

directing council



PAN AMERICAN HEALTH ORGANIZATION

XVII Meeting

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WORLD HEALTH ORGANIZATION



XIX Meeting

Provisional Agenda Item 25

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NUTRITION PROGRAM IN THE AMERICAS

I. Nutrition situation in the Americas

During the last ten years or so, the food situation in Latin America has remained essentially unchanged, and per capita food production still is below its pre-World-War II level in several countries. Improvements in food production, storage, processing and distribution have not been sufficient to keep pace with population increase. While the severity of the situation was barely recognized ten years ago, there is now a widespread awareness of the importance of the food and nutrition problem.

Our knowledge and understanding of the nutrition problems has made significant progress. In many countries surveys were conducted by the Department of Public Health or by the Institute of Nutrition, with special interest in the vulnerable groups. The Nutrition Section of the Office of International Research, National Institutes of Health of the United States, has now completed with the participation of PAHO and INCAP fifteen nationwide nutrition surveys in Latin America. The role of sociological and cultural factors, and the interaction of nutrition and infections, are today better understood.

Protein calorie malnutrition in the 1-5 year age group remains the major nutrition problem. In addition endemic goiter still affects large population groups - although progress has been made in salt iodization as a means to prevent it. Nutritional anemias have a high prevalence, and recent data indicate that vitamin A deficiency is much more widespread than hitherto realized. Nutrition problems in rural areas are of particular importance, as shown in Agenda Item 20.

II. Work done by PAHO

1. Advisory services

From one nutrition officer, who simultaneously acted as Regional Adviser and as Director of INCAP in 1958, the permanent nutrition staff has been increased to nine Advisers in the field and two at Headquarters

- not counting PAHO/WHO staff stationed at INCAP. The appointment of non-medical public health nutritionists has given additional flexibility to the Organization's capacity to provide the Member Governments with services. Refresher seminars on the planning of nutrition programs were organized at INCAP in 1964 and 1965 for the Nutrition Advisers and for 17 Country Representatives.

As a consequence of the greater strength of the nutrition departments in the Ministries of Health of most Latin American countries, specialists in various fields of nutrition were increasingly called upon to serve member countries as short-term consultants. Examples of areas covered are nutritional anemias, endemic goiter, salt iodization, high-protein foods, nutrition education, and program evaluation.

2. Training

From three in 1958, the number of fellowships awarded by PAHO for nutrition reached 26 in 1966, not counting fellows trained at INCAP with funds from other sources. PAHO collaborated with UNICEF and FAO in the organization and conduct of a course on human nutrition for agricultural specialists, held at the Agrarian University, Peru, and of a seminar on nutrition education in Puerto Rico in 1964. A nutrition course for social workers was organized jointly with UNICEF and the Inter-American Children's Institute in Montevideo, Uruguay, in 1963. Other courses given included those conducted with the assistance of PAHO in Belém, Recife, Belo Horizonte, and São Paulo, as well as a Mother and Child Health Course in Puerto Rico.

Nutrition in nursing education was the subject of a technical meeting at INCAP in 1963. Nutrition in medical education was considered at two conferences, the first in Porto Alegre, Brazil, in 1965, and the other organized by the U.S. Agency for International Development, in Washington, in 1966, both with the technical assistance of PAHO. A conference of the Directors of the Schools of Nutrition and Dietetics, held in Caracas, Venezuela, in 1965, proposed a new curriculum, better adapted to regional needs, which has since been adopted by eight out of the 20 such schools in Latin America.

In cooperation with FAO an assessment was made of needs and resources in nutrition in the Caribbean, which led to the establishment of the Caribbean Food and Nutrition Institute in 1967. The principal function of the Institute is to train nutrition workers at all levels for that area.

3. Research

An active program of research was carried out during the ten years under review, with particular emphasis on the practical solution of major nutrition problems in the Hemisphere. In 1963 a scientific group met in Bogotá, Colombia, to discuss research on protein-calorie malnutrition in Latin America, and to plan further work. Technical guidance as well as financial support through grants from PAHO and from external sources were

given to Governments interested in the study of vegetable sources of protein. A collaborative study of nutritional anemias was undertaken by PAHO as part of a world-wide study of this problem being carried out by WHO. A study design was agreed upon at a research coordination meeting in Caracas, Venezuela, in 1964, and an anemia reference and training laboratory was established at the Venezuelan Institute for Scientific Research in 1965.

A collaborative study of endemic goiter and cretinism was initiated in 1962. The investigators met in 1963 and in 1965 under the auspices of PAHO, and an iodine reference and training laboratory was established in Santiago, Chile, in 1965.

4. Applied nutrition

During the ten-year period, 17 countries initiated Applied Nutrition Programs under the joint sponsorship of WHO/PAHO, FAO, and UNICEF. Sixteen countries currently have projects at various stages of development. These projects are located in areas with a total population of over 4 million. Training has been provided for 1,640 health personnel, 9,436 agricultural extension staff and 9,869 elementary school teachers and supervisors.

Since the effectiveness of these programs depends to a large extent on adequate coordination, the progress of each project has varied with the participation of the respective agencies in its development and the resources available for its implementation. There is evidence that no other nutrition program in this Hemisphere has had as much impact in terms of creating awareness of nutritional problems and needs.

In 1966 each of the countries with an Applied Nutrition Program appraised its own project using a detailed evaluation guide. A consultant appointed by WHO, FAO, and UNICEF to evaluate these programs on a world-wide scale reviewed two in this Hemisphere. A seminar was later held in Popayán, Colombia, on the planning and evaluation of these programs under the joint sponsorship of PAHO and FAO. A schedule for annual evaluation of the projects during the next five years was agreed upon during the seminar which will permit appraisal of progress achieved or changes required in the programs.

Salt iodization was actively promoted by the Organization during the decade. A seminar on the subject was held in Salta, Argentina in 1965. Two countries have reported the disappearance of endemic goiter as a public health problem, and many are presently enforcing previous or new legislation. The use of intramuscular iodized oil as a means of prophylaxis in areas where iodized salt is unavailable is currently being studied in Ecuador and Peru.

Nutrition rehabilitation centers are increasingly recognized as an effective and inexpensive means of achieving treatment of the child while educating the mother. They provide an answer to the difficult problem of

how to reach the malnourished child while insuring a satisfactory coverage of the population. The development of such centers was first proposed by PAHO in 1961. Nine countries now operate such centers.

5. INCAP

The Institute expanded considerably during the ten years under review. Its budget rose from US\$274,481 in 1958 to 2,098,232 in 1966 thanks to an increase in the contributions of the Member Countries, the substantial financial participation of PAHO, and a large number of research and training grants, many of them provided by the U.S. National Institutes of Health.

Research on a wide variety of subjects such as the evaluation of nutritional status, the epidemiology and pathology of protein-calorie malnutrition, the methodology of dietary surveys, etc., were published in more than 500 scientific papers. Current research is concentrating on the interrelationships between nutrition and infection, physical growth, mental development, and working capacity. These subjects are closely related to major nutritional problems in Central America and other areas of the Continent. Earlier investigation of protein-rich vegetable mixtures led to the commercial production of INCAPARINA, which began in 1960 and reached 4,662,000 lbs. in 1966.

The number of persons trained at INCAP during the last ten years will reach the 500 mark by the end of 1967. In addition to ad hoc training in laboratory and field work, the Institute provides training through the School of Nutrition and Dietetics, through its yearly 10-week course for physicians started in 1960, and through "CENADAL" an advanced curriculum in public health nutrition for dietitians, also begun in 1960.

Direct advisory services to the Central American countries have received considerable impetus in recent years. A medical officer has been assigned full-time to work with the Governments, a nutrition program planning seminar was held in January 1967, and national plans are being drafted as a result of nation-wide surveys conducted jointly in each of the six countries by INCAP, PAHO and the National Institutes of Health of the U.S.A. A Technical Advisory Committee recently reviewed the results of the six surveys, and it made practical recommendations on the measures to be taken to prevent and correct the various types of malnutrition observed during the surveys.

III. Appraisal of results

An analysis of the work done by PAHO in the field of nutrition in the last ten years shows that it has followed a logical pattern, satisfying the most urgent needs, and following the guidelines proposed by Resolution A2 of the Charter of Punta del Este, the recommendation of the Health Task Force of the Alliance for Progress (Meeting of the Ministers of Health), and Resolution XV of the XVI Pan American Sanitary Conference. The role

of the Organization's advisory and training services has been decisive in the establishment or the strengthening of nutrition sections in the Ministries of Health, and in their staffing by well-trained personnel. At the same time, the Organization assisted the Governments in identifying their nutrition problems and in assessing available and needed resources.

Groundwork has thus been laid for a more comprehensive approach to the problem of malnutrition in many countries.

The capacity of current PAHO services

The Organization's capacity to provide the expanded services that are not only needed, but also requested, has reached a limit. National nutrition units are in the same situation. A relative shortage of adequately trained personnel is a major limiting factor both in national and international programs.

Staff, however, is not the only element lacking. Clear definition of problems, realistic policy-making, and precise programme planning are urgently needed, as is a significant increase in financial resources.

Finally, a series of new factors have recently changed the picture, and pointed to the need to reappraise the role of PAHO.

IV. New factors

1. New awareness

The major factor of change in the definition of food and nutrition problems in Latin America (as in the rest of the world) is the dramatic emergence of wide-spread awareness of these problems on the part of both peoples and Governments. For the past two years, the press of the Hemisphere has been full of articles on the population explosion, on the threat of famine -tragically exemplified by the repeated famines in India- and on the world food problem. In the United States, a White House conference recently issued a strong warning and proposed resolutions on this subject, while the Economic and Social Council of the United Nations is considering a ten-year plan for solving the protein shortage with a financial input of no less than \$300,000,000.

Finally, the Declaration of the Presidents of the Americas puts nutrition among the three top priorities in health, together with the eradication of infectious diseases and the supply of water to rural populations.

2. Progress in technology

Progress in technology in recent years has been considerable. Vegetable protein mixtures, cheap commercial production of amino acids, and fish protein concentrate are present achievements, while genetically

improved crops, petroleum and other "single-cell" protein, are solutions for tomorrow. The solution to nutrition problems has already been modified by these changes, and Governments and international Organizations must adapt themselves to these new conditions.

3. Changes in food distribution programs

There are no more food "surpluses" available in the U.S.A. in the sense that the term was used less than five years ago. The U.S. Government policy towards agriculture has changed and the use of food by Food-For-Peace has been given a new orientation.

At the same time, UNICEF ceased distributing dry skim mil, and the World Food Program emerged from an experimental period, and is now expanding rapidly. Again, the degree of change that large shipments of food from one area to another can bring about is not yet fully understood, but it certainly is an element to which PAHO should adjust as much as the national nutrition and food policies themselves.

4. Strengthening of national units

The existence in most countries of well-qualified nutrition specialists has altered significantly the nature and the meaning of the Organization's advisory services, while at the same time requiring an ever-higher level of qualification on the part of international personnel. As a result recruitment of qualified multi-purpose staff is becoming increasingly difficult, and added reliance is being placed on specialized short-term consultants. This fact in itself changes the nature of our services, and we should analyze this trend.

5. Experience accumulated by the U.N. Specialized Agencies

Advisors are also observers who, through their Organization, communicate to others the experience they have in the country, or countries, where they work. The sum total of experiences gathered by the specialized personnel of the Organization plus the reports of short-term consultants constitute the Organization's experience. This, in turn, is put at the Member Countries' disposal in a continuous flow of information. The importance of this role is sometimes overlooked. The same is true of the other specialized agencies, and through joint meetings and the exchange of publications, the experience of one Organization is made available to the others. In the particular case of nutrition, it has been considerable, to the extent that in a few years PAHO has been able to accumulate experience and knowledge on nutrition in Latin America which is frequently called upon by other international Organizations, private foundations, the National Institutes of Health, the USAID, and others. This amount of experience and of knowledge about Latin American nutrition problems should be more actively used in the planning of national policies and programmes. It should be mentioned here since it is another element which points to the need of reassessing the role of PAHO.

6. Economic development

In some countries economic development has been significant, with a resulting change in the level of living of large population groups, changes in food habits, and changes in the demand for food. In addition, economic development is accompanied by increasing resources for health and for agriculture, which influence the capacity of the country to prevent malnutrition, and consequently the role of PAHO.

V. Need for a new definition of the nutrition policy of PAHO

The present policy was defined about ten years ago. Great progress and expansion followed its application. Quantitatively, the work of PAHO has grown enormously, but qualitatively the nature of the Organization's work has not undergone any major change. While this stability and this continuity in action were key elements to the success which was achieved, PAHO should now ask itself whether further progress can be made with the present staff, the present resources - and above all, with the present concepts.

VI. Proposed program

Introduction

In view of the increasing severity of the nutrition problems in the region, a new and radical approach might well be considered so that a significant impact can be made within the next decade.

Some of the major reasons why world nutrition problems have been difficult to resolve are the complexity of the problem and the many and varied measures that are needed to attack it. At no time has a comprehensive approach been tried nor, for that matter, has any single agency had sufficient resources to provide the necessary leadership for effective coordination and comprehensive program planning.

Responsibility for population nutrition tends to rest with national agricultural agencies so long as food supplies are able to meet demand. Once food requirements exceed supply, however, undernutrition and starvation result and the responsibility for human life and welfare is abruptly transferred to the health agency. This has occurred during the present decade in other continents. Inevitably the health agency finds itself unprepared for this sudden and large responsibility. It is unequipped in terms of planning, manpower, and supplies, and consequently often cannot meet the emergency effectively.

If it is accepted that adequate nutrition is an essential component of good health, and that malnutrition (including undernutrition) is a public health problem, then it is clear that responsibility for population nutrition rests with the health agency. With final responsibility goes the obligation to provide leadership and guidance.

This thesis has often been questioned. It is pointed out that the health agencies cannot be responsible for food production and availability. This is true. However, agricultural agencies in many developing countries have the production of cash crops (often non-food crops) for export as their primary goal. The argument in support of this position is that by earning sufficient foreign currencies through export sales industrial and other capital equipment can be imported, which in turn will give rise to greater employment and improved production, thus bringing about an upward economic spiral. In twenty-five years this theory has not been validated in Latin America. During that time, agricultural land has been pre-empted for export cash crops and foreign currencies have been earned, but at the same time food imports have also had to be progressively increased to meet the rising internal demand. Even with the use of some export earnings to finance these rising food imports to an agricultural area, however, food availability is not adequate to meet needs.

It is time, therefore, to consider the social values as primary priorities and not just await their occurrence as part of the often-delayed general economic development. Along with other social demands, sufficient available food to meet the qualitative and quantitative needs of present and future populations must be assured. The role of health agencies in confronting the problem of malnutrition is not as great quantitatively as the contribution of agriculture or education, but qualitatively the health contribution is the mainspring of the whole movement.

Health agencies must assume the clear responsibility of defining nutrition problems and needs and presenting these to economic and agricultural bodies, so that a national nutrition policy may be established that will progressively reduce the problem of malnutrition, independently of the progress of economic development as a whole. Today, when so many of the infectious diseases have been controlled, it does not require much imagination to foresee that nutrition will and must be a major concern of the health authorities of the future. It is not beyond the bounds of possibility that the effective control of malnutrition and undernutrition in developing areas may contribute more than any other field of health endeavor. Indeed, from an economic point of view, increased emphasis on the production of crops and livestock for domestic consumption may also contribute to development by generating employment and permitting domestic capital accumulation in the form of the savings of large numbers of small farmers.

The new program proposed implies that PAHO should assume leadership in a coordinated and high-level approach to nutrition problems at the national level. This leadership implies a different program emphasis and considerable expansion of resources, if it is to be effective. The program itself will cover four main areas of action. A) specialized advisory services on nutrition policy and program planning, B) data retrieval and analysis unit for evaluation of national nutrition status, C) operations research into implementation of existing knowledge in food technology and education, D) the continuation of preexisting program activities, including general advisory services.

A. Special Advisory Services

Food and nutrition policies have been formulated in some countries of the Hemisphere; however, these have been primarily oriented to agricultural and national economy rather than health. This program area is based on the conviction that the basic pre-requisite for any effective solution to the problem of protein-calorie malnutrition is a sound national nutrition policy oriented towards optimal population health. Currently, local applied nutrition programs lack the central and regional support in terms of food resources, manpower, and services to enable them to progress and expand until national coverage is achieved.

The formulation of a sound nutrition policy is a complex process and requires the close collaboration of many different sectors of government services and private enterprise. For this reason the current advisory services of PAHO are not sufficient in terms of quantity or specialization to undertake policy preparation on a country by country basis. Specially trained advisors assigned to selected countries for a comparatively short time and working exclusively for this purpose is the only realistic approach to this task. These specialized advisors would be provided with a wide range of technical resources especially short-term consultants and the output of data analysis center that will be described later (B). They would be assigned at the highest possible level, either presidential or at the level of the national planning board.

Their assignment would be to assist national personnel to identify, collect, and analyze all necessary data from public, private and international sectors to enable them to formulate a realistic policy for the control of malnutrition. This policy would represent a scientific rational approach to resolving the national nutrition problems within a specific period of time and would have the characteristics of a national campaign. It would include stated goals, assessment of the problem, definition of needs, identification of resources, current economic planning affecting food availability, assessment of present and future needs and of potential resources to meet them. This policy would be given official approval and then would be translated into planning for realistic and systematic program application.

As a subsequent step the program would be developed on a pilot scale at the local level, applying all of the concepts and procedures detailed in the national policy and program. In the case of protein-calorie malnutrition, a source of cheap protein would be identified for use on a national scale to supplement existing intake especially in vulnerable groups. The logistical, distribution and education systems to be used and the means of evaluation will be carefully tested to ensure that the national plan can be successfully extended to the rest of the country. Such pilot testing could usefully be carried out in areas where U.N. applied nutrition programs are already under way.

To assist the specialized adviser, a public health nutritionist with planning experience would also be appointed by PASB. This assignment would continue through the period of pilot application and would have a 4-5 year term.

In order to prepare special advisers for this task a training center would be set up to provide a formal course in policy and programme planning. This Center would be organized and staffed by short-term consultants of PASB and other international agencies. The first course would be specifically to train international advisers prior to country assignment. It would be repeated on an ad hoc basis to train national counterparts and more international staff as required. It is stressed that this would be a multidisciplinary training center and would depend on a broad range of technical personnel from the different sectors involved in approaching nutrition problems. The experience of the FAO and other specialized agencies would be fully utilized in this context.

B. Data Retrieval and Analysis Center

The multidisciplinary nature of nutrition problems and, consequently, approaches for their solution has been repeatedly stressed. One of the major requirements for realistic and comprehensive planning of nutrition policy and programs is the availability of detailed and current information on conditions in all sectors related to human nutrition. Thus agricultural policy and production figures, food storage and transportation statistics, export-import data, food prices, consumption patterns, education coverage, morbidity and mortality from nutrition disease, growth and development patterns all contribute basic information to the establishment of an objective appraisal or "diagnosis" of nutrition conditions in a given country. Today the greater part of these data is readily available from the corresponding sector at the national level and in some cases at the international level. At no point, however, is all of this information correlated so that a nutrition profile of the country can be described which will form the basis of realistic policy and program planning.

More than in any other field it is vital that comprehensive information be assembled regarding all elements in the food chain from production to consumption. The omission of one element in the planning of nutrition programs is sufficient to invalidate the entire proposal. In the past this type of omission has been the reason for failure of the best intentioned programs, national, international and bilateral.

It is proposed therefore that PAHO take on the responsibility of setting up a nutrition data retrieval and analysis center for this Hemisphere. This operation would be carried out in the closest cooperation with international and bilateral agencies working in the sectors involved. The outcome of such a center would be the production of current and comprehensive descriptions of the nutritional status in each Member Country. This information would serve primarily as a reliable guide for the planning sections of Member Governments and a useful resource for international

staff advising these units. It would be invaluable material for international and regional development banks and for bilateral assistance program especially those interested in food and nutrition.

The Center would be staffed by professional and technical assistant personnel and would make full use of the shared computer facilities of PAHO/OAS. Initially information sources would be selected and verified by visits to each country by the center's staff. Once reliable and ongoing sources were identified then these would be requested by mail on a regular basis. Occasional and non-repetitive data such as from special surveys would be specifically requested through country representatives of PAHO.

Reports would be published and circulated on a regional and national basis following a regular rotation country by country. In this manner a current report would be available for each country every 3-5 years. These would include analysis of information, full bibliography and references and also a summary interpretation of changes, problems and needs. It would be made available free of charge to national governments and international agencies and at production cost to all others.

The resources required for this center would include professional and assistant technical personnel and travel funds, office space and equipment, computer time, and publication and distribution facilities.

C. Applied Research

To-day a considerable fund of basic knowledge of nutrition is at the disposal of health agencies throughout the world. Most of this knowledge, however, has originally been applied in technologically advanced areas. In consequence, methods available for applying knowledge today are often totally inadequate for resolving problems in other areas of varying social and economic development. Funds have been available in the past mainly for research contributing to further fundamental knowledge or to its application under modern technological conditions. Funds have been consistently lacking to carry out "applied" research to explore and develop new methods to apply nutrition science in non-technological societies.

So far, INCAP has carried out some of the most important work of this kind in its development of INCAPARINA and the adaptation of high lysine corn for cultivation in the tropics. PAHO is currently evaluating the use of iodized oil to circumvent the economic and administrative problems of salt iodization for goitre prophylaxis. It is of great importance to the new program orientation proposed, that this type of research be intensified. New food sources, both traditional and unusual must continue to receive increasing attention. The major burden for the development of new protein sources has been assumed by UNICEF to date, though WHO/PAHO

have assisted in monitoring the clinical trials of new preparations. If it is accepted that new food sources could make a major contribution, and if new foods, like drugs, are the major responsibility of the health agencies, the PAHO should be prepared to make a major investment in this field, both in terms of personnel and grant support to local investigators.

The rapidity of social change in Latin America is one of the remarkable phenomena of this century. The change in the traditional social structure, rapid urbanization and other factors, have produced major changes in individual living patterns, including diet. The change from traditional subsistence economy to a cash economy where new foods are available for purchase, is confusing and economically wasteful for many individuals. Intensive research into the social anthropological determinants of changing dietary patterns is urgently required.

Finally, continued research is needed to evaluate the role of nutrition in public health. As infectious diseases are effectively controlled, the disease pattern of mankind progressively changes. On a relative and absolute scale, the science of nutrition and the understanding of nutrition disease will become an ever increasing area of health research and practice. Not only does this apply to undernutrition, but also to overnutrition, to degenerative disease and to the process of ageing. A forward looking health service must be able to evaluate by cost effectiveness studies the degree to which manpower and funds should be devoted to nutrition. PAHO should be in a position to give active support, both by advisers and grants for this type of work.

The research program should have three main components: i) advisory services provided by specialized staff personnel, ii) funds for direct support of specific research projects of direct interest to the Organization's program, iii) assistance to national research workers to obtain funds from international and private sources; this latter function is currently being carried out by the Office of Research Coordination.

The specialized staff should be centrally located and include a public health physician and a nutritionist with research experience, a food technologist and a social anthropologist. These advisers would be responsible for assessing research needs, planning research projects, selecting and advising suitable research scientists to carry out projects, preparing publications on findings and initiating pilot projects to apply results. The sources of funds would be derived from PAHO research budget and from outside granting agencies. In general, the work would be conducted by research workers of recognized institutions of member governments.

D. Existing Program

The new program areas previously described in no way alter the need for continuation of the pre-existing program. The new areas represent a

major expansion of nutrition activities that will be based on the results of earlier program achievements, and which will provide the necessary central policy and programme planning that will enable the local programmes to expand horizontally and take on a permanent character. General advisory services will continue to be required, as will training of professional level public health workers. The promotion and development of applied nutrition programs and of nutrition rehabilitation projects remain essential components of the health and nutrition program at the local level. It is expected that the existing program would continue as a complement and support to the new program and that it would grow proportionally with the general rate of development of other PAHO programs.

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ADDENDUM I
27 September 1967
ORIGINAL: ENGLISH

NUTRITION PROGRAM IN THE AMERICAS

SUMMARY OF ACTIVITIES OF THE
INSTITUTE OF NUTRITION OF CENTRAL AMERICA AND PANAMA (INCAP)
OUTSIDE THE CENTRAL AMERICA AREA

INTRODUCTION

In addition to its direct responsibilities towards its six member countries, and in order to adequately fulfill them, the INCAP operates as a research and training center in the field of human nutrition.

The research activities of the Institute are oriented towards the study of the nutritional problems of the area and the finding of practical means for their solution. However, most of the problems and conditions inherent to Central America are not unique for the region but, indeed, are common or very similar to those prevailing in most of the Latin American countries as well as in other large areas of the world. Therefore, the research activities of the INCAP are of value not only to its member countries but also to all of the other regions that can benefit from them. As exemplified in the following paragraphs this has already been the case in many instances. It is also the reason why the training programs of INCAP have such a large demand and are utilized by students that arrive to the Institute from many countries outside the Central American region specifically for this purpose.

It is of course difficult, and in some areas impossible, to quantify the utilization of the INCAP's services by individual countries or regions. One of the main obstacles lies in the fact that although such services are available, its utilization by different countries may vary in relation to their interest and other factors inherent to the countries themselves. Another limitation is the subjectivity in evaluating the utilization of services both in the research and training fields. In the case of research, for instance, it is not always apparent when basic information obtained from studies in one place is utilized to develop further work on the same or similar fields in other places. As far as training is concerned, the number of students that have participated in these programs is not enough to quantitate benefits derived from it, because the training of one key

person may be of greater value to a given country than the training of ten persons with lower responsibilities or less capability for applying the knowledge and experience acquired.

In spite of this situation, and recognizing the inevitable limitations, an attempt is made to illustrate, as far as possible quantitatively, the utilization of the INCAP's contribution outside the area of Central America and Panama.

A. Research

A brief outline of the main areas of research in which the Institute has worked or is engaged in at present will give a basic idea of the importance of this work to non-member countries. These are:

1. Methodology for the diagnosis of nutritional problems in population groups.
2. Epidemiology and methods for prevention and treatment of the following nutritional problems:
 - a) Protein-calorie malnutrition
 - b) Vitamin A deficiency
 - c) Endemic goiter
3. Relationships between infectious diseases and nutritional deficiencies.
4. Etiology of the anemias frequently found in malnourished populations.
5. Etiology of diarrheal diseases in children and their relationship with nutrition.
6. Effects of chronic states of malnutrition on mortality, morbidity, growth and development of children and on the working capacity of adults.
7. Epidemiology of atherosclerosis, with special emphasis on the role of dietary factors.
8. Methods for improvement of the nutritional value of conventional foods.
9. Methods for more efficient production and/or utilization of foods of high nutritive value.

10. Development of non-conventional foods that could be practical sources of essential nutrients which are deficient in the diets of large population groups.

The information obtained from these studies is made known through publications in scientific journals of wide distribution in both Spanish and English. The number of such papers published to date is as follows:

Spanish	393
English	426

In addition, special monographs and many other technical publications have also been and continue to be amply distributed.

The results of the INCAP's research work and its total experience are also reported at national and international meetings to which staff members are continuously invited to participate. Annex I includes examples of some important international meetings held from January 1965 to June 1967, where scientists from the Institution have presented their work.

The Institute's staff members also contribute their experience as members of important technical committees, the work of which has considerable international repercussions. The following can be mentioned:

Dr. Guillermo Arroyave - Member, WHO Expert Advisory
Panel on Nutrition for a
period of five years 1962-1967

Member, WHO Expert Committee
on Protein Requirements (October) 1963

Member, Committee on Dietary
Allowances, Food and Nutrition
Board of the National Academy
of Sciences 1965

Member of the Joint FAO/WHO
Expert Group on Requirements
of Vitamin A, Thiamine, Ribo-
flavine and Niacin 1965

Member, Committee on Procedures
for Appraisal of Protein-Calorie
Malnutrition of the International
Union of Nutritional Sciences
(for three years) 1967-1970

Dr. Moisés Béhar	Related Director of the Gorgas Memorial Institute of Tropical and Preventive Medicine Incorporated, Canal Zone, Panama	1966
	Member of the Commission on Operational Programs and Chairman of the Committee on Nutrition Surveys of the International Union of Nutritional Sciences (for a three-year term)	1967-1970
Miss Marina Flores	Member, FAO Expert Committee for Radioactive Materials in Food and Agriculture. Rome, Italy	1961
Dr. Miguel A. Guzmán	Chairman, Committee for the Organization of the Latin American Society of Nutrition	1962-1964
	Member, Regional Advisory Committee on Health Statistics (American Hemisphere)	1966
Dr. Carlos Tejada	Secretary General, Latin American Society of Pathologists and Bacteriologists	1961
	Member of the Commission on Nutrition Education and Training, and Chairman of the Committee on Schools of Food Science, Home Economics and Dietetics of the International Union of Nutritional Sciences (for a three-year term)	1967-1970
Dr. Fernando Viteri	Member of the WHO/PAHO Scientific Group on Nutritional Anemias (Caracas Meeting, Sept.)	1963
	President, Atomic Energy Commission, Guatemala	1963-1965
	Member of PAHO's Scientific Group on Protein-Calorie Malnutrition (Bogota Meeting, March)	1964
	Member of the WHO/FAO/UNICEF Protein Advisory Group (Geneva Meeting, August)	1966

Furthermore, INCAP's professionals have teaching responsibilities in universities outside the area, mainly in the U.S.A. or in other international training programs. For example:

Dr. Guillermo Arroyave	Visiting Associate Professor (9 months), Massachusetts Institute of Technology, Department of Nutrition and Food Science	1962-1963
	Visiting Lecturer, Department of Nutrition and Food Science, Massachusetts Institute of Technology	1966-1967
Dr. Moisés Béhar	Adjunct Assistant Professor of Public Health Nutrition, Columbia University	1962-
	Visiting Professor of Public Health Administration, Tulane University School of Public Health	1964-
	Visiting Lecturer, Department of Nutrition and Food Science, Massachusetts Institute of Technology	1966-1967
Dr. Ricardo Bressani	Graduate Research Assistant, Biochemical Research, Purdue University, Lafayette, Indiana	1953-1956
	Visiting Associate Professor (9 months), Massachusetts Institute of Technology, Depart- ment of Nutrition and Food Science	1963-1964
	Visiting Lecturer, Department of Nutrition and Food Science, Massachusetts Institute of Technology	1967-1968
Dr. Miguel A. Guzmán	Visiting Associate Professor of Biostatistics, Massachusetts Institute of Technology, Depart- ment of Nutrition and Food Science	1964-1965
	Visiting Lecturer, Department of Nutrition and Food Science, Massachusetts Institute of Technology	1967-1968

Dr. José Méndez	Visiting Associate Professor, Massachusetts Institute of Technology, Department of Nutrition and Food Science	1965-1966
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Some of them are members of the editorial boards of scientific journals:

Dr. Guillermo Arroyave	Assistant Editor of the scientific journal <u>Archivos Latinoamericanos de Nutrición</u>	1966-
Dr. Moisés Béhar	Member of the Editorial Board of the <u>Journal of Clinical Pediatrics</u>	1967-
	Contributing Editor to the <u>Journal of Tropical Pediatrics</u> (since its foundation)	1955-
Miss Raquel Flores	Adviser in Scientific Communications, <u>Archivos Latinoamericanos de Nutrición</u>	1966-
Dr. Carlos Tejada	Member of the Editorial Board of the <u>Journal of Experimental and Molecular Pathology</u> (since its foundation)	1962-
	Member of the Editorial Board of the <u>Journal of Atherosclerosis Research</u> (since its foundation)	1964-

The following staff members have also served as consultants to other areas of the world:

Dr. Guillermo Arroyave	WHO Consultant for the Assessment of Nutritional Status of Population Groups	1962
Dr. Moisés Béhar	WHO Special Consultant in Kwashiorkor (carried out survey on severe protein malnutrition in Central America, November-December)	1951

	Special Short-term Consultant to the Office of International Research (OIR) assigned to U.S. Naval Medical Research Unit No. 2 (NAMRU-2), in Taipei, Taiwan, Republic of China, and for the Food and Nutrition Research Center (FNRC) in Manila, Philippines	1965
Miss Marina Flores	Nutritionist Expert assigned by the Swedish International Agency (NIB) to organize the field work in Dietary Studies for the Children Nutrition Unit of the Swedish Project in Ethiopia	1963
Dr. Miguel A. Guzmán	E.I. Du Pont de Nemours Special Statistical Consultant for the "Instituto de Investigaciones Clínicas y Médicas" in Madrid, Spain	1961
	U.S. Department of Agriculture Special Statistical Consultant for the same Institute	1962
Dr. Carlos Tejada	WHO Short-term Consultant for the Study of Geographical Pathology of Atherosclerosis in Europe	1960
	WHO Consultant in Cardiovascular Diseases	1962-1964
	Consultant in Pathology of the Louisiana State University Medical Center Institute of International Medicine	1967
Dr. Fernando Viteri	OIR Short-term Special Consultant to Nutritional Studies conducted in Jerusalem, Jordan	1966

As specific examples of the utilization of some of the INCAP's research work outside Central America and Panama, the following can be mentioned:

1. Application of methodology developed at the INCAP for the conduct of nutritional surveys in many countries of the world.

2. Utilization of the methods recommended by the INCAP for the treatment of severe forms of protein-calorie malnutrition (kwashiorkor and marasmus) and for prevention of these conditions.

3. Application of the method for iodizing crude moist salt with potassium iodate, instead of potassium iodide, as a practical and effective measure for the prevention and prophylaxis of endemic goiter in areas where common kitchen and table salt is not refined.

4. Utilization of the vegetable mixtures developed by the INCAP, either as such, or by applying its principle to the development of similar mixtures. In this regard, it should be stressed that all of these mixtures follow closely the orientation that the INCAP has already proved to be applicable: the usage of available low-cost raw materials - which frequently are non-conventional sources of nutrients - for the preparation of foods adapted to the dietary habits and buying capacity of the populations for whom they are intended and which can correct prevailing nutritional deficiencies.

Because of its particular importance and actuality, and because it is relatively easier to quantify its impact throughout the world, a more detailed description is given on the contribution of the INCAP in this program.

As early as 1957, the INCAP staff started reporting on their basic research activities leading to the development of feasible low-cost protein-rich vegetable mixtures. This was done through scientific publications, wide discussions at various international scientific meetings and also through the press. This early research stimulated much of the initial interest in the possibility of utilizing vegetable sources of proteins in acceptable mixtures suitable for commercial application as a device for relieving malnutrition in the developing countries. Since those first publications, the Institute has been called on to render many services to Governments, private and public organizations and interested individuals in many countries other than those of Central America and Panama.

Prior to 1959, information, mostly through correspondence, was provided to interested persons outside the INCAP area. Additional papers were also published reporting on the biological and clinical evaluation of the experimental mixtures which later became known as Incaparina. With the initiation of the INCAP's program for the commercial application of the mixtures in 1960, further interest was generated in the concept through both popular and scientific reports which received wide circulation.

In that year, precisely, several technical and popular articles were published on the subject of vegetable mixtures and the product was discussed extensively in various scientific meetings. During the Annual Meeting of the Directing Council of the Pan American Health Organization in Havana, September, 1960, all participating Governments resolved to support the production and distribution of vegetable protein mixtures in their respective countries. As Incaparina was then the only product ready for commercial application, this action by the PAHO greatly stimulated interest throughout the Western Hemisphere and also in other areas of the world. This interest has not only continued, but has intensified as the magnitude of the need for such mixtures has grown.

Naturally, all of the INCAP departments and staff have been involved in carrying out the promotional aspects of this program, through consultation with interested parties, preparation of articles for publication, oral presentations, etc. However, as the load increased during 1960, the part-time services of an economic consultant to assist with the program were obtained. In 1961, this became a full-time project with the addition of the Economic-Industrial Adviser to the INCAP professional staff. Primary responsibility for the commercial application of the INCAP vegetable mixtures has rested with this staff member, and it is estimated that 50% of his time has been devoted since then to work outside of the INCAP area.

For purposes of analysis the services rendered to Governments, organizations and individuals outside Central America have been classified according to the following detail.

Correspondence resulting from inquiries - This has ranged from a single letter providing the basic data requested, to many cases where a long series of correspondence has continued over many months. Frequently, the latter type of correspondence has resulted when an interested party desires to make a complete study of the applicability of the vegetable mixtures to a particular region or country. In some cases this has later resulted in visits of the interested persons to the INCAP, trips of the Economic-Industrial Adviser to the country, and possibly lengthy negotiations that eventually have materialized in the production and distribution of the product in the country. Summarizing, since July, 1958 until July, 1967, correspondence with regard to Incaparina has been conducted with 1,033 individuals from 49 countries all over the world (745 from 22 countries of the Western Hemisphere, exclusive of the INCAP area, and 288 individuals of 27 countries outside the Western Hemisphere) (including Africa, Australia, Austria, Belgium, Czechoslovakia, France, French Guinea, Germany, Great Britain, Greece, India, Indonesia, Israel, Italy, Japan, Korea, New Guinea, The Netherlands, Norway, Pakistan, Philippines, Portugal, Spain, Switzerland, Turkey, South Vietnam and Yugoslavia).

Consulting Services at the INCAP - A total of 119 persons from 18 countries outside Central America and Panama visited the Institution for consultation regarding the commercial application of the INCAP's

vegetable mixtures: 112 of these contacts were from the Western Hemisphere, and 7 from other parts of the world (Africa, Germany, Great Britain, Italy and Switzerland).

These consultations ranged from brief visits of a day or less, to extended periods of several days. Frequently the longer visits required the full-time attention of the Economic-Industrial Adviser and other INCAP professional staff as well as the need to take the visitor to confer with the Guatemalan Incaparina producer and trips to various sections of the country in order to evaluate the marketing and use of the product. Therefore, it seems reasonable to assign a cost figure of \$100.00 to each of these consultations at the INCAP, making a total cost, for this service, of \$11,900, as follows: \$11,200 within the Western Hemisphere, and \$700 outside of the Hemisphere.

Consultation in the Countries - Since 1961 the Economic-Industrial Adviser has been called upon to make trips to Colombia, Venezuela, Peru, Mexico, the West Indies and the United States, in addition to his travel within the area. With the exception of Peru and the West Indies more than one trip has been required in order to meet the needs of the Incaparina program as it has developed therein. The cost, in terms of travel and living expenses, by country, during the period from June 1961 to July 1963, was as follows: Western Hemisphere, exclusive of the INCAP area, \$7,082, outside the Western Hemisphere, \$1,118, that is, a total of \$8,200.

Analysis of Raw Materials - The INCAP does not charge authorized Incaparina producers for the various analyses which must be made to control the quality of the vegetable mixtures. Also, no charge is made for other laboratory services of this type which are provided to assist Governments and others interested in the program, to determine if suitable ingredients are available locally. The total cost of laboratory analysis of Incaparina and raw material performed at the INCAP for use outside the Central America area (at \$75.00 per sample) represents a total of \$5,775.00 (for a total of 77 analyses).

Informative Materials - Because of the volume of inquiries received from English-speaking countries, it was decided in 1962 to prepare and print a general booklet describing the development and commercial application of the vegetable mixtures. This booklet was revised and reprinted in May, 1965. In terms of staff time, original printing and reprinting of the booklet, this represents an investment of about \$1,000, none of which could be charged as a service to the Spanish-speaking INCAP member countries. It is estimated that about 75% of the Spanish version of this booklet, which also cost about \$1,000, has been distributed in the Western Hemisphere outside the Central American Area.

The following summary illustrates better the estimated costs of this program:

Type of Service rendered	Western Hemisphere (exclusive of the INCAP's area)	Outside the Western Hemisphere	Total
Consulting services at the INCAP	\$11,200	\$ 700	\$11,900
Consulting services in the countries	7,082	1,118	8,200
Analysis of Incaparina and raw materials	5,625	150	5,775
Informative materials	750	1,000	1,750
Estimated cost of 50% plus 15% administrative costs of the Adviser's time for 6 years and a half	35,000	9,000	44,000
Total estimated cost	\$59,657	\$11,968	\$71,625

Based on this cost estimate the direct services being rendered by the INCAP to countries outside the Central America area with respect to protein-rich vegetable mixtures, represent an annual cost of about \$11,950, or slightly in excess of \$995 per month at the current rate of operations. Within the Western Hemisphere, this represents an annual cost of approximately \$9,950 and \$1,995 outside the Western Hemisphere.

The INCAP's pioneering efforts have obviously been an important factor in the development of similar mixtures now underway in many countries throughout the world. Work presently underway in India, Asia and Africa constitutes an example of the use made outside the Western Hemisphere of the Institute's work in both basic research and the commercial application of such mixtures.

B Training

In spite of the limitations indicated in the introductory remarks, the only way by which the services of the INCAP to different countries in this particular area may be quantitated, could well be the number of students that have received training at the Institute. The following Table summarizes these numbers, by regions.

NUMBER OF PERSONS TRAINED AT THE INCAP
DURING THE PERIOD 1950 - 1967*

Member Countries	337
Other Latin American Countries	247
U.S. and Canada	97
Other Regions	58

Total	739
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* Calculated to July, 1967

The training programs of the INCAP have had a definite multiplying effect on the extension of the knowledge and experience that the Institution has acquired through its 18 years of work. This factor has also definitely influenced the wide range of the nutritional programs - primarily those of application and of training that have or are being implemented - in particular in Latin America, but also in other areas of the world.

In addition to the students that arrive to the INCAP for formal training, a great number of visitors are acquainted with its work and many of them take back to their institutions or countries, experiences or knowledge developed at the Institute. The number of visitors and the region of the world from which they came during the last three years are summarized in the following Table.

NUMBER OF PERSONS THAT HAVE VISITED THE INCAP
DURING THE PERIOD 1964-1966

Member Countries	703
Other Latin American Countries	108
U.S. and Canada	115
Other Regions	80

Total	1,006
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Through its nutrition education pamphlets, quarterly informative bulletin, annual reports, and many other documents of technical character, and through its continuous flow of scientific articles, the Institute of Nutrition of Central America and Panama endeavours, within the limits imposed by economic and other conditions, to make available to the world at large, the findings of its research and the results obtained in other fields of work. In this regard it may be of interest to state that around 10,000 requests for reprints of scientific publications from all around the world are received annually at the INCAP, and that more than 1,000 informative bulletins are distributed on a quarterly basis.

Finally, it may be of interest to emphasize that as the nutritional problems of the world become more and more pressing, the demographic rates continue to increase, and the governmental and other agencies - conscious of the magnitude of these facts - concentrate their interest in them, the INCAP's experience is bound to be utilized in a greater degree. The original investment of the Central American countries, and its support by the Pan American Health Organization and many governmental and private institutions, mainly of the United States of America, have undoubtedly created a capital in highly trained and experienced specialists in nutrition and related fields. They have and will continue to cooperate with their colleagues of other areas of the world in the tremendous task that represents the combatting of hunger and the prevention of malnutrition, one of the greatest challenges of this generation.

LIST OF INTERNATIONAL MEETINGS WHERE INCAP STAFF MEMBERS
HAVE PARTICIPATED
1965

Date	Title of Meeting or Conference	Name of Participant
Jan. 15	"Tropical Medicine and Public Health". National Conference of Coordinators on Medical Education for National Defense (NMEND). Held in New Orleans, La., under the joint sponsorship of Tulane University and Louisiana State University	Dr. Moisés Béhar
Jan. 15	"The Interrelation of Parasitism, Malnutrition and Infections in Tropical Areas". Conference presented by the Director of the INCAP in his capacity of Visiting Professor of Public Health Administration of the Tulane University School of Public Health	Dr. Moisés Béhar
Feb. 1-5	Review Conference of Principal Collaborators of the Inter-American Investigation of Mortality. Held in Washington, D. C., and sponsored by the Pan American Health Organization	Dr. Romeo de León Méndez
Feb. 2	"Plasma Amino Acids as Indicators of Nutritional Status". Presented by invitation of the Amino Acids Committee of the National Research Council (NRC) and the Rutgers University Biological Bureau, as part of the Conference held as a memorial tribute to Dr. James B. Allison	Dr. Guillermo Arroyave
Feb. 7-10	Colloquium on Longitudinal Studies. Held in Old Point, Comfort, Virginia and sponsored by the National Institutes of Health (NIH) of the United States of America	Dr. Cipriano Canosa

Feb. 8-9	Cottonseed Processing Clinic. Held at New Orleans, La. under the sponsorship of the Southern Utilization Research and Dev- elopment Division, Agricultural Research Service, U. S. Depart- ment of Agriculture	Dr. Moisés Béhar
Feb. 15-19	Meeting for the Planning of the Joint FAO/WHO Group of Experts (see Sept.) on Vitamin Require- ments held in Rome, Italy, under the sponsorship of the Food and Agriculture Organization of the United Nations (FAO)	Dr. Guillermo Arroyave
Apr. 1st	Annual Meeting of the Committee on Dietary Allowances of the Food and Nutrition Board, U.S. National Research Council, held in Washington, D. C.	Dr. Guillermo Arroyave
Apr. 2	Bi-annual Meeting of the Food and Nutrition Board of the National Research Council, National Academy of Sciences, Washington, D. C.	Dr. Guillermo Arroyave
Apr. 6-7	"Behavioral Science and Medical Education in Latin America". Sixtieth Anniversary Conference of the Milbank Memorial Fund, held in New York City, N. Y.	Dr. Moisés Béhar
Apr. 9-14	29th Meeting of the American Institute of Nutrition, Held as part of the 49th Annual Meeting of the Federation of American Societies for Experimental Biology, in Atlantic City, N. J.	Dr. Moisés Béhar Dr. J. Edgar Braham Dr. Roberto Umaña Dr. Ricardo Bressani Dr. José Méndez de la Vega
Apr. 19-23	52nd Meeting of the Executive Committee of the Pan American Health Organization, Washington, D. C.	Dr. Moisés Béhar

May 17-28	Seminar for Nutrition Advisers on Programme Planning, held in Washington, D. C., under PAHO's sponsorship	Dr. Werner Ascoli
Jun. 10-11	"High Lysine Corn Conference". Held at Purdue University, Lafayette, Indiana, and organized by its Department of Biochemistry	Dr. Ricardo Bressani
Jun. 14-18	Fourth Meeting of the PAHO Advisory Committee on Medical Research, Washington, D. C.	Dr. Moisés Béhar
Jun. 21-25	III Inter-American Seminar on Child Feeding. Held in Petropolis, Brazil, under the auspices of "Operation Niños", Food and Peace Program of the Agency for International Development of the U. S. (AID)	Dr. Werner Ascoli
Jun. 21-26	Seminar on Salt Iodization for Endemic Goiter Prophylaxis. Organized by PAHO, and held in Salta, Argentina, under the joint sponsorship of this Organization and UNICEF	Dr. Werner Ascoli
Jul. 1-9	Annual Meeting of the WHO/FAO/UNICEF Protein Advisory Group Rome, Italy	Dr. Ricardo Bressani
Sept. 6-17	Meeting of a Joint FAO/WHO Expert Group on Vitamin A, Thiamine, Riboflavine and Niacin, held in Rome, Italy	Dr. Guillermo Arroyave
Sept. 12-17	"Symposium on Evaluation of World Protein Resources". Held in Atlantic City, N.J., and organized by the Agricultural and Food Chemistry Division of the American Chemical Society	Dr. Ricardo Bressani

Oct. 24-28	"Seminar on Undergraduate Training in Nutrition". Held as part of the Third Annual Meeting of the Association of Brazilian Medical Schools in Porto Alegre, Brazil	Dr. Carlos Tejada
Oct. 28-29	Meetings of the Committee for the Study of Nutritional Allowances, under the auspices of the NRC, and of the Food and Nutrition Board (NRC) held in Washington, D. C.	Dr. Guillermo Arroyave
Nov. 5-6	Meeting on Studies of the Epidemiology of Osteoporosis, held in Washington, D. C. under the sponsorship of the National Institute of Arthritis and Metabolic Diseases of the NIH and basically organized by WHO	Dr. Carlos Tejada
Nov. 7-13	XI International Congress of Pediatrics, held in Tokyo, Japan, under the sponsorship of the International Pediatric Association, the Japan Pediatric Society, the Japanese Society of Child Health and the Japanese Government	Dr. Moisés Béhar
Nov. 8-11	Western Hemisphere Nutrition Congress, held in Chicago, Ill. Organized by the Food and Nutrition Board of the American Medical Association (AMA)	Dr. Guillermo Arroyave Dr. Ricardo Bressani Dr. Leonardo J. Mata Mr. Richard L. Shaw
Nov. 10	Foundation of the Latin American Nutrition Society. Special Session, held as part of the above Congress	Dr. Guillermo Arroyave Miss Raquel Flores
Nov. 19	Seminar for Professional Staff Members of the U. S. Naval Medical Research Unit No. 2 (NAMRU-2) in Taipei, Taiwan, Republic of China. The conference entitled "Development of Vegetable Mixtures for Child Feeding" was presented	Dr. Moisés Béhar

Nov. 25	Conference on the activities of the INCAP presented at the request of the Director of the Food and Nutrition Research Center (FNRC) in Manila, Philippines	Dr. Moisés Béhar
Nov. 29- Dec. 3	"Conference on The Potentials of the Hot-Humid Tropics in Latin American Rural Development". Sponsored by the Cornell Latin American Year and the New York State College of Agriculture, at Cornell University, Ithaca, N. Y.	Dr. Ricardo Bressani
<u>1966</u>		
Jan. 9-11	Meeting on Nutritional Anemias held in Nashville, Tenn., under the auspices of the NIH	Dr. Fernando Viteri Dr. Jorge Alvarado
Jan. 17-21	1966 Operation Niños Seminar Steering Committee, organized by the U. S. State Department, Washington, D. C.	Mr. Richard L. Shaw
Feb. 14-18	"Seminar on Scientific Application of Electronic Computers" held in Cuernavaca, Morelos, Mexico, under the auspices of IBM	Dr. Miguel A. Guzmán
Feb. 17-22	Conference on Nutrition, Growth and Development, held at the West Indies University, Mona, St. Andrew, Jamaica, under the sponsorship of the Association for the Aid of Crippled Children	Dr. Cipriano Canosa
Mar. 31	First bi-annual Meeting for 1966 of the Committee for the Study of Dietary Requirements, held in Washington, D. C. under the sponsorship of the Food and Nutrition Board of the NRC and the National Academy of Sciences	Dr. Guillermo Arroyave

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| Apr. 4-5 | Conference on Gossypol Inactivation, New Orleans, La. Sponsored by the National Cottonseed Products Association, Inc. | Dr. Ricardo Bressani |
| Apr. 5-8 | Seminar on the Growth and Development Program of the INCAP - Presented at the Education School and Pediatrics Department of Stanford University, and at the Institute for Human Development of Berkeley University, California | Dr. Cipriano Canosa |
| Apr. 11-16 | 30th Meeting of the American Institute of Nutrition, held as part of the 50th Annual Meeting of the Federation of American Societies for Experimental Biology. Atlantic City, N. J. | Dr. Roberto Umaña
Dr. Oscar Pineda
Dr. Ricardo Bressani
Dr. José Méndez de la Vega
Dr. Moisés Béhar |
| Apr. 24-27 | First Latin American Meeting on Animal Production, held in Maracay, Venezuela | Lic. Roberto Jarquín |
| Jun. 6-10 | Fourth Meeting of the Regional Advisory Committee on Health Statistics. Held in Washington, D. C. and sponsored by the Pan American Health Organization | Dr. Miguel A. Guzmán |
| Jun. 13-17 | Fifth Meeting of the PAHO Advisory Committee on Medical Research. Washington, D. C. | Dr. Moisés Béhar |
| Jun. 20-24 | Meeting of the Study Group of the International Children Centre, held in Stockholm, Sweden, under the joint auspices of the Centre and the NIH | Dr. Cipriano Canosa |
| Jun. 21-22 | High Lysine Corn Conference, held at Purdue University, Lafayette, Indiana. Sponsored by the School of Agriculture of the University and supported by the Corn Industries Research Foundation, Inc., Washington, D. C. | Dr. Ricardo Bressani |

Jul. 25-30	PAHO Conference on Training of Public Health Nutritionists and Dietitians, Caracas, Venezuela	Dr. Carlos Tejada
Aug. 3-10	VII International Congress on Nutrition, held in Hamburg, West Germany, Convened by the Nutritional Sciences Union. Organized by the German Society for Nutrition Studies and sponsored by Dr. Heinrich Lübke, President of the Federal German Republic	Dr. Moisés Béhar Dr. Guillermo Arroyave Dr. J. Edgar Braham Dr. Ricardo Bressani Dr. Carlos Tejada Dr. Fernando Viteri Dr. Miguel A. Guzmán Miss Marina Flores Miss Raquel Flores
Aug. 17-19	Annual Meeting of the WHO/FAO UNICEF Protein Advisory Group, Geneva, Switzerland	Dr. Fernando Viteri
Sept. 15	Second bi-annual Meeting for 1966 of the Committee for the Study of Dietary Allowances, Washington, D. C. Sponsored by the Food and Nutrition Board of the NRC and the U. S. National Academy of Sciences	Dr. Guillermo Arroyave
Sept. 19-23	Conference on Nutrition Teaching in Schools of Medicine and Schools of Public Health. Held in Washington, D. C., under the sponsorship of the Agency for International Development (AID) with the technical assistance of PAHO	Dr. Carlos Tejada
Sept. 26	"Conference on the Art and Science of Dental Caries Research" held under the auspices of the Department of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, Mass.	Dr. Miguel A. Guzmán
Sept. 29	Intestinal Colonization of Children During First Infancy - Seminar at the Communicable Diseases Center in Atlanta, Georgia	Dr. Leonardo J. Mata

Oct. 5-7	Meeting on Nutrition and Infection, Bethesda, Maryland. Convened by the NIH and sponsored jointly by the U. S. Japan Cooperative Medical Science Program and the Office of International Research (OIR)	Dr. Fernando Viteri Dr. Leonardo J. Mata
Oct. 17-19	International Conference on Soybean Protein Foods. Held in Peoria, Ill., under the sponsorship of the Northern Utilization Research and Development Division, Agricultural Research Service of the U. S. Department of Agriculture with the collaboration of UNICEF, FAO and NIH	Dr. Ricardo Bressani
Oct. 17-20	Meeting of the Working Group of Inter-American Investigation of Mortality in Infancy and Childhood. Washington, D. C. Sponsored by PAHO	Dr. Miguel A. Guzmán
Oct. 29- Nov. 3	Pediatric Congresses, held in Mexico City, Mexico	Dr. Moisés Béhar Dr. Guillermo Arroyave Dr. Ricardo Bressani Dr. Cipriano Canosa
Oct. 31- Nov. 4	94th Annual Meeting of the American Public Health Association (APHA) held in San Francisco, California	Dr. Joao Bosco Salomon
Nov. 9-16	Latin American Seminar on the Planning and Evaluation of Applied Nutrition Programs, held in Popayan, Colombia. Sponsored jointly by the National Institute of Nutrition of Colombia, FAO and PAHO/WHO	Dr. Jaime Alvarez Zamora Mrs. Graciela de Canedo
Dec. 4-7	Annual Meetings of the North American Society of Hematology, held in New Orleans, La.	Dr. Jorge Alvarado

Dec. 4-10	"Primera Semana Gaucha de Pediatría" - 30th Anniversary Conference of the Pediatric Society of Rio Grande Do Sul. Held in Porto Alegre, Brazil	Dr. Cipriano Canosa
Dec. 11	"Physical Growth". Conference presented at the Pediatrics Department, School of Medicine, University of Ribeirao Preto, Brazil	Dr. Cipriano Canosa
Dec. 12	"Malnutrition and Growth". Seminar presented at the Pediatrics Hospital, Sao Paulo, Brazil	Dr. Cipriano Canosa
Dec. 15	Seminar on the Epidemiology of Malnutrition, presented at the Public Health Administrative Unit, Tulane University, New Orleans, La.	Dr. Moisés Béhar
January - June, 1967		
Feb. 3-10	Preparatory Seminar for the Conference on Population Policies in Relation to Development in Latin America to be held in Caracas, Venezuela, in July, 1967. This Seminar was convened by the Pan American Union and took place in Washington, D. C.	Lic. Marco Antonio Ramirez
Feb. 13	Third PASB Conference on Population Dynamics, held at the Pan American Health Organization Headquarters, Washington, D. C.	Lic. Marco Antonio Ramirez
Mar. 1-3	International Conference on Malnutrition, Learning and Behavior. Organized by the Department of Nutrition and Food Science of the Massachusetts Institute of Technology, and sponsored jointly by the MIT and The Nutrition Foundation, Inc.	Dr. Moisés Béhar Dr. Cipriano Canosa Dr. Miguel A. Guzmán Dr. Delbert Dayton (NIH - assigned to INCAP) Dr. Robert Klein Dr. Joao Bosco Salomon

Mar. 6-17	Meeting of <u>ad hoc</u> Panel of Experts on Protein, United Nations Advisory Committee on the Application of Science and Technology to Development. Held at UN Headquarters, New York, N. Y.	Mr. Richard L. Shaw
Apr. 3-6	Colloquium on Calorie Deficiencies and Protein Deficiencies, held at Sydney Sussex College, Cambridge, England	Dr. Oscar Pineda
Apr. 16	Annual Nutrition Research Conference "The Relationship Between Nutrition, Mental Development and Performance" held as part of the program of the 51st Annual Meeting of the Federation of American Societies for Experimental Biology, Chicago, Illinois. Organized by the National Dairy Council.	Dr. Moisés Béhar
Apr. 16-21	Symposium of the American Institute of Nutrition (AIN) on Geographic Distribution of Nutritional Problems, held in Chicago Ill.	Dr. Moisés Béhar Dr. Ricardo Bressani
Apr. 26-28	Western Hemisphere Conference on the Importance and Safety of Foods, held in Mayaguez, Puerto Rico. Organized by the Biology Department of the College of Agriculture and Mechanic Arts, University of Puerto Rico, and financed by the U. S. Public Health Service Division of Environmental Engineering and Food Protection	Dr. Ricardo Bressani Dr. A.E. Olszyna-Marzys
Jun. 7-9	Food Industries Advisory Committee 1967 Meeting, held at Skytop, Pennsylvania, sponsored by the Nutrition Foundation, Inc.	Dr. Moisés Béhar

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| Jun. 8 | Study Group Meeting on "Nutrition and Infection" organized and sponsored by The Ciba Foundation for the Promotion of International Cooperation in Medical and Chemical Research. Held in London, England, in honor of Professor R. Nicolaysen (Institute for Nutrition Research, University of Oslo, Norway) | Dr. Leonardo J. Mata |
| Jun. 27-
Jul. 4 | International Symposium on Protein Foods and Concentrates, held at Mysore, India, under the auspices of the Central Food Technological Research Institute | Dr. Ricardo Bressani |