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## AGRICULTURAL EDUCATION IN UNDERDEVELOPED COUNTRIES

by

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*EDITOR'S NOTE: Is it appropriate to use the agricultural education program of the United States as a model for similar programs undertaken in our efforts to assist underdeveloped or newly developing countries? What are some of the considerations involved in foreign aid programs that include educational programs in agriculture?*

*Dr. David Hartzog has some thought-provoking responses to these questions. Because agricultural education will have an increasingly significant role to play in future international aid programs in developing countries. THE VISITOR presents Dr. Hartzog's observations.*  
—Milo J. Peterson, Editor

American agricultural specialists working with foreign aid programs in the various "underdeveloped" areas of the world are subject to making some very serious errors in the design of programs of rural and agricultural education. There is even a great deal of confusion as to what constitutes an "underdeveloped" country. One commonly used approach is to consider the percentage of the population that is engaged in agriculture, a high proportion of the population being engaged in agriculture being an indication of underdevelopment. New Zealand is a case in point under this definition. It has a high proportion of its people engaged in agriculture and one of the highest standards of living in the world. This definition appears to not be valid for those countries whose resources are primarily agricultural and who are not suffering from over-population. Several other characterizations are used by various economists; such as the prevalence of high interest rates, output per man hour, capital investment per worker. Any of the above definitions apply to

only a part of the world's cultures. A somewhat loose definition that appears to be more broadly applicable is that proposed by Jacob Viner. He says a country is underdeveloped if it can use more labor, or capital, or natural resources to provide a better standard of living for its population, or support more population at the same level. This of course says in effect that practically every country is underdeveloped, varying only in degree. It allows for the fact that some poor countries will always be poor. He points out that the state of the arts determines the extent of use of natural resources.

A broad look at the problem of underdevelopment, an examination of the general barriers to development might help. The first and most obvious reason for underdevelopment is scarcity of capital. Usually associated with this is low productivity function. Resource limitations such as rough topography or in-temperate climate may be very real obstacles, yet they can be overcome; good examples are Switzerland and Norway. Most people who have delved exhaustively in this problem regard low productivity due to physical difficulty as less important than mental and attitude limitations. The mental development and attitude limitations are directly dependent on the number and quality of teachers. High level technicians are not usually a critical problem, they rarely are in critically short supply, and if they are they can be imported in sufficient numbers. India is a good example of this. More than one astute observer of conditions in India has pointed out that what are needed most in that country are "nut and bolt"

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mechanics, practical teachers, in short, second level technologists.

Since limitation of capital is one of the obvious and most important problems, and since capital must essentially be "home grown", scarcity of capital is a problem growing out of mental and attitude limitations. By saying that capital must be homegrown, I mean that no amount of dole or foreign aid can by itself really put a country economically on its feet. Basically capital formation is accomplished by most of the people of a country consuming less than they produce over a period of time so that formation of capital for developing resource utilization is possible. This requires that a level of production exists that is above the starvation point of the people, and that they have attitudes that induce saving rather than consuming any gains made. The accumulation of capital for what the economists call "social overhead", roads, communication, education, port facilities, etc., because of the nature and scope required, of necessity must be gathered and administered by group or agency action. It may well be that unstable governments are not liable to use such funds wisely, even if they are available. Private capital cannot be used for investment in these facilities because the return to investment is not direct. Many seriously underdeveloped countries have sufficient capital to develop further, but it is in the hands of a small privileged class who live lavishly and spend and invest abroad. The conditions found in a country then, may be

taken as resulting from the attitudes of the people.

While the economic status and existing governmental policies are an outgrowth of the reflection of common attitudes of the people, a direct attack by a community level agricultural worker on the economic conditions and governmental policies is not likely to be very productive. Since these are the outgrowth of attitudes of the people, and bringing about changes in people is the business of education, here seems to be the point of attack for the educator. We cannot depend on the unsafe assumption that human nature is pretty much the same the world over.

In the first place, let us look for some important differences in background, which are a factor in attitude formation. Western European culture, and to a much greater extent North American culture, has developed under conditions of comparatively short supply of manpower and long supplies of resources. The whole economy of the United States is geared to lavish use of resources and minimum use of human energy. With six per cent of the world's population, we consume over half the world's supply of steel and two-thirds of its petroleum. Agricultural practices that are sound in this country may be entirely out of place in the context of an underdeveloped country. We tacitly assume that mechanization is essential to the improvement of agriculture. This has proven true in this country. Witness the migration of "King Cotton" from the south to the southwest, where mechanization and management of moisture enables it to be produced more cheaply. Yet, a study by C. F. Zuroske on farm work simplification in Haiti came up with the hard facts that with the price and abundance of labor, mechanization of the sugar cane industry there was not feasible. Besides it would have put thousands of people out of work, and there was not the potential in the economy to provide other employment.

From this standpoint alone, it behooves the agricultural educator to proceed with caution. As Americans we are too prone to assume we are right; and the shy, polite people of some other countries may make the same assumptions, or let us make them. Another word of caution is advisable. Whenever

an agricultural practice is found, it probably exists for a reason, and until the underlying reasons have been thoroughly examined, the recommendation of change is unwise. For a hundred years the agricultural specialists of Europe, and to a lesser extent of America, have been urging temperate zone practices on the people of Africa, South Asia and South America who practice "shifting cultivation." The tropical areas of the world are littered with these wrecks, fortunately the jungle soon covers them. The cold truth is that we have not developed any system of tropical agriculture that is better than the unlearned natives shifting cultivation with the exception of a few specialized plantation crops, operated by white corporations, and which practically always cause a dual economy to exist in a country where it is practiced. By a dual economy, we mean, found side by side are a primitive, native agriculture and a large scale, highly technical plantation agriculture. The two may exist side by side for long periods with little exchange culturally between them.

Nor are the climatic, economic and governmental aspects alone sufficient explanation for the differences in context. Before the white man came to North America, the ratio of resources to men was more pronounced than since. The noble, nomadic savage proved to be an indolent, shiftless peasant farmer. This pattern too, has been repeated almost around the world. We might do well to focus on our own Navaho, Blackfoot and Chippewa Indians before we set out to tell the rest of the world how to run its agriculture.

We need to take into account that cultural values, ideals and attitudes of different peoples may be far different than they appear on the surface. One common characteristic of illiterate backward peoples is that they are not oriented toward decision making. In the United States we find the other extreme, the habit of making conscious choice is begun in the training of early childhood in this country. This is less so in Europe, where a person is much more likely to stay in the occupation and social class to which he is born. The very idea of making a decision is foreign to many people. They let custom, tradition, whim and superstition determine the times of planting, harvest, festivals, and the methods of

doing things as well. It simply has not occurred to them that discriminating observation may lead to a conscious choice that will give better results. Dr. Alvin Donahoo relates that in the highlands of South America the peasants determine planting rate and time for potatoes by obscure "signs" interpreted by an elder of the village. Donahoo found that sparse plantings yielded better, because moisture was a limiting factor, but had a rough time inducing anyone to try it.

Primitive peoples rarely have much of a grasp of the principles of cause and effect. We say that they are superstitious, which actually is the assigning of effects to improper or non-existent causes.

Among many peoples the principle of private ownership of land is a concept not understood. This is particularly true of people who have a history of shifting cultivation or transhumance agriculture. The Mau-Mau uprising in Kenya grew out of this lack of understanding. The British white traders "bought" holdings of land from the Kikuyu who lacked the concept of permanent and individual ownership of land. To them the purchase might best be described as a tribal lease, and when population pressure and drouth hit them, they declared the "lease was up." The British took a dim view of this; one wonders who was "right."

Much of the Islamic world attaches much more importance to water than to land. This is a reflection of their millenia of occupying desert lands. Islamic law, stemming directly from the Koran, specifically codifies the conduct of man so thoroughly in regard to the use of water, that in most Islamic countries a separate legal code of land and water rights has not been developed. The western concept of title of ownership to land is largely lacking. A sideline outgrowth of this has been the development of "pump feudalism" practiced by some of the sheiks of the Near East. Actual legal ownership of the land of much of the Near East rests with sheiks, who "own" it, not in acres or hectares but in villages, including the populations who are more or less attached to the land, and are wards of the sheik. Again, Islamic law virtually refuses to recognize production capital, and lending money for any purpose, including production, is a sin. Actually this stems directly from

Mohammed's time when borrowing was only for consumption. This was sinful since need could arise only from acts of God or from improvidence. The reasoning is that a borrower is either an object of charity or not fit to be helped, so charging of interest is regarded as a sin. In strict Moslem countries bonds are regarded as illegal, but common stocks are not since they represent joint ownership of a venture, and involve risk sharing.

Our system of agricultural education is predicated upon a culture in which:

1. Material resources are comparatively much cheaper than manpower.
2. Decision making is a habit pattern begun in early youth, and one of our most dearly defended heritages.
3. Conscious attention to interpreting cause and effect and avoidance of superstition is regarded as a virtue.
4. We are profit and market oriented, regard capital as a resource, almost as a commodity to be "rented", loaned, owned, and above all accumulated.
5. We are production oriented, we regard wealth from production as "honest" wealth and wealth from trading or dealing without contributing to utility as "dishonest" wealth.
6. We are literate, have committed ourselves to 12 or more years of schooling for all the children of all the people. We can and have developed a system of agricultural and rural education predicated upon literacy and attached to formal education.
7. Most of our agricultural educators hold fond attachments to farm life, and many in fact, are frustrated farmers. The urge of the backward villager to acquire token literacy and escape to the city is hard for us to understand.

When we add up all these differences, I think that we can almost generalize that to set up a system of rural and agricultural education using our system as a model, is not a wise procedure. A. W. Peterson holds that the level of poverty is such in most underdeveloped countries that released time from productive labor of children for schooling is probably not practical. He feels that short term classes for both children and adults, to develop literacy and agricultural information will be generally more productive than a full scale, school centered program such as ours and will ultimately be more successful. Dr. Alvin Donahoo reports an experience, which raises doubts in an illustrative way, of demonstration and extension methods. He urged villagers to castrate male animals to control breeding rate, and avoid parturition of work animals at seasons when they are needed in the fields. The only way he could convince the people to let him castrate an animal was to promise to pay for it if the animal died. Naturally a high percentage of them died (theoretically as a result of castration) and, incidentally, were eaten.

It appears that an agricultural and rural education program should be set up only after a careful anthropological and sociological survey of the people concerned. Their customs and values, attitudes and aspirations must be utilized and considered in any program that is to be of lasting benefit.