible.

The past failure has been ascribed to a large extent to our deflationary policy, rigid adherence to the gold-standard principle, and to an over-cautious credit policy which limited investments to our low level of private savings.

The new plans were based not on the annual State budgets but on the manipulation of national income over a long period of years. The brief outline of the plan elaborated by a team of economists and technicians under the chairmanship of Dr. L. Baranski was as follows: First, it was assumed that, making full use of post-war relief and war reparations, the Polish national income would reach its pre-war level three years after the end of foreign occupation.

In the following period of nineteen years our national income should be doubled. To achieve this, it was not enough to give full employment to all the population. It was necessary to create thousands of new workshops, to make new investments which would double, or nearly double, our national capital, estimated at about \$13 milliards. The new level of investment would mean, it was estimated, a yearly investment equal to 15 per cent. of our national income. This is of course a very high rate, and we thought that if the result of these investments was to effect not a decrease but a steady increase of standard of living, we could not at first take more from our own national income than $7\frac{1}{2}$ per cent. The other $7\frac{1}{2}$ per cent. was to be found from outside sources, primarily in the form of industrial equipment. Foreign capital investment would decrease gradually till it would become superfluous in the twentieth year and onwards. From that year onwards investments which till then were progressively increasing could be kept at a steady level of about \$1 milliard annually and the surplus of savings, which would be still retained at the ratio of 15 per cent., would go to the repayment of the foreign loans. At the end of the nineteenth year the global sum of the national income would be doubled. Six years later the national income per head of a steadily increasing population would also be doubled.

I come now to the main problems we have faced. There was the question of securing outside help—slightly over \$3 milliards of foreign investments during those nineteen years. We were rather optimistic in this respect, counting on the probably greater interest of the western powers in the problems of middle-eastern Europe.

The investments from home sources were of no less importance. Taking for that purpose from $7\frac{1}{2}$ per cent. up to 15 per cent. of the national income might involve compulsory saving. There was the problem of monetary policy and of financing some investments by the so-called primary credit of the central national bank. The money would be directed to the most productive and really necessary investments. Although private initiative would be encouraged, there would be a much greater State intervention than before the War. There might be signs of inflation, especially in the first years of intensive investment, when there were still not enough of consumers' goods being produced. So some sort of control of consumption would probably be necessary, something on the lines of the wartime controls applied in Great Britain.

Generally speaking, the State would play a much more active part in the national economy. We agreed—though some with reluctance

and little enthusiasm—that for that period of rapid industrial development a planned economy would have to be accepted.

Last, but not least, there was the problem of general and particular technical education. We might need some technical help from outside in the first instance, and some of our young men might be sent abroad for technical training.

The total sum of the proposed investment was then divided into four main groups: (1) investment for developing industrial production, (2) communications, (3) building of houses and some other public works, (4) agriculture. Groups of economists and technicians were preparing more detailed plans.

For some time I was in a small team working on agriculture. We had two main problems: the first was land reform and the building of a sound agrarian structure; the second was production. A rapid growth of industrialization and a general rise of standard of living would bring a change in the demand for various foodstuffs. Less cereals, more fats, and more meat would be wanted, and this had to be taken into account with regard to the production programme. We did not proceed very far in the planning of our agriculture when the unfortunate decisions of the Big Three at Yalta made our work rather useless.

I should like to raise only one more point in connexion with the Polish planning. We estimated that during the time of one generation, when the income per head would be doubled, there would be a reversal in the ratio between the numbers of agricultural and non-agricultural population. Instead of two-thirds, only one-third of the people would be engaged in agriculture. Some arguments and fears were expressed that such a revolutionary change, even if possible, might be undesirable. There were fears that it might shake the stability of society. For if we consider the urban population as the dynamic factor in the life of society and the rural population as the static one there should, I think, always be a proper balance between these two factors, and a sudden change might carry a certain danger. The answer to this fear would be to spread industry widely into rural areas without concentrating it in a few large centres.

Of course, there are certain economic arguments against this, but there are not only social but also economic arguments for the wide dispersal of industry in rural districts, thus keeping a large part of the surplus agricultural population at home while employing it in other occupations. Consider just one point. If these 5 million people, plus the natural increase in population, were to be moved to big industrial towns, it would bring about a major housing

problem. If industry were to be so dispersed that hundreds of thousands of people could work in the industries and live in their houses in the country there would be considerable saving of capital, which could be directed to more productive purposes.

I would like to conclude with an expression of my faith that industrialization, whenever possible based on medium- and small-scale enterprise and distributed widely into rural areas, would be the best means of removing the pathological conditions of peasant farming and of raising the standard of living of the rural population.

H. LAFORÊT, *Algeria*

Since in industry the productive activity of labour and of capital is largely independent of climatic influences, the productivity of an industrial producer is therefore higher than of an agricultural producer. As a result, the net income of a country where there is a considerable industrial population is higher than that in those countries having a purely agricultural population. Moreover, this is still more true, and still more important, if the agriculturist has at his disposition less land and less capital. As a result a poor country (and I mean by a poor country a country which has on the one hand a dense population, and on the other hand, relatively little capital), which must seek by all means to augment the net income of its inhabitants, will therefore try to divert a part of its activity towards industrial activity, and it will see in industry the possibility of employing some of its labour.

At the same time I should like to point out that industry in the twentieth century is employing less and less labour by comparison with the nineteenth century. For instance, electric motors place at man's disposal a considerable quantity of horse-power, quite out of relation to the number of people employed in the industry. One should not therefore delude oneself, when considering the industrialization of a country, about the possibilities of employment which the population will find in the industrial sector. I will give you as an example a relatively poor country, namely, Algeria. I say 'poor' because it has a population which is growing continually, while its capital resources and its natural resources are relatively weak. Therefore if one is setting out to augment the standard of life of its inhabitants one must turn towards the industrialization of the country. But in doing so two problems arise. In the first place there is the necessity of finding the basic resources (by which I mean coal and minerals and petrol as sources of energy or as raw material, or water-power). The second problem is that indicated already by

Professor Benedict, namely, the law of diminishing returns. It is a fact that certain countries have a more marked aptitude in one domain than in another. Thus, the North African has a more marked aptitude for agriculture, while the possibilities of the industrialization of Algeria are limited. One has therefore to aim at an equilibrium. It can be obtained by the development of an industry, but not a basic industry; not, that is, a great metallurgical industry for which the country is not adapted, but some light constructive industry, and above all an industry concerned with the processing of agricultural products which, given the general vocation of the country, are and will remain without doubt the main source of wealth.

K. SKOVGAARD

In the Scandinavian countries we have had some experience in the spread of industry into rural areas combining agricultural and industrial employment, and I wish to stress one of the points made by Dr. Benedict, that it is not possible to generalize on this problem at all.

In the early process of industrialization the combination was beneficial; agricultural workers and small-holders were alternately employed in agriculture and industries localized in rural districts or in the close neighbourhood of rural districts; but this was only a transitory stage. By and by, as economic conditions improved, the rural population was employed either in agriculture or in industry. The agricultural workers and small-holders became industrial workers to a large degree because wages have been higher in industry than in agriculture. An essential part of the explanation of this transference, however, is no doubt to be found in the development of a social-security system. This system has diminished the risk of unemployment, and consequently the small-holding has lost its significance as an assurance of the necessities of life in times of stress.

Where and when the same development is to be expected, another problem arises which is in line with the remarks made by Dr. Duncan, namely, how far it will pay to relocalize industry in rural districts. As is very well known, many industries have a pronounced tendency to be located in certain localities in accordance with costs. Does it pay to dislocate industries of this type, and will the social advantages be greater than the economic costs of dislocation?