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UNITED NATIONS TECHNICAL ASSISTANCE TO MEXICO

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Although the technical assistance activities of the specialized agencies of the United Nations are important avenues by which new technical knowledge is entering Mexico, they are falling far short of making the contribution to Mexico's economic development of which they are potentially capable. This is surprising, and difficult to explain.

From several points of view, Mexico could easily be pictured as an excellent example of a country in which the full potentialities of the technical assistance programs of the UN agencies might be demonstrated to the world. Mexico, for instance, is hungary for technical knowledge and is spending substantial amounts to hire the services of foreign technicians. The country is actively and effectively engaged in developing its economy, and its rate of economic growth has been extremely rapid in recent years. Moreover, Mexico is a full-fledged member of the UN and its specialized agencies. It has a stable government, and a long history of being a free and independent country. Numerous Mexicans hold important posts in UN agencies, both in the offices in Mexico City and at the headquarters of the various specialized agencies. A Mexican government official was a member of the special committee which drafted the original UN resolution that became the basic document authorizing and defining the nature of The Expanded Technical Assistance Program of the UN agencies.

These and related factors suggest that Mexico might well be an excellent seedbed in which the technical assistance activities of the UN agencies could grow and flourish to full fruition. Yet a substantial number of the UN technicians in Mexico are far from happy about the results achieved, and a few Mexican government officials are apologetic about the ineffective manner in which the country has made use of the potential resources of the UN agencies. The activities of these agencies in Mexico are neither a cross section of the various types of technical assistance which are available through the UN agencies, nor are they integral parts of or planned supplements to a national program of economic development. To a surprising extent they are like Topsy, in that they "jes' growed."

The explanation for this situation appears to stem from two sources: (1) Mexican attitudes toward technical assistance; and (2) the lack of co-ordinated planning on the part of the UN technical assistance agencies. Both merit brief explanations.

MEXICAN ATTITUDES

Attitudes about complex activities such as technical assistance rarely fall into neat, easily described categories. Yet a few points are clear. For instance, some Mexican government officials are not at all enthusiastic about Mexico admitting that it needs outside help in developing its economy, or they think only of the need for foreign capital. Others are willing to accept technical assistance, but only in limited doses and on carefully selected projects. In the past more than at present, UN technical assistance has been feared as an expression of Yankee imperialism or European colonialism. Mexico is concerned not only about the technical qualifications of foreign technicians but also about their nationality. It doesn't want too many from the United States, for example, because, as the Mexicans put it, "there is always danger in living in the same room with an elephant."

That Mexico has not been a booster of technical assistance is suggested by what it has done in the way of financing the Expanded Program of Technical Assistance of the United Nations. Each of the specialized agencies of the UN has a "regular" budget from which it carries out the work for which it was originally created, some of which is in the nature of technical assistance. The contributions which the member nations make to this "regular" budget are in reality assessments which each nation obligated itself to pay as a condition of membership. In addition, since 1950, there has been what is known as "The Expanded Technical Assistance Program (ETAP)," which is not financed through assessments but through voluntary contributions of governments. Each year there is a Pledging Conference at which the member nations of the UN meet, and each nation pledges the sum which it wishes to contribute to the program for the following year. The Expanded Technical Assistance Program got under way in July 1950, and represents the major effort of the UN agencies to transfer knowledge across national boundaries. During the first 18 months, Mexico didn't contribute anything to the ETAP budget. Beginning in 1952, however, and for each year since, Mexico has contributed an amount equivalent to US$33,600. This has usually placed it sixth or seventh from the top among the 20 Latin American countries, though in terms of population and wealth it probably ranks about third. The contributions of Brazil, Argentina, Chile, Columbia, Cuba, and even little Uruguay have customarily been greater that that of Mexico.

On the other hand, Mexico has usually ranked second or third among the Latin American countries in the amount of assistance received from The Expanded Technical Assistance Program, when it is measured in terms of funds spent by the specialized agencies. From the beginning of the expanded program in July 1950 through the end

of 1955, the contributions which Mexico paid into the special account for The Expanded Technical Assistance Program of the UN represented less than one-third of the cost of the technical assistance which it received from this program. The rich countries of the world, of course, make the major contributions to ETAP, and most of the Latin American countries receive more than they give. Mexico's relation, however, between the contributions which it has made to ETAP and the cost of the technical assistance which it has received from the Expanded Program represents the extreme case among the large and important nations of Latin America. On the other hand, Mexico has made substantial contributions to two regional projects of UN agencies that are headquartered in Mexico but are organized to serve all Latin American countries. These two projects--Fundamental Education and Civil Aviation training centers--represent areas of development in which Mexico is probably more advanced than its neighboring republics. She, therefore, gains status in Latin America by supporting them rather handsomely.

The fact that Mexico is one of the few countries in the world which has not signed the general convention on privileges and immunities, by which technicians from the UN agencies are granted exemptions from import duties on their household furnishings and are given a special diplomatic status while they are in the country, is interpreted by some people as an indication that it is not a wholehearted co-operator in the UN family of nations. This may not be, however, an important index of Mexican attitudes, because there are certain constitutional problems involved that are not easily resolved. Mexico, however, has not been imaginative in developing mechanisms by which to get around these problems. In actual practice, the technicians of the UN agencies working in Mexico have almost the same status that they would have if Mexico had signed the convention, but this comes about only by the UN agencies making an application for special entry privileges for each technician, and by Mexico responding "as a matter of courtesy" to the request. This is time-consuming and adds to the volume of paper work. Moreover, it is psychologically galling to some of the UN employees. A Mexican employee of one of the UN agencies here in Mexico City--a man who is particularly competent in his field and well known throughout Latin America for his research studies--recently said to me, "If Mexico doesn't soon sign that convention, I think that the UN agencies should withdraw all of their technical assistance." Such a strong opinion would be voiced only by a Mexican. Most of the UN employees are more discreet.

When one talks to Mexican government officials and tries to learn why they have not developed a well-rounded program for the effective use of UN technical assistance, he gets a wide variety of responses, several of which can be summarized as follows: (1) many of the government officials don't know much about the work of the specialized agencies of UN; (2) some of them who have had experience with technical assistance projects have been disappointed in the UN technicians because they were not as helpful as they expected them to be in solving the problems for which their aid was requested; (3) the task of organizing and developing a well-rounded

program of requests for technical assistance, when these requests spring from various agencies of government and are ultimately directed to six or more UN agencies, presents a fundamentally new problem to the executive branch of government, the solution to which is not immediately evident; (4) the job of co-ordinating these requests has been given to the Ministry of Foreign Affairs, which probably knows less about the internal needs and problems of Mexico than any other major agency of government; and (5) some slow and halting progress has probably been made within the last year or two, through the mechanism of an interagency committee, to develop an annual program of requests which the Ministry of Foreign Affairs presents to the Special Representative of the Technical Assistance Board who acts as a co-ordinator for the UN agencies.

Although factors of this type are not without significance in pointing up some of the difficulties involved in developing a well-planned and co-ordinated use of the services of the UN agencies, they probably do not get to the heart of the Mexican situation. There are enough capable Mexicans, both in the UN agencies and in the Mexican government, who are cognizant of both the potentialities and limitations of the technical assistance agencies, and who, at the same time, are sufficiently sophisticated in the arts of public administration to be able to get about what they want, within the limitations of available budgets, from the UN agencies. If Mexico has not tied its major national development programs to the tail of the UN technical assistance kite, but instead is using the UN agencies as sources of assistance for scattered and sometimes peripheral activities, it is because this is in line with an important core of Mexican opinion. It is difficult to call this "public" opinion, because Mexico is still a country in which a large proportion of the population does not have an opinion about many questions of public policy. But the opinion of many technicians, political leaders, teachers, students, and professional people is heavily tinged with a type of nationalism which leads them to take great pride in their past accomplishments, and which makes them loath to accept outside help in solving the country's problems unless it is quite clearly under Mexican auspices and control.

It is much easier, for instance, for Mexicans to accept scholarships and training grants of various kinds to study abroad than it is to have foreign technicians work within Mexico. Moreover, it appears considerably easier for Mexico to accept foreign technicians in physical science fields, particularly where the emphasis is on research work, than in the social sciences and public administration, where there are nearly always policy implications to the work of the foreigner. Then, too, there are certain public programs which are more or less taboo to foreign assistance. For instance, Mexican land reform, and some of the associated activities in agricultural credit, are rather jealously guarded as being so Mexican in nature that few, if any, foreigners could objectively understand them, much less make a contribution to their improvement. Many Mexicans, of course, readily point out that these programs have a political history with skeletons in the closet which

had best be kept only for Mexican scrutiny. Others argue with considerable cogency that practical-minded foreign technicians, who try to work at the grass-roots level in such programs as land reform, agricultural credit, rural extension activities, and primary education, run into many puzzling problems among the tradition-minded Indian and and mestizo families, and that foreigners working in these kinds of programs, even as trainers of Mexicans, sometimes create more problems than they solve, because of the innumerable small cultural conflicts. This general line of reasoning leads its exponents to conclude that if Mexico is to receive technical assistance from foreign sources with respect to these problems, it must come through college courses, seminars, or special training activities well removed from the operating programs.

Still another area which is more or less outside the reach of UN technical assistance programs are studies, surveys, and plans for the utilization of oil and mineral resources. A large part of the Mexican mining industry is owned and operated by foreign capital, and although the oil industry is nationalized many foreign firms and individuals are hired for exploratory work. Yet, it is clear that the government doesn't want too much publicity about foreign influences in the field of natural resources, and would rather have contractual arrangements with private business firms than co-operative programs with UN agencies for studies and exploratory work leading to the development of oil and mineral resources. Private contracts can be more easily controlled and they need receive almost no publicity.

We have, therefore, in Mexico a set of attitudes toward the UN technical assistance programs which are compounded mainly of the following ingredients: (1) great pride, on the part of many technicians and political leaders, in what Mexico has accomplished in developing its economy in past years, coupled with the confidence that Mexicans can successfully handle their future problems without much outside assistance; (2) a long-standing fear of "the collossus of the North" plus an antipathy toward European colonial powers, and a tendency to identify the UN programs with the foreign policies of the United States and the major countries of Western Europe; and (3) the isolation of certain public programs and areas of the economy from foreign scrutiny and influence, partly because the Mexicans don't want foreigners to become too well acquainted with internal politics and partly because they are skeptical of foreign influences in the development and exploitation of their resources.

This background of attitudes provides an excellent stage setting for the Communists and associated "leftists" to maintain a constant drumbeat against anything that can be remotely interpreted as an infringement on national sovereignty. It also provides an opportunity for the ineffective but ambitious bureaucrat in the lower echelons of government to protect his inefficiency from the scrutinizing eyes of foreign advisors. Clearly, these kinds of attitudes fall short of providing the ideal environment in which the UN agencies can demonstrate the full potentialities of their

programs. At the same time, however, the multiplicity of UN agencies, the lack of co-ordination among them, and the absence of mechanisms for developing country programs as distinct from agency programs are hardly conducive to making the most out of the available funds.

ORGANIZATION AND SCOPE OF UN ACTIVITIES

The six United Nations agencies that have technical assistance projects in Mexico are:

UNESCO -- United Nations Educational, Scientific, and Cultural Organization

FAO -- Food and Agriculture Organization

WHO -- World Health Organization

ILO -- International Labor Office

ICAO -- International Civil Aviation Organization

UNTAA -- United Nations Technical Assistance Administration.

Another agency--United Nations Children's Emergency Fund (UNICEF)--though not ordinarily classed as a technical assistance agency has the largest and most important program in Mexico. UNICEF provides economic assistance in the form of supplies and equipment to supplement the technical assistance projects of other agencies. However, its grants are so intimately related to technical assistance projects that the distinction between economic assistance and technical assistance is almost meaningless.

Although there is a complicated headquarters mechanism for co-ordinating the technical assistance work of the specialized agencies, including a Technical Assistance Board (TAB), a Technical Assistance Committee (TAC) of the Economic and Social Council, and an Administrative Committee on Coordination (ACC), the various agencies operate quite separate and independent programs. The Technical Assistance Board (TAB) is probably the most effective of the overhead bodies. It has a chairman appointed by the Secretary General of the UN, and its membership is made up of the directors of the specialized agencies, but TAB meetings are usually attended by lower-ranking staff members. It is purely a co-ordinating agency--a place where the heads of the participating agencies, or their representatives, can agree on general policies. Its main function has been that of allocating funds from the special account for the Expanded Technical Assistance Program among the various specialized agencies. Because of its control of funds, it has been instrumental in standardizing the time and form in which annual requests are made by the agencies for funds from the special account. TAB, however, has little influence on either the type or quality of technical assistance being given a country by the specialized

agencies. Indeed, the agencies are fierce guardians of their prerogatives. In Mexico, their combined impact can hardly be called "a program." It is the result of a series of independent activities under the jurisdiction of seven different UN agencies, each of which is primarily interested in its own work. Each "sells" its own bill of goods.

There is little attention on the part of the UN agencies to the idea that technical assistance might be geared to a comprehensive Mexican development program. This is partly because Mexico does not have a consolidated, or unitary, development program as typified in some nations, for instance, by five-year plans. It is partly because of the skeptical attitudes, described in earlier pages, which many Mexicans have toward technical assistance. But it is also because the predominant thinking in the UN agencies is in terms of filling the specific requests for assistance made by individual government agencies, with little regard to how these fit into broader efforts of the government to develop the country. About the only UN agency capable of analyzing total development needs of a Latin American country, and of suggesting the priorities which should be given different types of technical assistance projects in order to achieve the most efficient use of available funds, is the Economic Commission for Latin America (ECLA). This agency, however, is a regional arm of the Economic Division of the UN and is not responsible for technical assistance programing. ECLA has an area office in Mexico City and a quite capable staff of experts. Some of the ECLA staff members give advice to the UN technical assistance people, and their studies of economic problems and trends may provide important background information for some of the agencies. Yet they are not directly concerned with the planning or administration of the Mexican projects, and some Mexican economists are not too anxious to have ECLA take a leading role in attempting to develop a comprehensive plan for using UN technical assistance.

Some idea of the great diversity of UN projects in Mexico can be had from a summary of the activities planned for 1956. For various reasons, mainly the slowness in recruiting technicians and decisions to delay some of the projects until later dates, the program will not be carried out exactly as planned. However, the significant changes are noted in the following summary:

> UNESCO planned to provide two full-time experts and grant two fellowships to the Institute of Applied Science; provide two full-time experts and one fellowship to an Educational Film Institute; and grant two fellowships in the fields of primary and secondary education. The projected cost of the UNESCO participation was $66,400, and the projects are being carried out about as planned with some delay in the recruitment and replacement of technicians.
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> FAO planned to provide six experts for a total of 42 man-months to act as advisors to the government in the field of forestry; three experts for a total of 22 man-months

to advise on problems of livestock production, pasture improvement, and prevention and control of animal diseases; two experts for a total of 20 months and two six-months' fellowships on problems of land and water utilization and farm machinery; two experts for a total of 15 months to advise on problems of agricultural economics, particularly in methods of regional planning; three experts for a total of 17 months to give advice on ways and means of improving the fishing industry; two experts for a total of six months to work on problems of producing and processing hard fibers, such as abacá, ramie, and kenaf; and one expert for eight months on problems of nutrition. The FAO program for 1956 was originally projected to cost $121,540, but not more than half of this amount will be used. All of the work in fishery production, land and water utilization, and nutrition has been abandoned or delayed for future years, and several of the other projects have been scaled down.

WHO planned to provide six full-time experts to assist the National Malaria Commission, with which UNICEF is also co-operating, in a gigantic nation-wide program to free Mexico from the ravages of malaria. This particular project, financed from funds of The Expanded Technical Assistance Program, is operating on schedule, and WHO's participation will cost about $51,500. In addition to this major project, WHO will use about $55,000 from its regular budget and from funds supplied by the Pan American Sanitary Bureau, for co-operating with various agencies of the Mexican government in a wide variety of activities, including: training courses for nurses; a training center for the study and treatment of venereal diseases; a laboratory to study virus diseases; treatment methods for yellow fever; the teaching of sanitary engineers, sanitary inspectors, and the managers of small water plants for interior towns and villages; an integrated health program for the state of Guanajuato; and several other projects.

ILO is supplying three full-time experts and $10,000 worth of equipment to a Labor Institute for training employees of the Ministry of Labor in industrial safety and health, methods of factory inspection, and administration of the labor laws. This is the only project which ILO has in Mexico at the present time.

UNTAA planned a program for 1956 which was supposed to provide nine experts for a total of 72 man-months and seven fellowships for about six months each. As the program was originally planned the experts were to advise in such fields as national income analysis, administration of ports, industrial development, and fiscal policy. The cost of UNTAA participation was estimated at $80,300. However, because of difficulties in recruiting technicians

and lack of co-operation from the Mexican government in matters pertaining to the administration of ports, the program has been greatly reduced. The expenditures for the year will probably be about half as large as originally planned. The fellowships are being used, and in addition UNTAA has three men working with the Bank of Mexico on problems of national income accounting, economic development, and industrial productivity research. There is also one man advising on port construction problems, and for the last six months of 1956 an economist has been added to study problems of speeding up the development of coastal areas.

In addition to the national projects of the five agencies summarized in the preceding paragraphs which as originally planned would have involved the expenditure of over $400,000, there are two important regional projects headquartered in Mexico which serve most of the Latin American countries. These are the Civil Aviation Training Center operated by ICAO and the Training Center in Fundamental Education operated by UNESCO. The total expenditure for technical assistance by the UN agencies in Mexico, even after allowing for reductions in some of the projects, will run well over a half-million dollars in 1956. Finally, UNICEF is making a contribution in the form of supplies and equipment of three times this amount to the national Malaria Eradication Program.

CASE STUDIES

The foregoing summary provides a rough idea of the size and diversity of the technical assistance activities of the UN agencies in Mexico. It is only, however, by looking at specific projects that we can understand how they came into being, the nature of the problems at which they are aimed, and the methods by which they are having an impact on Mexico. Accordingly, I have selected some of the most important activities for detailed description. The list is not complete, but it gives an insight into a fairly wide variety of situations with which the agencies are coping.

Applied Science Research Institute

In 1951 and 1952, the then President of Mexico, Miguel Alemán, became greatly interested in the experiments in artificial rainmaking which were being carried out in the United States. After being "sold" by one of the U.S. rainmakers, he expressed an interest in establishing a large and costly research institute at the National University to carry on an extensive research program in climatology. This interest apparently stemmed less from a desire to promote fundamental long-term research than from a belief that artificial rainmaking could bring rainfall to some of Mexico's large areas of arid and semiarid lands. However, 1952 was an election year, and not much was done about starting the institute. A project proposal, however, was forwarded to UNESCO for consideration.

Although UNESCO expressed an interest in aiding the Mexican government with the establishment of a new Institute of Research in Applied Science, the objective of which would be "to develop a research program in those sciences of particular interest to agriculture and industries of Mexico with special reference to atmospheric problems," it was not until December 1953 that UNESCO employed an eminent Swedish meteorologist to come to Mexico to draw up the plans for an Institute. He arrived in February 1954, about a year and a half after the Mexican government had sent forward its request to UNESCO for assistance. In the meantime, the present administration headed by President Adolfo Ruiz Cortines had come into power, had found a complicated financial situation hanging over from the preceding administration, and with the general economic situation deteriorating was soon in financial hot water. The original ideas about the size and cost of the new Institute underwent a shrinking process, which brought them more in line with UNESCO's interests and Mexico's potentialities for supporting research.

The plan, therefore, which Professor C.C. Wallen, the UNESCO meteorologist, developed during the 11 months that he spent in Mexico, called for the establishment of a small research institute to which UNESCO would provide the services of two highly qualified experts and a modest amount of funds for scientific equipment during a five-year period of establishment. After this, it is presumed that UNESCO will pull out of the picture and that the National University will be able to carry on with its new Institute. The organization is now in its third year of this 5-year period of establishment. It has excellent space in one of the new buildings on the magnificent campus of the National University, a staff of four men at work, two graduate students studying abroad in preparation for posts in the Institute, and a sizable amount of equipment. It is, therefore, a going concern, though it is lacking a charter, a letterhead, and an identifiable budget.

The Institute operates under the general direction of the Scientific Committee on Research in the National University. The secretary of this committee, a mathematician, is its strongest supporter and its guiding hand, though one of the UNESCO scientists is really acting as director. The most important immediate task facing the Institute is to recruit a permanent Mexican director, expand its staff, and secure a separate budget. Up to the present time, it has been operating on general University funds that have been assigned from time to time. It has, therefore, had little opportunity to plan a long-term program of work. The Institute has asked for a budget of 300,000 pesos per year (about US$24,000) which with the two UNESCO experts would allow it to have a staff of approximately 10 members. Although the plans for the Institute as prepared by the UNESCO expert, as well as the work which it is now doing, are limited almost wholly to problems of meteorology and hydrology (that is, to problems of water and water utilization, with some minor attention being given to problems of air pollution and also to possible uses of solar energy), there has been quite a lot of talk and apparently a strong underlying desire on the part

of the Mexican government to make the Institute largely self-supporting by contract work for private firms. This view of the Institute's functions implies that it would be able to offer its services on a rather wide front to cope with many different types of industrial problems.

As yet, however, there is no real indication that it plans to move into areas of research other than those that relate to meteorological problems, and no progress has been made toward making it self-supporting through services to private firms. It is only, however, within quite recent months that the Institute has been granted adequate space and provided with sufficient equipment to enable it to operate as an independent organization. Moreover, it is not likely to blossom forth as a fully functioning entity until it has some sort of an identifiable and continuing budget and a Mexican director. Although the top-ranking UNESCO expert is probably fully capable of directing the Institute, he is understandably loath to assume more than a minimum of authority. He is anxious for the University to start assuming full responsibility as soon as possible. In the meantime, he views his function as that of training a staff of workers, providing and installing necessary equipment, and keeping the organization moving slowly along its projected course of research. Until the University provides a budget and installs a Mexican director, the Institute, though perhaps doing worthwhile research, will contribute little to the growth of Mexico's economy, and is not likely to obtain contracts from private firms that will start it on the road to becoming a self-supporting organization.

In the meantime, there is an important potential opportunity for the present small staff of the Institute to make a contribution by improving the existing meteorological services in Mexico. One must emphasize, however, that as yet this is only a potential, not an actual, opportunity. The most important agency for meteorological studies in Mexico at the present time is the Servicio Meteorológico Nacional, which is part of the Secretaría de Agricultura. This agency supervises the operations of more than 700 weather stations; it is responsible for the daily weather forcasting; and it publishes the annual and monthly bulletins on climate conditions, including the data on which much research about weather conditions is dependent. Although there are several other agencies which carry on some work in meteorological fields, the Servicio Meteorológico Nacional is the real "weather agency" of Mexico. Yet its operations are severely handicapped by a lack of funds, poorly trained personnel, low salaries with the consequent necessity for many employees to have part-time jobs in addition to those they hold in the Servicio, too few stations to cover the entire country, and a lack of modern forecasting techniques. Moreover, its lack of funds has made it impossible to publish much of the weather data which it has collected over the past several years. It is certainly not unreasonable to believe that the present small staff of the Applied Science Research Institute could be of advisory assistance in improving the work of the Servicio Meteorológico Nacional. Offers of such assistance have been made,

but they have not struck a responsive chord in the Servicio. Apparently, the scientific and technical personnel of the Servicio feels that it is not the lack of knowledge which hamstrings the operations of the agency but rather the lack of funds and the unwillingness of high-level administrators to make the organizational and policy changes that are necessary to attract and hold a well-qualified staff of workers.

We have, therefore, in the Applied Science Research Institute, an example of a technical assistance project, which in the middle of its third year of operations is still struggling to become firmly anchored as a part of the University; has had practically no influence in improving the functioning of the most important government agency in its field of operations, the Servicio Meteorológico Nacional; and has hardly started along the road of applying scientific knowledge to the solution of industrial and agricultural problems. Its experiences, up to the present, can hardly be viewed as an auspicious example of a knowledge-hungary country responding to UN technical assistance. Nevertheless, it may be a quite realistic example of what is involved in trying to bring centers of scientific research into being in underdeveloped countries, where the demands for public funds for all kinds of development activities seem almost unlimited and where fundamental research is a relatively new addition to the national culture. That the Institute staff has been unable to get its foot in the door of the Servicio Meteorológico Nacional, where it might make an immediate and practical contribution to improving weather forecasting techniques, illustrates a point made in an earlier section of this report, namely, that Mexico can accept the foreigner for physical science research work much easier than as an advisor to on-going action programs.

Malaria Eradication Program

In striking contrast to the Applied Science Research Institute, with its emphasis on fundamental research, its small staff, its lack of organizational status and budget, its slowness in attracting official support and in making an impact on either the economy or the functioning of the Mexican government, is the nation-wide Malaria Eradication Program, in which WHO and UNICEF are co-operating with a specially organized National Commission of the Mexican government in an action program to rid Mexico of malaria during the next four years. The Malaria Eradication Program is a large, bold, complicated operation, in which the technical assistance being provided by United Nations agencies is secondary to the financial assistance coming from one of them, UNICEF.

The United Nations Children's Emergency Fund (UNICEF) supplements technical assistance projects that are concerned with the welfare of children by providing supplies and equipment that might not otherwise be available. Its grants are based on plans of operation, which are approved for technical soundness by the appropriate specialized agency of the United Nations. In the case of the Malaria Eradication Program, the World Health Organization (WHO) was not only the principal source of the technical

recommendations undergirding UNICEF's participation, but WHO has also assigned six technical advisors to the program and has agreed to provide a minimum of 19 fellowships for study abroad by Mexican technicians. Insofar as the United Nations are concerned, therefore, this project is a joint effort between UNICEF and WHO, with the former furnishing supplies and equipment and the latter furnishing technical know-how. Much of the latter, incidentally, is based on earlier work of the Pan-American Sanitary Bureau, which is both the Western Hemisphere regional arm of the World Health Organization and the principal "health agency" of the Organization of American States (OAS). Moreover, the Malaria Eradication Program is also participated in by a few U.S. technicians through the Point IV effort. Finally, and of great significance, it represents a major effort on the part of the Mexican government, which is not only shouldering more than half of the financial burden but is also assuming the primary administrative responsibility.

The basic technique of the program is to spray the walls of dwelling houses to a maximum height of 3½ meters with either DDT or dieldrin. A proper solution of the former, when sprayed on walls of houses, will kill mosquitoes for a period of at least six months. Dieldrin, a more expensive insecticide, can kill mosquitoes for at least a year after it has been applied. In essence, therefore, the Malaria Eradication Program is a gigantic house-spraying operation. Some houses will be sprayed twice a year and others once a year, depending in part on the type of insecticide being used and in part on the length of the transmission period of the disease in each particular area. If the period of transmission of the disease in an area is for only five or six months of the year, one properly-timed spraying with DDT will be sufficient. In other areas, where the period of transmission is for longer periods, two sprayings per year will be necessary. The use of dieldrin will be limited mainly to those areas where the period of transmission is year-round but where the roads are so bad that the spraying equipment cannot reach the area except during the dry season.

The program is planned to cover a five-year period ending in 1960. The first year, which began in the fall of 1955 and ended in the first week of September 1956, was devoted to preparatory work, such as the recruitment and training of personnel, purchasing and testing equipment, planning the individual spraying routes, and carrying out spraying operations in a few pilot areas to get the kinks out of the process. The real campaign began on September 6, 1956, with a nation-wide radio and television broadcast by the President and other high functionaries of the government and the United Nations. Although the coverage is not yet nation-wide, the campaign is in full swing. During the years of full coverage it is estimated that 2,740,000 houses will be sprayed annually, about half of them once a year and the other half twice a year, for a total of over 4,000,000 annual sprayings. It is estimated that one man can spray 10 houses per day working 250 days per year. Therefore, about 1,650 spraymen will be needed to accomplish the required number of sprayings each year.

"A special organization for the execution of the campaign has been established by the government. The work will be directed by a five-member National Commission presided over by the Secretary of Health and Welfare. Under the Commission are two main departments--Executive and Evaluation. For field operations the country has been divided into 13 zones, each zone having a chief who reports to the national director of the campaign, a medical officer in charge of the evaluation activities in the zone, and an engineer who will be directly responsible for the field operations. Each zone will have a supply depot and transport workshops. The 13 zones in turn are divided into 83 sectors, each with an officer in charge of operations and an evaluation officer. Each sector will have on the average 5 spraying brigades consisting of a brigade leader and 4 spraymen. In general, each brigade will be responsible for a specific delimited area during the entire campaign with a minimum of moving of brigades from one place to another..."*

According to present estimates, the total cost of the five-year program will be approximately $20,766,000. Of this amount UNICEF will supply $8,400,000, the Mexican government $12,000,000, and the remainder will be represented by the cost of technicians and fellowships supplied by WHO. Practically all of the UNICEF contribution will be represented by supplies and equipment, including such items as: 354 pickup trucks, 195 jeeps, 15 large trucks, 3 station wagons, 5 outboard motors, 1,800 sprayers, 82 microscopes, and nearly 15,000,000 pounds of insecticides. The contributions of the Mexican government will be utilized mainly for paying salaries of personnel and current operating costs other than those represented by insecticides. It is roughly accurate to say that UNICEF will meet the foreign currency costs of the program, while the Mexican government will cover the peso costs.

The campaign consists of two basic stages: (1) the stage of eradication, and (2) the stage of surveillance and prevention of reinfection. The former is supposed to last four years. Then, if the program goes according to plan, spraying will be interrupted, and the stage of surveillance and prevention of reinfection will begin. During this latter stage, the objective of the program will be to discover any cases of malaria, to treat them, and if necessary to carry out repeated sprayings in the area affected. The criterion of achievement of eradication is the absence of any new cases of malaria for three years. When eradication has been achieved, the special malaria organization will be dismantled and the function of permanent surveillance will become a part of the normal operation of the regular public health services.

That this project is coping with an important problem can

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* Quoted from a statement of the Executive Director of UNICEF to the Program Committee requesting an apportionment of funds for the project, dated August 10, 1955.

most easily be shown by another quote from the director of UNICEF:

> "Malaria is one of the most serious diseases in Mexico. During the past five years it has been the third most important cause of death following only diarrhea and enteritis and pulmonary diseases...Geographically, malaria covers approximately three-fourths of the surface of the country. Only two states, Chihuahua and Tlaxcala, and the highest mountain zones and desert are considered to be free of malaria...The average malaria mortality for the country as a whole during the past 5 years has been 90 per 100,000 population...Three-fourths of the productive population in Mexico lives in malarious zones...The eradication of malaria is certain to have dramatic results in terms of human welfare by directly relieving the immediate sufferers of the miseries of the disease as well as by increasing production in presently cultivated areas and opening up new territory to exploitation."*

There is at present every indication that the project will be carried forward with efficiency, although it is still too early to judge on the basis of results achieved. It is noteworthy, however, that this is a nation-wide effort with official backing from the President and other government officials. Months of careful planning preceded the preliminary year of recruiting personnel and the testing of procedures in pilot areas. Even behind this were years of study and local experimental work on the part of doctors, entomologists, and engineers. It is rare, indeed, that one will find a project in which there has been so much careful spadework before operations started.

For those of us interested in transferring knowledge across international boundaries and the ways in which this is done by the UN agencies, there are several points about this Malaria Eradication Program that are worth noting. First, the participation of UN agencies in this project is more through the route of economic assistance than technical assistance. The contribution by UNICEF of the supplies and equipment which will represent practically all of the foreign currency costs of the program is the big and important aspect of the UN participation, and it is improbable that the Mexican government would have undertaken a program of nation-wide scope without this outside help. No doubt, the technicians of WHO may bring some new knowledge and techniques to Mexico about ways and means of eradicating malaria, but the director of WHO in Mexico points to assistance in planning, organization, and administration as being WHO's major contribution to the project. Mexico is not without doctors and engineers, including malariologists, with the technical know-how to operate a program of this type. But the outside financial help plus the constant planning and pushing of the UNICEF and WHO personnel on administrative problems may make the difference between success and failure. Second, one reason why

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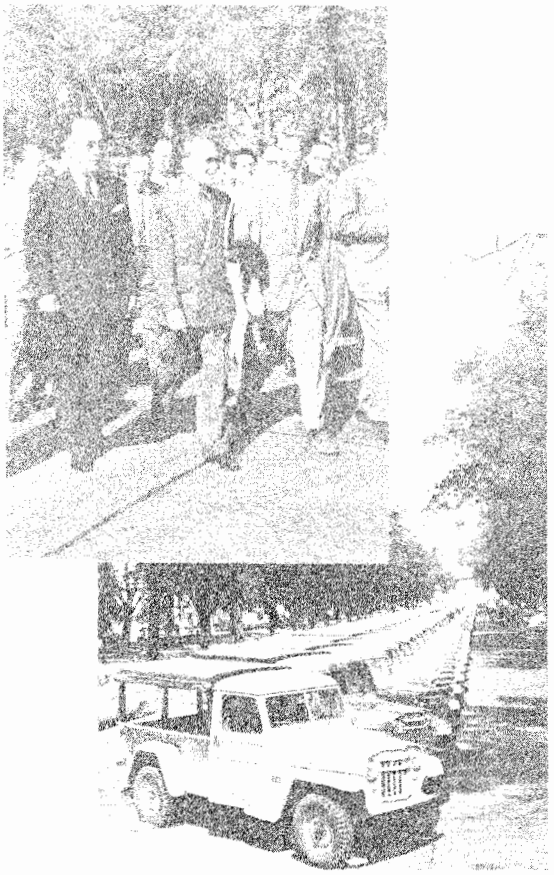
* Ibid.

MEXICO FIGHTS MALARIA

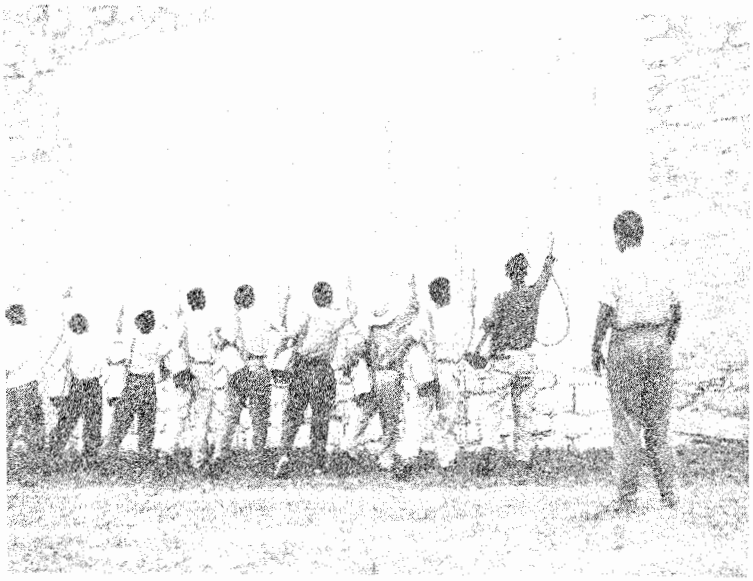


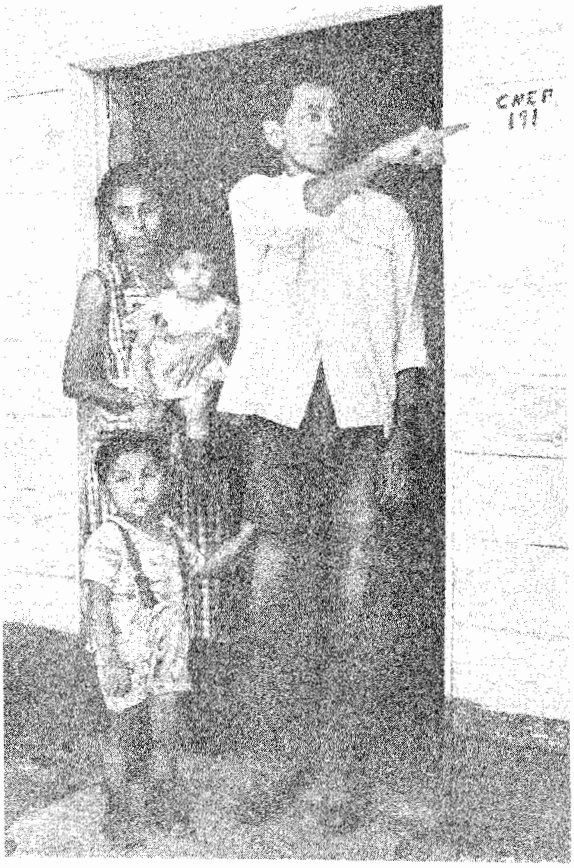
(Left) President Adolfo Ruiz Cortines, flanked by Dr. Ignacio Morones Prieto, Minister of Health, and David R. Hunter, UNICEF representative in Mexico, at a ceremony at which UNICEF presented jeeps, trucks, and spraying equipment to Mexico for its Malaria Eradication Program. The jeeps, reviewed by the President, are parked on the Paseo de la Reforma in Mexico City

(Lower left) Spraymen are thoroughly trained before they are sent into homes

(Below) Householder in the state of Vera Cruz points to the serial number used for keeping records in the spraying campaign

[Photographs courtesy of UNICEF.]





the public health service of Mexico is at the point where, with financial and administrative assistance, it can take on a project of this size and character is precisely because there has been an important flow of medical knowledge into the country for many years in the past. For decades, medicine was one of the few scientific fields which the sons of upper-class families could enter without losing social status. These were the families who could send their children abroad for study. There has been, therefore, a long tradition of medical students and doctors going abroad to study, both to Europe and the United States. Moreover, private foundations in the United States, notably the Rockefeller Foundation, were pioneers in developing international technical assistance programs in the field of medicine and public health. Likewise, many U.S. religious agencies have promoted hospitals and clinics as a part of their missionary effort. It is no reflection on the Mexican medical profession to say that one important reason for their relatively high stage of development today is the past inflow of knowledge from abroad.

Finally, this project illustrates a point that may be applicable to other types of activities, namely, that substantial capital grants combined with technical assistance in organizing and managing public services may be many times more effective in solving some of the immediate problems of underdeveloped countries than the introduction of technical knowledge alone. This is likely to be particularly true in countries such as Mexico, which already has a reasonably well-trained corps of technicians in many fields. Many Mexicans, for instance, often comment about technical assistance programs essentially as follows: "We Mexicans know how to do the things that these agencies are advocating and promoting. Our failure to improve our country as rapidly as we would like is not due so much to our lack of knowledge as it is to our lack of financial resources." Although there may be a grain of false pride in some of these statements, they nevertheless contain a large element of truth. There is a great deal more technical know-how in Mexico than is being harnessed and put to work on the types of activities that are commonly sponsored by the United Nations technical assistance agencies. An important reason for this is that the government is allocating substantial funds to road-building, irrigation developments, improvement of the railroads, and analogous projects that require heavy capital investments. Though the government obviously has a wide latitude of choice in deciding what types of activities it will finance at any given time, there can be little doubt that the willingness of UNICEF to pay the foreign currency costs of the Malaria Eradication Program made it a much more feasible activity for the Mexican government to undertake than if nothing more than technical assistance, in the form of the advice of a few foreign technicians, had been offered.

Training Center in Fundamental Education

About 250 miles west of Mexico City, in the little country town of Pátzcuaro, UNESCO is operating a unique project known as CREFAL. Its name is derived from the first letter of the words

which make up its full title: Centro Regional de Educacion Fundamental para la America Latina (Latin American Regional Center for Fundamental Education). Although the center is located in Mexico it is designed to serve all of the Latin American countries. Since its inauguration in May 1951, it has had students from 16 of the 20 Latin American Republics. It is one of two UNESCO regional training centers for fundamental education. The other, in Egypt, serves the Arab countries of the Middle East.*

The essential characteristic of "fundamental education," as distinguished from other types of education, lies in the fact that it is a type of minimum training directed toward raising the levels of living and expanding the horizons of people who have not had formal schooling. It is primarily a type of rural extension training for adults who have never attended school, or who have had such meager formal training that they are unable to read and write. CREFAL is a center for training teachers and leaders in the fundamental education movement. It is expected that the graduates of CREFAL will return to their home countries equipped to establish national centers of fundamental education, and to assume positions of leadership and guidance in developing national programs of adult training for the millions of poverty-stricken, rural people of Latin America. The center of emphasis in CREFAL is to train students how to find a point of contact with the people of isolated, backward communities, and how to develop in such communities a series of practical projects aimed at improving the level of living of the people.

The students at CREFAL, most of whom are selected by their respective governments, must have finished a technical school, a college, or a normal school, and must have had at least three years of experience in a responsible position such as librarian, county agricultural agent, teacher, nurse, or social worker. Most of the students receive scholarships either from CREFAL, the Organization of American States, or their respective governments. The basic course of resident training covers 19 months. The first eight months are spent mainly in classes and workshops at the center. The second eight months' period is primarily field work in 21 rural communities in the area surrounding Pátzcuaro. This is followed by a one-month vacation, and finally the student spends two months reviewing what he has learned, thinking through its application to his home country, and writing a short thesis. There is a rather close integration between the work in classes, shops, and laboratories and the training in rural communities. The latter is carefully supervised by members of the faculty, of which there are 30 for a student body of 125 to 130.

There are five basic courses that are required of all students:

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* UNESCO has also aided several countries in the development of national centers of fundamental education.

1. Principles of Fundamental Education: This is an introductory course, which is concerned with the objectives, general philosophy, and social bases of fundamental education.

2. Content of Fundamental Education: This is a course in which each student is required to spend six weeks studying in each of the following five specialized fields: (a) health, (b) home life, (c) recreation, (d) rural economy, and (e) general education.

3. Methods of Teaching Literacy: This course is concerned with the specialized techniques of teaching adults how to read and write, and in training the students how to prepare audio-visual material for use in rural communities.

4. Introduction to Research Methods: This course is concerned primarily with teaching the student how to prepare questionnaires, make community surveys, and write reports.

5. Fundamental Education Methods in Communities: This is a course concerned with how the educational process works in communities, the role of the fundamental educator in community life, how he gets started, and the methods he can use for sustaining interest among the families.

In addition to these five basic courses, each student is expected to elect one of the following five fields as his or her area of specialization: health, home life and home economics, recreation, rural economy, and general education. During the period of practical field training in the communities, the students usually work in teams of five, each member of which represents one of these specialities. In addition to the field work, there are workshops, laboratory exercises, and a few classes, so that each member of a team spends approximately half of each day at the center and half in the community to which his team is assigned. Each five-person team, therefore, is not only able to offer a reasonably well-rounded program of community activities to the particular village in which it works, but its members are also continuing their classroom and laboratory studies at the same time that they are gaining practical experience in the rural communities.

The general aim of the CREFAL training program is to develop students who have a sound general background in the elements of fundamental education and, at the same time, sufficient specialization in some particular field so that they can make an effective contribution to the practical problems of poverty-stricken, small farmers. The staff members try to guard against turning out either generalists or specialists. They want their graduates to be a combination of the two. They visualize the

crucial problem in the field of fundamental education as that of "being able to make contact with the community, in terms of the needs and desires of the people, and being able to contribute tangible and worthwhile assistance and guidance to the solution of the community's problems." They feel that many of the specialists in such fields as agriculture, public health, teaching, and recreation who graduate from the ordinary technical school or college are too specialized and impractical to work with the great mass of illiterate, tradition-bound, rural families who constitute a significant proportion of the population of most Latin American countries. The ordinary specialist, they think, is rarely able to make effective contact with the people whom he is trying to serve. Staff members, therefore, put heavy emphasis on teaching students how to think through the problems of the communities in which they receive their practice training, and how to distinguish between what the students think the problems are and what the villagers think. They emphasize that only by understanding the villager's ideas and desires will the technician be able to devise community improvement activities that will have meaning to the families and be most likely to receive the continued support and participation of the members of the community.

Although the intellectual emphasis, both in classes and in the field work, is to steer away from a ready-made package of community activities and instead to work out with the people of each village the kinds of programs in which they are most interested, in actual practice there is a great similarity between the work of the teams in the 21 communities. This stems from the fact that each member of the team usually promotes his particular speciality. The general education worker organizes classes in literacy. The recreation specialist promotes a basketball or volleyball team, encourages group singing, and provides the music--a phonograph with loud-speaker--for dances. The health specialist holds classes, mainly with teen-age girls, in personal hygiene and home sanitation, visits the sick and arranges for them to see a doctor when their ailments appear to be serious. The home-life specialist gives demonstrations in sewing and cooking, and encourages improvements to the dwellings and outbuildings. The agriculturists advise farmers on improved tillage practices, the use of fertilizers, and in some of the villages he promotes poultry enterprises by assisting selected farmers to obtain a bank loan with which to build a poultry house and buy baby chicks and feed. CREFAL mixes the feed and sells it at a price slightly cheaper than it can be obtained from local merchants. The promoting of poultry-raising is a relatively new activity, and grew out of a special arrangement between CREFAL and one of the large banks in the country. The bank furnishes the capital and the CREFAL staff and students provide the technical guidance and supervision of the borrowers. In actual practice, of course, the members of the teams do many more things in the villages than those mentioned above, but they are all of the general nature of those described.

The 21 communities in which CREFAL students get their

FIELD EXPERIENCE IS PART OF THE TRAINING AT CREFAL

Students work in the villages near Pátzcuaro with families descended from the Tarascan Indians...

These villages are learning to read. The other two "R's" may come later, but reading is first

A product of the CREFAL workshop, this poster advertises the advantages of a high hearth over an open fire for cooking

CREFAL students in home economics hold village classes in knitting and sewing. The villagers find that knitting a sweater is somewhat similar to the task of mending fish-nets, an art in which the adults are skilled

[Photographs courtesy of CREFAL.]

field training are typical of thousands of rural villages throughout central Mexico. They are good practice areas for people interested in fundamental education. Some of them are along the shores of Lake Pátzcuaro, or on islands situated in the lake. The families in most such villages earn their living by fishing, although many of them also engage in various types of handicraft work in their homes, and some of them have small areas of agricultural land. Several of the villages are situated in the hills away from the lake, and the families who live in these hill communities depend almost wholly on farming plus some home handicrafts for a livelihood. Most of the people are of Tarascan Indian stock, but there is a heavy mixture of Spanish blood. There are many intrusions of the "modern" way of life in most of the villages. Bus lines, for instance, run through several of them. There is electricity in a few, although a fixture bigger than a 20-watt bulb even in a street light is a bit rare. There are one or two towns within walking distance of most of the villages, which have large markets for handicraft materials, and the general area is one in which tourists provide an important source of income. Many products from the area are hauled to the larger cities of Mexico for sale, and likewise the stores and shops in the larger towns and in some of the villages are stocked with items that come from great distances, as well as with locally-made products.

In a strictly physical sense, relatively few of the villages are seriously isolated. Yet, to a remarkably great extent, most of the villagers live in a "traditional" as distinct from a "modern" culture. Perhaps it is more accurate to say that they are some place between the "traditional" and the "modern" in their way of life. They produce a large part of what they consume in their homes and on their small patches of land, but they also buy quite a few items of common consumption. They are willing to use doctors and learn something about modern ideas of hygiene and sanitation. Yet they also rely on local curanderas, and various types of herbs and home remedies. Some of the men go long distances away from their villages to work for several months at a time--a few have gone to the United States as braceros--but they return to their families, and sleep on a mat in their one- or two-room dirt-floor houses, as if they had never seen any other manner of life. Occasionally, the home-life educator of one of the CREFAL teams will talk a family into building a covered porch or extra room onto the overcrowded house, but sometimes the only occupants of the new addition will be the family sow with her new litter of pigs. Sewing machines and radios are probably the most common modern gadgets found in the villages, but the visitor is more impressed with the extreme poverty of most of the families, the meager resources at hand with which to improve their condition, and the slowness with which changes are being introduced. The CREFAL students who get their basic training in these villages are not likely to return to their home countries with any false beliefs about how rapidly their new knowledge can change the ways of life of the traditional Indian and mestizo communities that make up such a large part of the rural scene in several Latin American countries.

CREFAL receives financial assistance from a large number of sources. In sponsorship and basic control it is a UNESCO project. UNESCO puts in about $200,000 per year, and employs the director, assistant director, and business manager. The government of Mexico donated the land and buildings, provides free communications, and donates about 500,000 pesos (US$40,000) per year. The Organization of American States (OAS) gives $38,000 per year for scholarships. The Food and Agricultural Organization (FAO) provides two faculty members--one in agriculture and the other in co-operatives. The Technical Assistance Administration of the United Nations (UNTAA) also fills two faculty posts, as does the International Labor Office (ITO). Until 1953, the World Health Organization (WHO) also supplied one faculty member. Thus, although the center is under UNESCO supervision, it is really a co-operative venture on the part of several UN agencies.

The work of the center unquestionably meets high professional standards. On the occasion of my visit, in the late spring of 1956, I was much impressed by the qualifications of the faculty, the excellent physical facilities, the alertness and interest of the students, the imaginative training methods in classes, shops, and villages, and by a general atmosphere of wholesome relations between faculty, students, and villagers. Moreover, the people in whom CREFAL graduates are primarily interested constitute a large and important undeveloped resource in most Latin American countries. If the millions of illiterate, poverty-stricken, rural people of Latin America could become efficient producers and full participants in the economic and social life of their countries, the wealth of the region would be immeasurably expanded. In short, the center is doing a good job of training people to work on an important problem.

Nevertheless, the fundamental education concept is faced with a basic problem in Mexico and most other Latin American countries--a problem which springs from the high degree of specialization among government agencies, and the lack of clarity among participating countries and also at CREFAL as to whether it is training students primarily in the methods of working with backward, illiterate rural people or is teaching the technical knowledge of agriculture, public health, and home economics as it should be applied at the farm and village level. For instance, if CREFAL were primarily interested in teaching the methods by which technicians can improve their work with rural families, its students would presumably already be trained in their respective area of specialization before coming to the center. In other words, one group of its students would be agriculturists, another group would be home economists, a third would be public health workers, and a fourth would be rural teachers; each student would be qualified to practice his particular profession in his home country before coming to CREFAL. They would come to CREFAL for the explicit purpose of learning improved techniques and methods of applying their particular branch of knowledge to the problems of rural families. On graduating from CREFAL, such students would return to their home countries to take up posts in the agricultural extension service, the public

health service, or the Ministry of Education. In this context CREFAL would be supplementing the training of the employees of established government agencies.

But this is not the pattern being followed at CREFAL. Most of the students being sent to the center by the participating governments are selected by Ministries of Education. There is little uniformity in their backgrounds of training and experience. Many of them are teachers, or ex-teachers who have risen to some supervisory post. Others, however, are subject-matter specialists in such fields as agricultural extension, public health, or teacher-training work. Few have risen high in their particular profession. After 18 months at CREFAL they become specialists in fundamental education, but there are few if any agencies of government which are promoting fundamental education as an important part of their public responsibilities. The Ministries of Health are interested in medical doctors or sanitary engineers. The Ministries of Agriculture are interested in agricultural and home economics technicians. And even the Ministries of Education don't know quite where the "fundamental educator" fits into their organization. Moreover, there is a suspicion on the part of many old-line bureaucrats that the specialist in fundamental education is a new competitor, and in this context he is sometimes branded as a poorly-trained interloper in areas where only subject matter specialists should be allowed to work.

In many Latin American countries where there is a shortage of trained specialists, and where the needs for various types of rural development or rural welfare programs are great, the type of person who graduates from CREFAL could, no doubt, be of significant service. Indeed, it might well be argued that many of the countries do not have the resources to afford a high degree of specialization among the public servants assigned to improve the levels of living of isolated rural families. The person who combines the elementary skills and knowledge of the agriculturist, public health worker, and rural teacher can aid in the solution of many problems of millions of families. A high degree of specialized skill and knowledge is not necessary, and the training of specialists may be so theoretical or high-powered that they are unable to make effective contact with tradition-minded, rural people. This, however, does not alter the fact that the ministries of government are specialized agencies, and are interested in employing specialists. The result is that the fundamental educator is something of a misfit. According to records maintained by the assistant director of CREFAL, few of the countries who have sent students to the center have made special use of their training after their return. In most cases they are being worked into ongoing programs in agricultural extension, farm credit, and rural education. In the few countries where special national centers of fundamental education have been established, the main emphasis appears to be on training rural teachers how to extend their activities beyond the classroom by working with adults in various types of community projects, or in placing the CREFAL graduates in some out-of-the-way isolated jungle area, where few if any other public services are available.

In Mexico, most of the graduates of CREFAL have found positions in the Cultural Missions of the Ministry of Education or in Rural Welfare Programs of the Ministry of Health. Both of these activities were established in Mexico before CREFAL got under way. They are both aimed at promoting community development programs in isolated rural areas, and have traditionally carried on a type of work similar to that sponsored by the fundamental education movement. They, therefore, require personnel of the type being trained at CREFAL, and offer job opportunities for CREFAL graduates, most of whom appear to be doing well in their work. There is not, however, evidence that CREFAL has basically affected the Mexican programs, either with respect to their objectives or methods. Moreover, Mexico is more advanced in rural welfare work than most other Latin American countries; Mexican governments have long been socially conscious of the needs of the "underdog"; and many Mexicans feel that the location of UNESCO's training center in fundamental education in Mexico was a recognition of Mexico's advanced position in this general field of work. They, therefore, think of Mexico more as a giver of technical assistance, through its participation in CREFAL, than as a receiver of UN aid. It is unlikely, therefore, that CREFAL will make new and significant impacts in Mexico within the foreseeable future.

Civil Aviation Training Center

In Mexico, the work of the International Civil Aviation Organization (ICAO) centers around the operation of a regional training center located in Mexico City. This center was established as a corporate entity by the government of Mexico in 1952. ICAO provides a team of six experts to assist with its administration and operation. The director of the center is the head of the ICAO team, and other members of the team occupy important posts on the staff. At its present levels of operation, the center has 250 to 275 students from 16 Latin American countries, a teaching staff of 35, and a budget for 1956 equivalent to $465,713. Of this amount, $119,383 is supplied by ICAO, $290,402 is supplied by the Mexican government, and $55,928 comes from other sources, mainly fees charged to individuals and companies for the training of students who do not receive scholarships.

All students are admitted to the center through special examinations which are given in numerous Latin American countries, but which are graded by the staff of the center in Mexico City. To be accepted, an applicant must make a satisfactory grade on the examination, must show that he has finished a secondary school and that he is between 18 and 30 years of age for nonflight training or between 18 and 21 for pilot training, and must pass a strict physical examination. It is important to note that student selection is not left to the governments which send students to the center, but is controlled by the director and his staff. Approximately half of the ICAO funds for 1956 are earmarked for scholarships to non-Mexicans, and many Mexican students receive funds for study either from the government's contribution to the center or from other Mexican government agencies. Students making the

highest grades on the examinations are selected for scholarships. Other students who pass the examination, but who do not receive grades high enough to warrant a scholarship, can enter the training center by paying tuition for the courses which they take. The costs for many such students are paid by their respective governments or by private companies with which they have jobs. Regardless, however, of the source of funds, all students must pass the entrance exam and meet the other requirements. The entrance examination is made up of four parts: (1) an intelligence test; (2) a personality test; (3) an aptitude test; and (4) an examination aimed at discovering the applicant's level of knowledge in mathematics and physics. Those students who are selected for scholarships not only receive free tuition but also get 600 pesos (about $48) per month to cover their cost of living. About 50 per cent of the present student body has received such scholarships.

The training activities are divided into three main divisions: a ground school, a mechanics school, and a flight school. The latter offers two-year courses for commericial pilot training and private flying, and has recently put considerable emphasis on agricultural aviation, which teaches pilots how to spray and dust crops. The mechanics school offers courses of 24 months' duration in each of two fields: (1) aircraft and engine mechanics, and (2) radio mechanics. The ground school has several types of courses in such fields as navigation, meteorology, air traffic control, dispatching, and aeronautical communications. Most of these are for 18 months. In the ground school, students usually spend five hours per day in classes, and have two to three hours of homework. In the mechanics school, there are four hours of classwork, two hours of shopwork, and one or two hours of homework. In the primary courses of the flight school, each student has one hour of flying each day, three hours of classes, and two hours of homework. In the advanced courses, the student gets two hours of flight practice daily. The center maintains strict rules with respect to attendance and promptness in meeting assignments. The esprit de corps among staff and students is quite different from that which prevails in many Latin American professional schools and universities, where students attend classes when they please and take examinations over and over again. The center, on the other hand, gives demerits for tardiness, drops students who cut too many classes or do not prepare their homework, and tries by various techniques to install habits of promptness, thoroughness, and reliability with respect to all tasks regardless of how important or how menial they may appear. During the first two years of operation, from 10 to 15 per cent of the students were eliminated during their first few months at the center, because their previous training had not provided sufficient background to enable them to carry the courses satisfactorily, or because they were not adapted to the precise, even if somewhat routine, work involved in aviation. Through better selection methods, the proportion of students dropped from the center had been reduced to about 5 per cent in 1956.

The center received its first students in May 1953.

From that time through December 1955, it graduated 204 students from the following courses: Agricultural Aviation, Air Traffic Control, Aircraft Mechanics, as well as courses for the training of Commercial Pilots, Flight Operations Officers, Private Pilots, Radio Mechanics, and Radio Operators. There are more students in training during 1956 than were graduated during the first three years of operations.

The distribution by countries of the 204 students who had graduated by the end of 1955 was as follows:

Mexico	141
Columbia	6
Costa Rica	12
Ecuador	2
El Salvador	27
Guatemala	4
Honduras	1
Nicaragua	5
Panama	5
Venezuela	1
TOTAL	204

During 1956, students have been added from Bolivia, Chile, Cuba, British Honduras, Peru, and the Dominican Republic.

The training center is obviously serving a good share of the Latin American countries. Moreover, there can be little doubt that it is meeting a real need. Practically all branches of the aviation industry, with the exception of that pertaining to the manufacture of planes, is growing at a rapid pace in most of the Latin American countries. Consequently, there is a constantly expanding demand for skilled employees, and with increased air traffic and growing complexity of planes the level of skill and responsibility tends to rise. Finally, it appears that the professional level of training is high. Although I am a novice in this field of education, from visits to classes and shops, from discussions with staff members and a few students, and from a review of teaching methods I was favorably impressed with the quality of instruction being given the trainees. Most assuredly, the center is not a casual, easygoing place. On the contrary it is a snappy, well-organized institution, with each lesson of each course planned in detail well in advance of the class or shop period. Classes are small, and the teaching and practice equipment appears to be adequate. In the mechanics schools, students are obviously getting a wide variety of practical experience ranging from the rebuilding of wings and fuselages of crashed planes, through repairing motors of various types, to the testing and adjusting of delicate flight instruments. There is a combination of theory and practice which gives one faith in the quality of the maintenance crews of Latin American airlines.

When one asks, "What has ICAO contributed to the training center which the Mexicans could not have done themselves?" he is probably forced to the conclusion that the main ICAO contribution

has not been in bringing new knowledge about airplanes and aviation to Mexico but rather that the ICAO staff has contributed the organization, management, and administrative know-how which makes the center a going concern. Mexico has put up most of the money. Moreover, there are skilled Mexicans in most, if not all, of the fields in which training is being offered at the center. Indeed, approximately 80 per cent of the members of the staff of the center are Mexicans, and several others are Latin Americans. Yet one can be almost sure that without the outside help of the ICAO team and the backing of this international organization, the center would not have been as well organized and managed as it is. We have in this training center an excellent illustration of how an international agency created an administrative environment in which both its own personnel and Mexican technicians can work effectively. This is its major contribution, and it is not of minor importance.

FAO Forestry Project

In contrast to operating research and training centers, or to participating in large action programs, as exemplified by the preceding cases, the work of FAO in Mexico has been largely that of providing experts to act as advisers to government agencies. We have, therefore, in the FAO experience an example of a different method of providing technical assistance from that illustrated in the preceding cases. During the past five years, FAO's most important work in Mexico has been in connection with forestry problems and in a pasture-improvement project. It has also, however, sponsored a short course in statistical methods for agricultural research workers from Mexico and neighboring Central American countries, and has provided several experts to advise Mexican agencies in such diverse fields as pineapple diseases, the production and utilization of hard fibers, the promotion of fish consumption, and methods of regional planning.

The forestry work started in the spring of 1951 when, at the request of the Mexican government, FAO sent a mission of 10 experts from eight different countries to survey the forestry situation in Mexico and make suggestions for its improvement. Eight Mexican technicians were assigned to work with the group, and most members of the team worked in Mexico for the ensuing two years. The group included experts in such fields as: the industrial utilization of forest products, the making of forest inventories, the control of insects and diseases that attack forests, government forest policy pertaining to cutting and reforestation, and the development of a pulp and paper industry.

Numerous reports were written by members of this original team, with recommendations for improving Mexican forests and for strengthening the government agencies responsible for controlling and developing the forest resources of the nation. Several of these reports were subsequently brought together in one volume and published by the Bank of Mexico as a means of making them available for widespread future use. A substantial number of

the reports, however, are now buried in the files of government agencies. In addition to the reports, the mission also made an inventory of the forest resources of one state--the state of Mexico--and in the process trained three Mexican technicians in the technique of taking forest inventories. It also assisted a private firm in the establishment of a modern sawmill of a type that was new to Mexico.

Although the work of the mission was cut short, partly because of a stringency of funds and partly because the then-Secretary of Agriculture was not too happy with the work which the mission was doing, a few FAO experts in forestry have continued to work in Mexico since the departure of the original team. During 1956, for instance, FAO provided two short-term experts--one for three months and the other for nine months--as advisers to the technological institute of the Bank of Mexico to assist in laboratory research on the manufacture of cellulose and high-quality paper. Two other FAO experts have been working for the past two or three years with Nacional Financiera, a government development corporation, on plans for the establishment of a large integrated forestry unit, including a sawmill, a paper factory, and a factory for making chemical cellulose. This work has involved the making of a forest inventory and related studies in a large area where it is proposed to locate the plant, and analyses of the potential market for forest products of various types in Mexico. A third FAO expert assigned to Mexico for only three months has advised on the types of machines and equipment needed for the plant.

It is extremely difficult to evaluate what contribution the FAO forestry experts have made in Mexico, but we can review some of the reactions which the work has created. When the original mission brought its studies to a close in 1953, relations with the Ministry of Agriculture were not good. A substantial number of the Mexican forestry technicians were critical of the mission's work. The FAO men were drawing salaries more than twice as high as those paid Mexican technicians. The Mexican experts assigned to work with members of the mission were not paid sufficient traveling expenses so that they could live at the hotels chosen by FAO men when they were doing field work. Considerable jealousy developed, and criticism of the members of the mission among their Mexican counterparts was evident. Moreover, when one looks at the recommendations in the final mission report, it is quite clear that many of them were of a general nature and included little if any new technical knowledge. The first four of the 15 major recommendations made by the FAO mission give a taste of the type of advice offered the Mexicans in the final summary report. They are as follows:

1. "Mexico must reorganize and strengthen its forestry administration as the first and indispensable means for developing its forest industry.

2. "The forest inventory of the nation must be completed in the shortest possible time.

3. "The activities of the Institute of Forestry Investigations must be expanded in order that it may be possible for it to make a co-ordinated investigation of all aspects of silviculture and forest products...

4. "As a matter of policy, the first duty of the forestry administration should be the protection, rehabilitation, and rational utilization of the natural forests in existence."

These kinds of recommendations may well be excellent examples of how not to provide technical assistance. In the first place, they represent the type of generalized advice which can be given any underdeveloped nation of the world. One hardly needs to visit most of the nations receiving technical assistance to be able to offer these kinds of opinions. Moreover, essentially the same points might be made about fishing, farming, industry, or merchandising. In other words, with respect to practically every branch of the economy of practically every underdeveloped nation, the relevant government agencies need strengthening, there should be a stock-taking of what now exists, research should be stepped up, and government should give attention to husbanding and improving whatever exists before stepping out to build something new. These are platitudes. But what effect do they have? Let's remember that there are two important groups that a mission of the FAO type might influence. One is represented by the professional foresters, of whom there are quite a few in Mexico. Most of them occupy non-policymaking posts, and are employed by the government and a few private firms as expert technicians. The other group is represented by policymaking bureaucrats, such as secretaries and assistant secretaries of ministries and division directors within ministries. The reaction of the first group to the recommendations listed above was about as follows: "Sure, sure! These recommendations are fine. We have been saying this for the past 20 years. But do we need a team of international experts, drawing twice the salaries we get, to come in and give us this kind of advice? Where do we go from here? What do we learn by these kinds of reports?" The policy-making bureaucrats reacted differently. They knew, and had known for years, that the type of things recommended by the international team should be done. They didn't like to be goaded by a group of outside experts, however, particularly when there was little recognition among the recommendations that government funds are limited, that there are a thousand and one demands on the public purse for activities other than forestry improvement, and that the whole government service suffers from low salaries, insecure positions, and the lack of public support for efficient government. They live and work every day of their lives in an environment where the lack of financial resources, the shortage of dedicated and able personnel, and the lack of efficient government procedures and organization bear in on them from all sides. The FAO mission gave them practically no help in how to use their resources more effectively in this kind of an environment. Moreover, it had little to offer as a guide for changing the environment. It said, in effect: "Go out and get yourselves more money for forestry

work. Organize your staffs efficiently, and get to work on what obviously needs to be done." It is not surprising that Mexican forestry policy responded to the advice with an irritated shrug of its shoulders.

It is, however, to the credit of the Mexicans that the more levelheaded of them now say: "It was partly our fault that the forestry mission didn't work out well. We didn't think through exactly what it was we needed, and, therefore, didn't make our request specific enough. This was one of our first experiences with UN technical assistance, and we learned something about how to make future requests. Now that we are asking for just two or three men to help us on quite specific problems, we are getting better results." This incidentally turns up another facet of Mexican views about technical assistance. It is not only in the field of forestry that many of the Mexican technicians see the need for quite highly specialized foreign experts to help them on some small but kinky problem. They are, therefore, quite choosy about the qualifications of technicians being offered by the UN agencies. The forestry technicians working with Nacional Financiera on specific problems related to the establishment of the integrated woodworking plant mentioned earlier are recognized as being of real value. Only one of them is credited with having brought in new knowledge of a type that did not exist in Mexico. The other two are thought of as important supplements to the limited corps of Mexican technicians who are available and qualified to make a contribution to the specific project.

The prevailing Mexican opinion among people interested in forestry is that Mexico can continue to benefit from FAO aid through the use of a few highly skilled short-term experts to work on specific problems; through fellowships for some of the best of the Mexican foresters to study abroad; and from one or two well-qualified men who will stay in Mexico long enough to learn the language and become thoroughly steeped in the forestry problems of the country, after which time they could act as advisers on ways and means of utilizing in the most efficient manner whatever manpower and funds may be available. Knowledgeable Mexicans quite rightly recognize that it will take many years and much painstaking work to develop an efficient forestry agency in the government which can undertake comprehensive research investigations, make a forest inventory of even the most important areas, and build a staff of men who can enforce the laws and regulations pertaining to cutting practices. They are willing to accept FAO assistance if it gives them concrete help with these kinds of problems. They are not the least bit interested, however, in another mission that would write another generalized report.

Although the forestry project has been FAO's major activity in Mexico, some of its other work has been received with more enthusiasm and has probably made more important contributions. The total FAO effort, therefore, should not be judged on the basis of this one project. I selected it for special discussions because it indicates some of the pitfalls and problems facing UN agencies in their

task of transferring knowledge across international boundaries, and because it contains a few points that may be of value to both teachers and students of the multitudinous problems that confront the expert who goes abroad to work in technical assistance programs.

Labor Institute

The International Labor Organization (ILO) has only one project in Mexico at the present time. It is an Institute for training employees of the Ministry of Labor in: (1) Administration of Labor Legislation, (2) Occupational Safety and Health, and (3) Labor Inspection Work. The Institute was organized in February 1956. The director and teaching staff--a total of three people--are ILO employees. In addition, ILO made available $10,000 for equipment. The Mexican government, through the Ministry of Labor, has provided all other facilities and equipment, as well as the costs of administration and the salaries of three technical people who act as assistants to the ILO experts. According to present plans the ILO will continue to provide the director and most of the teaching staff for three to five years, after which time the Mexican government will be expected to assume full responsibility. There are tentative plans for making the Institute a regional center for serving Mexico, Central America, and the Caribbean area, but as yet it serves only Mexico.

There are 30 students in the Institute, each of whom is an employee of the Ministry of Labor, and each was selected by the Ministry to attend the Institute. They are paid their regular salaries while they are going to school. Most of them have had no more than a secondary school education, which in Mexico represents a total of nine years of schooling, although a few have had some practical engineering courses beyond the secondary level. Most of them are mature people with several years of experience, and the training which they receive at the Institute is aimed specifically at the needs of their work.

The school year at the Institute is divided into two terms of four months each. The work of the students is planned on a weekly basis. A typical week involves 4 hours in classes, 6 hours of general group discussion, and 30 hours of visits to factories in and around Mexico City. The group discussions are in the nature of general seminars in which all students participate regardless of their field of specialization, while the classwork is tailored to fit the needs of students in each of the three specialized fields in which the Institute offers training. The visits to factories are also somewhat specialized in the sense that those students interested in safety and health work, for instance, focus their attention on different things during a factory visit from those who are training as labor inspectors.

The classrooms and offices of the Institute take up one floor of an office building near the center of the city. Not much equipment is needed for the type of training which is given, but one is impressed with the newness of the furniture, the adequacy

of the space, and the ample offices of the staff members. On the other hand, on the occasion of my visit to the Institute, I did not come away with the feeling that it was a fountain of new and important ideas. The ILO experts are from other Latin American countries--Ecuador, Cuba, and Costa Rica. They may be well qualified in their special fields, but I don't think it would be very difficult to find Mexicans who could perform equally as well. The willingness of ILO to supply a technical staff for the Institute, as well as funds for equipment, has probably stimulated the Ministry of Labor to start training its employees along lines which it might well have undertaken without outside help. There is without question need for better-trained people in Mexico to help improve factory working conditions, some of which are unbelievably bad. Yet if the Institute becomes a regional center and trains students from neighboring countries, it will perhaps make an even greater contribution in other countries than in Mexico. Since the Institute has as yet not graduated even its first class, it is too early to know what influence it is likely to have. Traditionally, the Mexican labor movement has been highly political in nature, and has had few of the characteristics of a trade union movement. It is conceivable that the Institute, by preparing people to aid the government in enforcing the labor law and improving conditions in factories, is taking an important step in a more mundane but important direction. Only time will tell the story.

Economic Advice to the Bank of Mexico by UNTAA

The United Nations Technical Assistance Administration (UNTAA) is an agency that functions in all of those fields of technical assistance which do not fall within the areas served by FAO, WHO, ICAO, ILO, and UNESCO. It was one of the last of the UN technical assistance agencies to be organized. The major aim of the expanded technical assistance program was that of promoting economic development. This program, however, was not started until 1950, well after the specialized agencies of the UN had been established, and it was immediately recognized that many requests for technical aid would fall outside the functional responsibilities of these agencies. The Secretary General of the UN was, therefore, given the responsibility for filling the gaps. To meet this responsibility he organized UNTAA. In general, it functions in such fields as: transportation and communications, industrial development, public administration, public finance, social welfare, and other areas that relate to economic development which do not fall within the responsibilities of the five specialized agencies.

Although UNTAA has granted several fellowships to Mexicans, assigned an expert to work with the government printing office for a short period, and is now co-operating with the Ministry of Marine on the development of ports and coastal areas, the most significant UNTAA project in Mexico has been the work of two Dutch economists, Dr. Martin Ekker and C.A. Comens, assigned to the Bank of Mexico. These men, both highly qualified in the field of statistics and econometrics, have been particularly well accepted by Mexico's top-ranking economists. They have worked as advisers to the Bank in

the improvement of statistical services, and as informal teachers of Mexican economists in national income analysis, the study of input-output relationships, methods of analyzing monetary flows, and other related problems that are basic to sound national planning. Both men came to Mexico originally for a one-year period, one about the middle of 1954 and the other in January 1955, but the Mexicans were anxious to have them stay longer, and both are now on appointments that will allow them to continue well into 1957.

Dr. Ekker gave a seminar in national income analysis in the winter of 1954-55, which was attended by about 35 Mexican economists from the Bank of Mexico and other government agencies, from which came the first book in Spanish on problems of national income accounting. It is in the nature of an introductory text, and was published by the Bank of Mexico. Subsequently, he gave a series of lectures on economic planning. The talks have been mimeographed and are now used as supplementary reading material in courses at the School of Economics in the National University. Mr. Comens prepared a special confidential report on ways and means of improving Mexico's statistical services which, according to my information, "has gone to the right people to be effective."

After these men had been in Mexico about a year, a special committee was established, with economists from the Bank of Mexico, Nacional Financiera, the Treasury Department, and one or two other government agencies, to make a series of studies relating to the structure of the Mexican economy during the past 15 years and to make national income and productivity projections for the next ten-year period. This is one of the first comprehensive attempts in Mexico at national economic planning. As yet none of this work has been published, but I am informed that it is at the stage where it can be useful in guiding the government's investment decisions. Moreover, several of Mexico's younger economists, who have been assigned by their respective agencies to work as members of the special committee, are receiving valuable training, and it is expected that they will be able to carry the work forward after the two UNTAA specialists leave Mexico.

We have in this project an example--one of the few in Mexico--in which social scientists have been fully and completely accepted by their Mexican counterparts, and have apparently made a worthwhile contribution. It is interesting to note, however, that they have not been directly concerned with questions of public policy. They have not advised the Bank of Mexico on problems of monetary policy, which is its primary responsibility. Instead, they have been concerned with Mexico's statistical services, and with training Mexican economists in some of the newer and more advanced phases of economic analysis. Neither have they been thought of as experts in public administration. Yet the way in which they have worked and the subjects to which they have directed their attention may offer an important clue to the manner in which UN technical assistance can improve the public services of those underdeveloped countries, which are touchy about questions of sovereignty and are skeptical about foreigners injecting themselves

too deeply into problems of national policy. The kind of work which these two experts are doing can have important indirect results on future policies. It is too early to say definitely that this will be true, but the government of Mexico, through general monetary and fiscal policies as well as through its direct investment program, has had, and no doubt will continue to have, an extremely important influence on the rate of Mexico's development--an influence considerably more important than government action has had in many of the well-developed countries of the world. Moreover, in recent years, Mexican government policy has shown an increasing responsiveness to the advice of a small corps of economists who work in a few of its important agencies. The UNTAA experts are working in close association with several of the key members of this group. It is quite possible, therefore, that their efforts to improve Mexican statistics and to teach the economists of a few government agencies how to make better use of some of the newer statistical methods will bear fruit in an important area of public policy.

PERSPECTIVE

An earlier report on Mexico's economic growth (see JGM-4-'56) suggested that a significant part of the rapid rate of expansion in the Mexican economy has arisen from the application of new knowledge to the processes of production. Both public and private managers of resources have learned how to combine them in more productive combinations, and the quality of resources themselves have improved. The latter appears to have been especially important with respect to capital and labor resources. To a substantial extent, improvements in the quality of labor stems from better health, better education, and greater incentives. Improvements in the quality of capital are largely the result of scientific research and the application of new scientific findings to the problems of production. Thus, new knowledge is important both in bringing about more efficient combinations of available resources, and also in improving the quality of new supplies of labor and capital.

The introduction of new knowledge into an underdeveloped country, and the manner in which that new knowledge is accepted and put to use, may be one of the most important factors, therefore, in determining how rapidly economic growth will take place. Since Mexico is a country that has experienced unusually rapid growth during the past 15 to 20 years, it is of some significance to inquire into the ways and means by which new knowledge has been flowing into the country from abroad. One of the great hopes of both privately and publicly financed technical assistance programs is that the underdeveloped countries of the world can import knowledge from abroad, and thus speed up their rate of development. If they can use imported knowledge--knowledge which it took the more productive countries of the world decades to develop and put to use--they have the possibility of improving their situations at a quite rapid rate. Mexico seems to be an example of a country which is accomplishing this objective. In a brief introductory letter to this general

topic of importing knowledge from abroad (see JGM-5-'56), I mentioned some of the main avenues by which new technical knowledge is flowing into Mexico.

The present report has explored the ways in which the specialized agencies of the United Nations are acting as conveyers of new knowledge to Mexico. Before I began this study of the UN activities, I realized that they did not hold the most important place among the various avenues by which technical know-how is entering the country, but because much of the free world is staking high hopes on the UN it appeared appropriate to study the problem carefully. The experience has been a sobering one. It seems apparent that neither Mexico nor the UN agencies are making the most of the available opportunities. There are two major difficulties. First, Mexico has not developed an intergrated program for utilizing the services of the UN agencies. As a nation it is relying on a series of individual requests from individual bureaucrats in individual agencies of government. Although these requests are brought before an interagency committee once a year, where they are sorted out and given a priority rating for submission to the Special Representative of the UN agencies, the process falls short of developing an effective national program for the utilization of UN resources in coping with important problems. Second, the UN agencies are not organized or working together in such a way that they talk, think, plan, and act in terms of a country program as distinct from individual agency programs. The result of these two shortcomings, one of which is Mexican in origin and the other of which stems from improper organization and lack of co-ordination among the UN agencies, is that there are too many organizations dabbling with too many minor problems.

The outstanding exception is the Malaria Eradication Program. It is a UN project which is centering attention on a major problem, and it is tackling this problem with sufficient resources and energy to offer real hope of bringing about its solution. It is significant that this project was preceded by months of careful mutual planning on the part of both UN and Mexican personnel, during which time Mexico put itself in a position, financially, organizationally, and staffwise, to make effective use of WHO and UNICEF assistance. It may also be significant that this program involved substantial capital grants on the part of UNICEF, and that an important contribution of WHO is not so much in narrow fields of technical knowledge as in helping to plan and organize the program. These two elements--the failure of government to allocate sufficient funds to a few major projects for the direct improvement of the health and education of its citizens, and the lack of efficient organization, administration, and management of public activities--are probably more serious handicaps to economic growth and to Mexico's ability to make full use of the resources of the UN agencies than a shortage of purely technical or scientific knowledge.

Several of the projects reviewed in the preceding pages

suggest the advisability of the UN agencies giving serious attention to the administrative framework and problems of management associated with their technical assistance activities. This, to be sure, is quite touchy ground, and it may well be that Mexico would not respond too favorably to attempts on the part of UN to tamper with its administrative machinery of government. Yet we have the examples of the Malaria Eradication Program, where Mexico has itself set up what appears to be an effective mechanism for administering the program, and the regional Civil Aviation Training Center, in which Mexico puts up most of the money but leaves the administration of the project to ICAO. More or less the same thing is true of CREFAL and the Labor Training Institute, although neither of these seems to me to be as imaginatively administered as are the former projects. The sending of one or two UN technicians to work with fellow Mexican technicians, while the policymakers and bureaucrats continue along their merry ways, may have a place in the total technical assistance program of UN, but in a country as well developed as Mexico it is of the utmost importance that the foreign technicians, who act as advisers and trainees of fellow Mexican technicians, be exceptionally well trained and psychologically willing to measure their impact in that intangible, long-term manner which characterizes the college professor working with a small group of graduate students. It may well be that granting scholarships for Mexicans to go abroad to study is a more effective way of providing this type of training. But this is the subject of a subsequent report.

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