

IDEA FOR RECRUITING NACTA MEMBERS

Robert R. Shrode, Professor of Animal Science, Institute of Agriculture, University of Tennessee, Knoxville, Tennessee 37196, and regional Director-Elect for the Southern and Puerto Rico region has been extremely effective in recruiting members for NACTA from the University of Tennessee.

An edited version of Bob's procedure is as follows: "My procedure for recruiting NACTA members here at U.T.-Knoxville has been very simple. I have a standing request with Murray Brown to send me a current copy of the Tennessee membership each time he gets a new computer printout which includes the names of members added since the last list was printed. Then I prepare a memo extolling the merits of NACTA and membership in it. Ideas listed in the memo include:

1. The advantages of enlarging the circle of dedicated teachers of agriculture with whom to exchange teaching ideas and experiences through papers in the *NACTA Journal* or through attendance of and participation in NACTA meetings.
2. NACTA dues constitute a fantastic bargain as compared to most of our other professional society dues.
3. The *NACTA Journal* is a useful medium for publication of teaching papers, several of which can be written by anyone who has been seriously engaged in teaching for a number of years. Such papers provide teaching faculty members with the same kind of evidence of productivity as is provided by published research papers.

This memo is sent by campus mail along with a NACTA brochure to all members of our faculty who have not yet become Institutional Active NACTA members.



INTERNATIONAL AGRICULTURE

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EDITOR'S NOTE: In conjunction with the objective of making NACTA members aware of opportunities for service in International Agriculture, the following information is provided.

"FRIENDS OF WORLD TEACHING is pleased to announce that hundreds of teachers and administrators are still needed to fill existing vacancies with overseas American Community schools, international, private, church-related, and industry-supported schools and colleges in over 120 countries around the world. FRIENDS OF WORLD TEACHING will supply applicants with updated lists of these schools and colleges overseas. Vacancies exist in almost all fields - at all levels. Foreign language knowledge is not required. Qualification requirements, salaries, and length of service vary from school to school, but in most cases are similar to those in the U.S. For further information, prospective applicants should contact: FRIENDS OF WORLD TEACHING, P.O. Box 6454, Cleveland, Ohio 44101

A Viewpoint

Rural Education and Development

David L. Howell

Abstract

A viewpoint on the relationship of education and technology, based on experience of the author in Columbia, South America, is discussed. It is suggested that rural education should receive a very high priority in developing countries.

Since World War II many universities in the United States have been advising and assisting developing nations. Many of these nations, however, are still searching for answers to the complex problems of development which confront their societies and economies. As our universities continue in their effort to assist this development, they must examine past accomplishments and also very carefully consider the total cultural and economic picture of the country involved. What works in one country will not necessarily work in another. Our foremost consideration must be the development of programs which will help the greatest number of people and have the greatest effect on the development of the country.

In considering ways to achieve this development, countries in South America and specifically Colombia have a number of alternatives, but limited funds for investment. They must, therefore, decide which investments will have the greatest returns. Among the alternatives usually considered are industrialization, large scale agricultural development, and emphasis on higher education. The alternatives which are usually given little or no consideration by advisors to these countries include agricultural development specifically for the small farmer and an agricultural emphasis in the elementary education curriculum in rural areas. The latter alternatives should be given serious consideration.

Industrialization Problems

Many economists have stated that the way for a country to develop is through industrialization. Start building cars, washing machines, and refrigerators and the country will reach the same level of development as other industrialized countries. Several questions should have been considered, however, before any money was invested in industrialization. Where is the money coming from, who will buy the products, how many people will be employed and what effects will industrialization have on the rural sectors of the economy?

Industrialization is very expensive and requires a favorable balance of trade for its support. Its products, for the most part, do not have an external market for there is too much competition on the world market; and therefore, they must be consumed at home. Without a corresponding development in rural areas only the few rich people and those employed by industry can buy the products of industry. With the great amount of mechanization in modern factories few employees are needed to produce many products. Many such industries must operate at half capacity because there is not a sizeable market for the product. An example of this was seen by the author while visiting a cereal plant in Colombia: the cost of its product was so high that only a few could afford it, and the plant was forced to operate at half capacity. Because so much of the country's limited budget is spent on industrialization, little or nothing is left for

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rural development. People from the rural areas migrate to the cities for the good life, but find they cannot compete for the factory jobs and become additions to the growing urban slums.

Needed: Labor Intensive Agricultural Development

Agricultural development may not seem as glamorous as industrial development to a developing country, but it must come first. The need for food and the poor production levels in the developing countries require that much of the labor force and land resources be engaged in agriculture. In many developing countries as much as 60 to 80 percent of the population is engaged in agriculture, and 50 percent or more of the national income is generated by agriculture (Mellor, p. 4). Mellor finds considerable evidence to support the theory that increased labor input within the traditional framework of production can increase output significantly in most low-income countries. Advancement in technological developments related to agriculture requires a complementary input of labor. This would increase food production as well as job opportunities in rural areas (Mellor, p. 157).

How is this agricultural development achieved? It must begin with a technological breakthrough. To introduce production of a new crop to people who can ill afford to risk a chance of loss, the new seed or method of production must increase yields by 50 to 100 percent. If it is not a dramatic increase in yield over that which is produced by traditional agriculture, few farmers will be quick to accept it (Hopper p. 110). If expensive equipment is needed for the new technology, that technology will not help the small farmer — the large majority of the rural population. The technology must be developed for the small farmer and if the larger farmer can also use it, fine. Only in improving the earning power of the small farmer will a mass market be available in rural areas for industrial goods. The new technology must not require large amounts of mechanization; instead it must be labor intensive. The rural areas have a great amount of manpower who need full employment.

An example of the right kind of technologic breakthrough in agriculture is happening in India with its new high yielding grain varieties. The new rice and wheat varieties were first introduced eight years ago, and the small and medium-sized farms are taking the greatest advantage of them (Sen, pp. 103-104). Although hampered by insufficient irrigation, production has increased greatly; and with double cropping there should be employment for a greater number of workers.

Needed: More Effective Education

Education in rural areas does little to aid agricultural development until superior crops and technology for agricultural production are introduced (Schultz, p. 189). Then the new crops and technology must be introduced to the people, and they must be trained to use them. Because innovations are often complex, it is diffi-

cult for a farmer with little or no education to adapt to them. Formal education or some informal method of instruction is therefore required.

The effects of research and agricultural education on farm people and the agricultural growth which can result are seen in Japan. Here production has been greatly increased despite severe limitations on land available for production. The Japanese have increased the number of crops grown per year and the yields of each crop. This is the result of ". . . two types of public investments: (1) investment in research to discover and develop agricultural factors specifically tailored to the biological and other requirements of Japan, and (2) investments in schooling, not only of a corps of specialists to extend this knowledge to farm people, but of farm people themselves, which among other things has enhanced their abilities to employ successfully these new inputs which involve complex and difficult farm practices" (Schultz, p. 190).

Another example showing the relationship between the level of skills and knowledge and the farmer's ability to increase the rate of production is shown by immigrants to developing countries. In South America, European and Japanese immigrants have achieved higher production levels in farming than those around them (Sen, p. 181). The agricultural resources are the same, but the higher level of education which the immigrants possessed enabled them to make better use of the resources. Rural education must, therefore, be incorporated along with the new agricultural technology.

How does education allow farmers to make better use of resources? Wharton states that "Education pushes back cultural limits or prohibitions; it widens the scope for decision-making, because it broadens the individual's notions of the 'possible'; it adds new tastes and stimulates motivation; it very often induces frustration which usually leads to heightened personal and political activity with important economic consequences. . ." (Anderson & Bowman, p. 206). The most important outcome of education is knowledge to use the alternatives available to individuals. With more complex technology being introduced, education takes on greater importance.

Schultz suggests investment in elementary schooling is the most profitable. Schooling happens when individuals can do little appreciable farm work; therefore, few earnings are lost by children six to ten years of age while in school (Schultz, pp. 201-202).

Ways to bring education to rural areas can be developed. First of all, educators can be encouraged to teach in rural areas for a period of time by requiring all new teachers to work in rural areas for two years before receiving licenses to teach in the city. The armed forces can be used to teach in rural areas as part of their service, as in Turkey. Higher pay can also be used as an incentive to attract teachers to rural areas. Currently, many teachers in rural Colombia have only elementary educations; those with higher education prefer the city. To teach third grade in rural areas only a third grade education is