

NUTRITION

View from Central America:

How IFT Can Help Developing Countries

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■ THE POPULATION EXPLOSION today must concern every country in the world community. This is true even though the technologically advanced countries currently produce more than enough food for their needs. In the United States alone, with less than 7 percent of its population involved in the business of agriculture, enough food is produced to give every man, woman, and child 12,000 calories per day.

In the underdeveloped countries, in contrast, the gap between food supply and the increasing population is widening to such an extent that it has become an emergency. Malnutrition and the diseases associated with it are widespread. Communication and transport are so poor in some areas that people can die of starvation a few miles from a food surplus. The need for improved education is obvious. A broadening of the whole scope of the educational process (including technology) would inevitably lead also to an accelerated industrialization, providing jobs and an improved standard of living for large numbers of people.

Contributions the Institute of Food Technologists can make should be considered separately for each developing area. Differences between areas make it impossible to generalize about any country's population, educational needs, and agricultural productivity.

A brief survey is presented of each of these topics with reference to the Central American countries, suggesting some of the possible contributions that IFT could provide to help this developing area.

Population

The Central American population, including that of Panama, is distributed among six countries located from Mexico, on the northwest, to

Colombia, on the southeast. The populations (mostly of mixed Indian-Spanish descent) are predominantly rural, with seven of ten persons obtaining their livelihood from the land. The majority of the people in all the countries have a low socio-economic status.

According to recent estimates, the population of Central America is approximately twelve million for the six countries. The rate of population growth is about 4 percent annually; thus, the population may be expected to double every twenty years. Since the most important problem for immediate consideration is the means of increasing the food supply to the minimal amount needed for the present population, it is shocking to realize that agriculturists and food manufacturers must look forward to twice the population two decades from now. At the present time, improvements in agricultural methods and all methods of food production are painfully slow or nonexistent.

Aid to Education

The principal handicap to the development of most of the Central American countries is not a poverty of natural resources but a neglect of their human resources. The development of a region depends primarily on the efforts of its people; unless ways are found to raise their morale, increase their motivation, and develop their potential abilities, the country cannot progress economically, politically, or culturally. With higher education limited to the select few and illiteracy ranging between 40 and 60 percent in Latin America, it is of the utmost importance to improve education at all levels.

Central American colleges and universities offer many courses in the humanities and law, but are much

weaker in science. Even their basic science courses are hampered by poor laboratory facilities, and opportunities are very scarce for study in the applied fields of agriculture and engineering. The situation seems to be due largely to lack of recognition of the value of these subjects, at least as part of a university curriculum. Poorly supplied libraries and laboratories, along with underpaid, unqualified, and uninterested part-time teachers conspire to give a very small number of honor students a chance to compete for foreign scholarships.

The IFT could make a significant contribution in the form of laboratory equipment and supplies for Central American universities and research centers. Much of this could be obtained, probably at no cost, from the storage closets of U.S. university laboratories. U.S. scientific supply houses might be interested in supplying needed laboratory chemicals and apparatus at cost for educational purposes. Another need of higher education is an adequate supply of recent textbooks in Spanish, along with journals and other teaching aids.

Endowed Departments

The IFT might also help Latin-American education by endowing university departments of agriculture and food chemistry patterned after similar departments in U.S. schools of agriculture. One such faculty in each area would be a good beginning—preferably established in a new college located as centrally as possible.

Such contributions would be particularly satisfying in light of the not surprising statistic that two-thirds of the present population of Latin America is under 25 years of age. If young people become alert to the new opportunities, particularly the need for technical education and training, increased food production and industrialization of Central America will soon become a reality. Furthermore, as educational facilities and job opportunities improve, students will have less time and need for the agitation that degrades the universities and contributes to the political instability of the countries.

Adult Education

Ways are also needed to educate the businessman, the industrialist, the government worker, and the farmer. Education for this group is not intended primarily in the sense of imparting new knowledge but rather in

the sense of persuading people of the rightness of the efforts being made to solve the problems of the area. Even among the more well-to-do there is a good deal of lethargy to overcome. Government officials generally look upon their duties as being solely the preservation of law and order. It is amazing that many of these adults are unaware of the grave problems facing their countries. A possible means of helping remedy their ignorance would be publication of a series of articles in a wide range of magazines and newspapers to interest them in taking part in the development of their country.

To accelerate programs of technical and vocational education, significant contributions could be made by giving intensive short training courses in the U.S. to groups of young people at the technical level. At the same time, it is particularly desirable that there be even more advanced training in the U.S. of graduate students from the lesser-developed countries. Likewise, it would be advantageous to send students to other countries, especially those that are solving problems similar to the ones in the students' own areas.

Already established in some areas, collaborative studies between universities and research centers of the developed and the developing countries are mutually rewarding. Besides the common interest in solving technical problems of research, they contribute to international good will through the exchange of ideas and aspirations.

Aid to Agriculture

Food Production. Several recent reports have indicated that throughout Latin America, agricultural and food production is not large enough to meet the needs of the population. FAO statistics show that Latin America today is producing less food per capita for internal use than it produced 25 years ago.

Among the factors responsible for the poor agricultural production are low educational status of farmers; inadequate agricultural research in food crops, animal husbandry, and other agricultural fields; insufficient training opportunities in the agricultural sciences; little use of insecticides, fertilizers, and mechanization; and lack of agricultural credit.

The problem of inadequate food production in Central America could be solved if agriculture received effective emphasis in education. Improvements in farming methods resulting from application of the farmer's new

and food technology. Work in the knowledge would lead to greatly increased production of farm crops. Additional land could be devoted to agriculture if transport facilities made it feasible. It is regrettable that during the past few years much more emphasis has been placed on other types of technical assistance in the Central American area, while advances in agriculture have been relatively neglected.

Food Preservation. A second need in Central America and other developing regions is improved methods of conserving and preserving the products of agriculture. This is another field in which IFT could assist the developing countries. There is little knowledge of proper storage and processing of foods; and what is known is mostly outmoded and usually unsatisfactorily applied.

Much could be accomplished by the distribution of technical articles and bulletins from the U.S. Agricultural Experiment Stations, home economics departments of universities, and the U.S. Department of Agriculture. These would need to be adapted to the area and translated into the language commonly used.

New research is also needed in many areas to solve specific problems that arise from different environmental conditions, diversity of crops for man and animals, and lack of facilities. For example, more knowledge is needed on the types of raw material required for preservation of forage through ensiling, and on the local handling of cereal grains and other crops to protect them from high moisture, high temperature, insects, and other pests.

Natural Agricultural Resources. The Central American countries, like many other lesser-developed areas, are rich sources of potential new crops. These might include seeds, grasses, fruits, and other natural vegetable and animal products that could be used either in animal feeds or human foods, or for industrial purposes and export. The potentialities of the whole area are tremendous, but they are not being efficiently utilized at present and are being lost because little real chemical, biological, and utilization knowledge about them is available.

Better utilization of the natural resources is an undertaking that should involve individual organizations and institutions of diverse interests. Too often, the efforts are not coordinated. The need for expanding and financing research in this area is not often realized, and it is frequently under-

estimated as a needed aspect of development.

Animal Nutrition. The poultry, swine, and cattle industries in Central America are beginning to develop, but new problems are created with their progress. One of these is the competition for cereal grains and other food products now used by the bulk of the rural population for their own sustenance. One way of easing the competition for cereal grains and other human foods is to increase production. A second possible way is to find substitutes for the grains used for the animal industry. This can be accomplished only by doing the research needed in the area where it will be applied.

Need for Research

Industry, government, and individuals in tropical areas must have available scientific, economic, and technological research services. Existence of a permanent, broadly conceived, and centrally administered institution for research may be decisive to the future well-being of the countries and their peoples. Such an institution should be patterned on the USDA regional research and utilization laboratories.

The need here is urgent. Constructive balance must be found for the dynamic forces of population growth, national aspiration, food productivity resource development, and conservation. The importance of expanded research capacity can be seen in terms of: 1) the material and political demands of rapidly increasing populations whose rate of increase exceeds production of food, housing, education, opportunity, and industrial plants; 2) rising expectation among the peoples of underdeveloped areas, catalyzed by revolutionary developments in transport, communications, and other areas of technology, and by political awareness; 3) the need to create opportunity for individuals with advanced academic training to put it to use in their own countries; 4) the need to develop vast, unused resources of agriculture, land, climate, and manpower; 5) the necessity to create new avenues for capital investment by private and public enterprises.

A beginning toward this type of needed research has been marked in Central America by the Institute of Nutrition of Central America and Panama (INCAP). The work here should be broadened immensely, but a chief problem at present is financial support for activities in food science past few years has included product

development studies in human foods, food processing, agricultural food and oil crops, animal feeds, and nutrition. The benefits of this work are only now beginning to be felt, and the need to increase the activity is urgent.

Furthermore, students sent to the United States to obtain advanced degrees in food science or nutrition are now ready to help carry the work forward at home *if there is the opportunity*. Where the opportunity is lacking, their special training may not be used effectively. To help keep this opportunity open is an important role that IFT can assume for developing countries.

Finally, it is often noted that scientists from underdeveloped areas are rarely seen at international confer-

ences dealing with the problems of such areas. The IFT could stimulate much interest by supporting the participation of more scientists from underdeveloped areas, even if at first they have little to contribute.

The IFT could also organize a regional technical conference each year in an underdeveloped area, to review developments and to propose further action in certain technical fields. This would be a worthwhile venture since each conference could crystallize its findings in a series of recommendations for common or joint action. The personal contacts made at such conferences would also prove invaluable. Subjects might include animal husbandry, protection of fauna and flora, nutrition, rural economy, agriculture,

education in food science and technology, and other problems of the underdeveloped area.

The only lasting way to help solve the problems of underdeveloped countries is to increase their abilities to help themselves, using their own people and their own natural resources. Only thus can a thriving and stable society be established. As independence was a feature of the early development of the United States, so is it vital to the emerging countries of the world today.

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