SOCIAL ASPECTS OF RURAL INDUSTRIALIZATION

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I AM speaking in a personal capacity as an engineer engaged by FAO for a study of ways to promote and maintain rural industrialization—a study which has just been completed, so recently, in fact, that the report is not yet in final form. Therefore I cannot speak as to the policies and activities of FAO in this respect.

FAO has realized from its very beginning in 1945 that agriculture can be healthy only in a context in which the rest of society and the rest of the whole world is healthy. Agricultural people can substantially improve and maintain their conditions only if the conditions of the whole world are expanding and continue in stable expansion.

The purposes of FAO as stated in its charter are to rationalize agricultural production, to stabilize price relationships, and to improve the conditions of living of agricultural populations. That is such a wide frame of reference that it may be considered appropriate for FAO to interest itself in the entire range of economic and social development—with particular reference to the problems of underdeveloped areas, most but not all of which are agricultural areas.

Three conclusions of mine in respect to rural industrialization may be worthy of attention here. First, the problem is not industrialization; at least, the term "industrialization" in any narrow sense does not describe the answer, certainly not if it is undertaken merely for the purpose of providing temporary payrolls. Such a limited objective will require continuing transfusions of some form of outside assistance, and so far it has never been made a part of the culture of the people of the area.

One-crop developments in agriculture have usually suffered the same type of final failure or social inadequacy. Wheat,

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sugar, cotton, rubber—none of these highly specialized cropping operations has been successful in constructing a balanced and viable local society. They have resembled industrial operations placed in rural areas merely for the purpose of providing employment or exploiting low-wage rates or local resources for outside profit, and not soundly based on the resources and cultures and needs of the people of those regions.

The proposition I have just cited involves much of the material which has been discussed this morning, including particularly Dr. Laugier's comments on the need of continuing research of many kinds, the application of technology to particular resources, and so on.

My second comment is that the problem of economic development in backward areas is more properly expressed as being the application of modern technology in suitable form and in assimilable doses in a certain area, by the people of that area for their own increasing satisfaction.

Experience seems to underscore the lesson that technology must be embraced by the people of an area, particularly of an underdeveloped area, in their own terms; and that this is so regardless of how primitive their levels of culture, education, and technology may be at the beginning of a program of improvement.

A third conclusion is that if we are sincere in our intention to strengthen, rather than to weaken, the ability of a given population to pull itself up by its own bootstraps and then maintain its position without continued transfusions and help from outside—then as engineers, or sociologists, or anthropologists we must necessarily begin with existing levels of education and culture, down to and including wooden plows and simple hand tools.

Beginning even at primitive levels, it has been found possible in many places to institute a chain reaction type of development. Education in simple hand tools and methods of applying human effort better to agricultural and other resources, some not even involving tools, has proceeded from

these hand techniques to the simplest machines; then on to better tools and better machines, then to the application of non-muscular power, and finally to the use of electricity and the whole range of procedures and processes of automatic equipment and so on, which we use for human satisfaction (presumably) in more highly-developed countries.

By the way, I was delighted to hear someone comment this morning that there is no completely developed country. To my knowledge there is no country, including the United States, which cannot learn from other countries in these matters.

So it seems to me not only incorrect but misleading to define technology as meaning strictly "levels of technological development reached in highly industrialized areas." It must be more socially useful to realize that "technology" in underdeveloped areas is the level actually reached in the application of modern technology as a whole to the resources of backward areas in terms of their own traditions and cultures and even their habits, family patterns, and desires.

I am impressed with the idea that surveys and plans for backward areas should be made by *teams* of technologists, including economists, engineers, sociologists, anthropologists, and no doubt others.

The Mexican Government has been very successful recently with "cultural missions," as they are called, which are sent to the most backward mountain villages of the country. Such a mission might include an agricultural economist, specializing in the resources of that region, a construction engineer, a mechanic skilled in the simplest type of operation such as that of the village blacksmith shop, a home economist, a sanitation expert, *and a musical director.*

At first glance that last inclusion—the musical director—may appear to be curious; but at second glance it is highly appropriate and it has been very successful. The Mexican villagers want to sing. Music is just as much a part of their standard of life, or rather of living, as food.

If we begin at existing levels, primitive as they may be,

then I think we may find it possible, and it is being found possible, to blend with their existing cultures and habits a suitable amount and kind of what we call "modern technology" which they can make their own and which they can then continue to adapt and increase and improve just as we have done.

I do not think it needs to take as long as might be assumed. Two or three years might accomplish amazing results, even with the most backward peoples. Bear in mind that in almost any population you will find highly developed levels of manual dexterity and skills, perhaps only in wood carving but real skills just the same. Almost everywhere there is a desire for leisure, and that is an indispensable requirement for the continuing possibility of better standards of life. If we do not find that, the population has become so submerged that it has lost the idea and the hope of improvement.

For a comment or two on the very thoughtful discussion in this meeting so far, this kind of approach means that the actual levels of life or standards of living that exist in a given area are not of primary importance, above the starvation level. What is essential is the principle of growth and improvement and confidence in the hearts of the people that it will continue.

I am inclined to suggest that we think and talk more in terms of standards of life, rather than of living, recognizing clearly, although imperfectly, that the standards of life with which we may be dealing include values which cannot be developed artificially by any means now known and cannot be measured in terms of statistical standards of living.

Therefore, we do not have to have completely integrated plans. I am sure the previous speakers were not suggesting we must have perfect plans. We are "fresh out" of perfect plans, even in straight economic or engineering terms, for the most desirable economic pattern for a given area. There are many desirable patterns and we do not know precisely what the status will be ten years from now in any part of the world.

We do have to have a good idea of the *directions* of movement in broad detail, to provide the necessary basis for the

confidence in continued improvement which (if I am correct) is the essential element. Research, of course, as Dr. Laugier underlined, is a continuing requirement for the whole world if we are to maintain the growth and improvement which is just as important in the highly-developed countries as in the backward countries. There is only one way to maintain this growth and improvement and that is through continued research and continued application of research.

With respect to the more underdeveloped areas, let us not underestimate the vast opportunities immediately at hand for the application of *known* methods, even published methods, which are available in different parts of the world but which have not been brought together and translated linguistically and technically in a usable form for given backward conditions.

Similarly, there is a still greater field—I am speaking now as an engineer—for immediate development in terms of the next few years or even months, at very low cost, in the translation of modern engineering and technological processes into small-scale operations and operations specialized for application to given local resources. All over the world there are existing laboratories and experiment stations, not nearly enough of them, but enough to produce results that would amaze any of us in a matter of not many months, if they could apply their known methods and train people in such application. Research people are available, at least in some places, and astonishing accomplishments might be made if their efforts were directed properly toward the improvement of existing agricultural and domestic procedures among their own backward groups.