FOOD INSECURITY AND MALNUTRITION IN CENTRAL AMERICA: TRENDS, CAUSES, AND NEEDED ACTION

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HEALTH, NUTRITION, AND FOOD IN CENTRAL AMERICA: A CHALLENGE FOR THE 1990s

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"We have Central American paths to peace and development, but we need help to make them a reality. We ask for an international agreement which will guarantee development, so that the peace we seek will be long lasting.

We firmly repeat that peace and development are inseparable."

Presidents of Central America
Esquipulas I Meeting
Esquipulas, Guatemala 1987

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INTRODUCTION

The decade of the 1980s in Central America was characterized by the sharpening of a socioeconomic crisis with very old roots, partly influenced by the difficulties of the international economic system, and fundamentally determined by deformities of the near semifeudal socioeconomic conditions in Latin America. Together with this crisis and partially a tragic expression of it, the 1980s were characterized by open wars in at least three of the Central American countries, which, besides their tragic toll of over 160,000 deaths and 2 to 3 million refugees or displaced persons, virtually paralysed the economic productive systems and the weak regional common market, which was still in its infant stage (1).

Furthermore, the draining of resources toward the exterior for external debt servicing exacerbated the social, economic, and health situation of the Central American population, which already was very precarious.

Countries and development agencies offered technical and financial assistance, especially in the second half of the decade, channeling essential resources toward the social sectors; unfortunately, the sums of money and/or the low management capacity of the countries' institutions did not allow this support to completely neutralize the impact of the crisis on the social well-being (principally economic, health, nutrition, and food) of the poorest sectors of the population. In spite of considerable external economic support, the standard of living has decreased by 25 percent. Not even Costa Rica, the most peaceful and prosperous country of the region, has been left untouched by this crisis (1).

An unusual increase in group feeding programmes through food donations by governments and donor agencies should be mentioned. Especially important has been the Agency for International Development of the United States of America (AID), the World Food Programme (WFP), and the German Cooperation Agency (GTZ) and two agencies which acted as intermediaries in the AID Food for Peace programmes, CARE and CARITAS.

Food donation distributions in Central America increased in the decade of the 1980s by 200 percent over the previous decades.

Different forums have analysed the hunger and malnutrition problems and the significance of external support through food aid for poor countries cannot be undervalued, given that the governments of the

region do not have resources to resolve these problems. In the 1943 United Nations Conference on Food and Agriculture at Hot Spring, Virginia, U.S.A., that focused on actions against global hunger and malnutrition, it was declared that "the principal cause of hunger and malnutrition is poverty and it is useless to produce larger quantities of food if men and nations do not provide markets." It was thus affirmed that "food produced can be placed within the reach of all people if plans are adopted that allow perpetual employment in all countries; industrial production is increased; human exploitation is eliminated; and national and international commerce, methodical administration of investments and exchange, and maintenance of national and international economic equilibrium are encouraged."

Today, almost 50 years since this declaration from the UN Conference on Food and Agriculture,[1] the same situation continues to be a reality that cannot be left unconsidered. Despite advances in science, technology, and food and nutritional planning characteristic of the 1970s, food delivery to different programmes in Central America has not evolved into more than isolated nutritional interventions separate from economic and social development due to a lack of coherence in the political motives of recipient governments and the multiple factors intervening in the countries' economic development.

On the other hand, it is recognized that in Central America, the indices of poverty and extreme poverty have worsened. Health indicators have shown some improvement in global terms, not reflecting an improvement in living conditions, but rather reflecting results (very limited to be sure) of medical technological advances (immunizations, attention to infections, etc.) that could be more efficient and effective if accompanied by improvements in the standard of living of large population groups who are marginalized from the macroeconomic development processes.

Malnutrition prevalence showed a relative stagnation. Nevertheless, given the population increase, absolute numbers of malnourished have increased, principally in the countries of northern Central America. Infectious diseases continued to be the principal causes of illness and death in preschoolers in at least four of the six countries of the Isthmus (3).

In the health sector, the relative improvement in management of services available to the population was probably the most important intermediate product of external aid and of the national efforts of each country. In the last five years, large investments have been made in personnel training in social services. Technical norms were brought up

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[1] Report of the United Nations Conference on Food and Agriculture, May 18 - June 3, 1943.

to date that focused on people, basic input availability was increased (vaccines, antibiotics, ORT), transport systems were improved, in almost all the countries limited processes of resource decentralization toward operative levels were initiated, and important efforts were made in health, education, and community-level nutrition (4). Nevertheless, achievements in the increase of coverage of and access to the services were very limited. With the exception of important increases in vaccination coverage, other basic health services continue to be available only to a very limited sector of the population (7). This phenomenon is probably due to the fact that investment of national funds in the social sectors has diminished or has not increased as it should have in all of the countries (2).

In Central America, two countries (Costa Rica and Panama) have achieved, to some degree, the maintenance of relative improvements in the health conditions of the population, indicated by important reductions in infant mortality rates (from 19 per 1,000 live births in 1980 to 14 per 1,000 in 1989 in Costa Rica and from 28 per 1,000 to 22 per 1,000 between 1980 and 1989 in Panama) (3), although the economic crisis which affected them also probably impeded more important achievements in this field.

In the current document, the efforts that the countries of the Central American subregion have carried out with the support of INCAP and other agencies are described, in order to diminish the results that the deepening crisis has brought in health and nutrition for the great majority of Central Americans. The first section summarizes the nutritional situation of the countries and some of its determinants. The second section specifies the strategies, programmes, and actions in health and nutrition that the governments with the support of INCAP and other agencies have applied. Finally, the third section presents perspectives and proposes guidelines and areas of attention for the 1990s.

ANALYSIS OF THE NUTRITIONAL SITUATION IN CENTRAL AMERICA AND PANAMA

In the Central American isthmus, it is possible to observe three clear tendencies with respect to the nutritional status of preschoolers.

The first corresponds to Guatemala, a country which, between 1965 and 1967, had high prevalence of weight-for-age deficiency and did not achieve any significant improvement from 1965-1967 through the 1980s (Table 1). The tendency of stunting of height-for-age is the same (Table 2).

The second observed tendency applies to El Salvador and Honduras, which, between 1965 and 1967, had prevalences in weight-for-age deficiency as high as that of Guatemala, but have been able to reduce

them, and currently are located in a category with lower malnutrition rates. If we consider growth stunting information, the achievements of these two countries are even more marked.

The last tendency corresponds to Costa Rica, where, between 1965 and 1967, growth stunting prevalence was lower than in the northern Central American countries, and which achieved a notable reduction, being in the category with lowest prevalence of infantile malnutrition. The tendencies of height stunting are very similar to those of weight deficiency.

The available data for Nicaragua is insufficient to be able to analyse tendencies in this country. The data from Panama do not permit a clear placement of this country in any of the three identified groups. On the one hand, if we examine the prevalence of weight-for-age deficiency (Table 1), it would seem that Panama has not achieved improvements, although the levels of base malnutrition (1965-1967) were lower than those of Guatemala. More recent data on growth stunting in school children suggest that the nutritional situation in Panama has worsened.

What conditions could explain these differences in nutritional status registered in Central America in the last 20 years? How can the distinct tendencies observed in Guatemala, on the one hand, and in El Salvador and Honduras, on the other, be explained? Why does Costa Rica have lower levels of growth stunting prevalence? This section will focus next on information on income distribution, per capita state spending in health and education, women's education, energy consumption, and domestic sanitary conditions for each country. These factors vary by country and could, therefore, explain to a large degree differences in nutritional achievements.

Income Distribution

Income is a determining factor in health and nutritional status, especially in societies where governmental health services are insufficient and where access to food depends on purchasing power. We would expect, therefore, that the nutritional status of the youth in the most vulnerable population group would be affected by real income levels.

In the structure of income distribution, the median value in dollars of the lowest strata, which makes up the poorest 20 percent, is higher in Costa Rica than in the rest of the countries. This partially explains the better nutritional levels of preschoolers in Costa Rica in comparison with other countries of the region (Table 1). Nevertheless, the income levels do not explain the better nutritional conditions of

Honduras and El Salvador in relation to Guatemala, since the income levels of the poorest strata are comparable in these three countries.

It should be noted that the purchasing power of the utilised currency (the dollar) is not necessarily the same in all of the countries, which means that the data on income are not strictly comparable among all the countries.

Expenditures in Health and Education

Government spending on health and education benefit the population with scarce resources, whose access to health services and education offered by the private sector are limited due to their low purchasing power.

We propose that health spending should have some impact on nutritional status by reducing incidence and duration of infectious diseases through medical interventions. This effect, we believe, ought to be immediate.

We propose that educational spending should have an impact on health and nutrition through the improvement of child raising and nutrition habits, and possibly through the income of the beneficiaries of education. This effect is, most probably, not immediate.

Figures 1 and 2 show governmental spending in health and education in dollars per inhabitant per year for the countries of the region from 1980 to 1986. Health expenditures in Costa Rica only included the Ministry of Health budget and not that of the Ministry Social Security. Taking budgets into account, Costa Rica clearly would be the country with the highest investment in health per inhabitant per year, although recently less state spending was made in health each year.

Costa Rica, Nicaragua, and Panama are easily distinguished as a group because of their high investment in health, which contrasts with El Salvador, Guatemala, and Honduras (Figure 1). In this second group, nevertheless, two tendencies are perceived: since 1980, El Salvador and Honduras annually increased their spending on health per inhabitant, while, in Guatemala, health spending was decreased.

Given that health spending can have an immediate effect on nutritional status, the differences between El Salvador and Honduras, on the one hand, and Guatemala, on the other, could explain in part the better levels of nutritional status observed in Honduras and El Salvador, as compared with Guatemala. The differences in health care spending between Honduras, El Salvador, and Guatemala coincide with data presented on mortality (Table 3). The percentage of deaths caused by gastrointestinal and respiratory illnesses was higher in Guatemala (17.7

and 14.4 percent, respectively) than in El Salvador (13.3 and 4.5 percent) and in Honduras (9.4 and 3.8 percent).

Guatemala had the smallest expenditures on education per inhabitant during the period of analysis, followed by El Salvador. The other countries had comparable per capita education spending, which is higher than Guatemala's and El Salvador's.

Education spending helps explain the high prevalence of malnutrition in Guatemala in relation to the rest of the countries of the north of the region, and is congruent with the data on maternal literacy that will be presented below.

Women's Education

The formal education of women was closely and inversely related to the risk of death in children under five years of age. This relationship is stronger for children under one year, was persistent throughout rural-urban differences, and has been documented for all of the developing regions in the world. The evidence also shows that this relation is maintained after adjusting for economic status (8).

It is evident at first glance that female illiteracy in Costa Rica was the lowest in the region, which is not surprising (Table 4). Costa Rica began the 1970s with illiteracy rates considerably lower that those of the rest of the region (9). These achievements are associated with nutritional improvements and with low rates of infant mortality in this country, which are also the lowest in Central America.

Guatemala, in contrast, has the highest levels of illiteracy of the region and the highest illiteracy rates among women. It should be noted that these figures are not only the highest, but are also considerably higher than those of other countries. Around 1980, the difference in female illiteracy between Guatemala and El Salvador was over 20 points; in 1985, the illiteracy rate of women in Guatemala was approximately 10 points higher than that of Honduras (Table 4). These differences in maternal education between Guatemala, El Salvador, and Honduras could contribute to differences found in the prevalence of infantile growth stunting in these countries.

Sanitary Conditions

Programmes of water provision and hygiene environment generally have had positive effects on diarrheal morbidity (10, 11). The availability of running water in the home increases its utilisation for personal hygiene as well as hygiene in the preparation and administration of food for the child, reducing the risk of illness,

especially of diarrhea. Excrement disposal in a hygienic form reduces fecal matter in the open and, as a result, the infection of children with pathogenic organisms. The negative effect of diarrheal illness on the nutritional status of preschoolers is well known so that hygiene conditions should have an effect in terms of an improved nutritional status.

The percentage of households with running water in the home was around 92 percent in Costa Rica, much higher than the rest of the countries, which contributes an explanation for the notably better nutritional status of Costa Rican children compared to the rest of the region (Table 5).

Guatemala, the country with the highest prevalence of growth stunting, had the lowest proportion of households with running water in the region. Honduras, and especially El Salvador, had higher proportions of households with water provision than Guatemala, which probably partially explains the better current nutritional status of children in these countries in comparison with those of Guatemala. Although there is no recent data on Panama, since 1980, this country had had better water provision per household than other countries, with the exception of Costa Rica. This relatively good condition of hygiene conditions coincides with Panama's position in the region in terms of the nutritional status of its children.

Compared with water provision, facilities for excrement disposal are similarly distributed in the countries of the region. The proportion of households that have a toilet, septic tank, or latrine was high in Costa Rica (93 percent) and Panama (85.5 percent), but low in Guatemala (65 percent) and Honduras (56 percent). This variable on its own, nevertheless, does not explain the better nutritional situation in Honduras, as compared with Guatemala. Possibly maternal education and per capita state health expenditures in Honduras balance the negative effect of the lack of facilities for the disposal of excrement on the nutritional status of the child. We do not have information for Nicaragua and El Salvador.

Food Consumption

Consumption adequacy of real energy per capita was lower in Guatemala (72 percent of adequacy) than in El Salvador (78 percent), which, in turn, was less than that of Honduras (96 percent of adequacy). Lower food consumption in Guatemala probably contributes to an explanation of the stagnation in prevalence of growth stunting in this country, in comparison with the improvement observed for El Salvador and Honduras.

Conclusion

Taking the diverse indicators discussed in the chapter, it is evident that living conditions in Guatemala are inferior to those of Honduras and El Salvador, with the exception of income distribution. Guatemala had the lowest per capita health and education spending; the highest levels of female illiteracy; and the lowest water supply, excrement disposal, and food consumption levels. In contrast, Costa Rica had the best living standards and El Salvador and Honduras had higher levels than Guatemala, although much lower than Costa Rica.

The data taken together explain the current nutritional situations of the four studied countries.

STRATEGIES, PROGRAMMES, AND ACTIONS IN THE 1980s

The deepening of the crisis described in the preceding chapters obliged the countries of the isthmus to look for new solutions to nutrition, health, and food problems, given a situation of increased resource scarcity and permanent uncertainty.

Since, in the early 1980s, frequent changes in governments and political and economic instability occurred in all the countries of the Isthmus, conditions did not exist for the establishment and continuity of policies, programmes, and coherent strategies in health, food, and nutrition. Policies were thus colored by improvisation, uncertainty, and actions which responded more to offers of external resources (projects) than to national programmes based on the existing problems.

On the other hand, in spite of a strategic declaration supporting decentralisation of services, little advancement was made in this area, given, to a large extent, to structural, legal, and administrative restrictions that made accomplishment of this policy difficult.

In 1982, following the directive of its governing bodies as integrated in the Central American Ministries of Health, the Institute of Nutrition of Central America and Panama (INCAP) launched a regional initiative to promote breast-feeding and infant nutrition as a low-cost public health measure of proven efficacy which could contribute to the improvement of child survival and health.

This regional initiative was strengthened by projects, programmes, and activities which, to a larger or smaller degree, were implemented with the risk population in each country, having very positive results: the training of many thousands of social workers; breast milk banks, established in the principal hospitals of each country; increased prevalence of natural lactation; growing practices of weaning among female workers; incorporation of materials on breast-feeding and infant

nutrition in primary and secondary curricula; and important decreases in the costs of the purchase and the use of formulas for neonatal feeding in the hospitals (5).

In a period of limited foreign exchange for the importation of infant formula, together with the low purchasing power of the highest risk households, this type of intervention, to some degree, relieved the problems related to nutrition and infant survival.

From 1985, a flow of external resources to the region began with an initiative of the Pan American Health Organization (PAHO), called the Plan of Priorities in Health for Central America and Panama (PPSCAP) under the title of "Health, Bridge to and Source of Peace." This initiative included actions in seven health priority areas:

1. Strengthening health services

2. Development of human resources

3. Essential medicines

4. Food and nutrition

5. Tropical diseases

6. Infant survival, and

7. Water and hygiene environment

Through this initiative, an attempt was made to support the countries, particularly in the areas of health, food, and nutrition, with the difficult task of responding to the consequences of the crisis in health situation, which was already precarious for the great majority of the population.

The areas most directly related to problems of health, food, and nutrition were infant survival and food and nutrition. From the beginning, efforts to strengthen national and subregional actions were directed towards the promotion and support of health and nutrition in the maternal infant group. Within the area of food and nutrition, the development of nutritional vigilance, nutritional control of specific deficiencies, food and nutrition education, training and development of human resources in food and nutrition, support to programmes of feeding to groups, and increases in the availability of and access to food were supported.

The priority areas described received economic support from the Italian, Swiss, U.S., and Nordic governments, and the European Economic Community, and a certain degree of coordination was achieved among the

diverse development agencies that develop actions in the field of health, nutrition, and food (PAHO, INCAP, UNICEF, AID, UNFPA, etc.).

Nutrition and Maternal Infant Health

At the outset of the second half of the 1980s, it was assumed that simple promotion of medical technologies of proven efficacy could reduce the harm in health and nutrition in the maternal infant group (Oral Rehydration Therapy, Control of Acute Respiratory Infection, Growth Monitoring, Immunization, Prenatal Care, etc.). Nevertheless, this premise came into conflict with the structural and managerial weaknesses of the health services (state and nonstate) in almost all of the countries, preventing the benefits of these technologies from reaching the most vulnerable populations. For example, usage of rehydration salts in severe cases of diarrhea did not go beyond 20 percent of the cases. For control of severe infections, growth monitoring and development, and prenatal care, there were not even data to evaluate any advances which may have occurred (4).

From here, the majority of efforts in this area was concentrated in overcoming the deficiencies in programme management, as well as working with the programmes' technological content.

One area considered to be of vital importance by the countries and supported by INCAP involved the availability of timely, reliable, and representative information about health and nutritional problems, which permitted those responsible for services on all levels to make decisions on a scientific technical basis and to be able to orient limited resources towards the most affected groups with the most efficient and effective actions and strategies. INCAP has helped countries in this area with the collection, processing, and interpretation of health and nutrition data, through regular information systems, special studies, and alternative systems such as surveillance of sample units.

The countries, with the support of INCAP, carried out national meetings of nutrition and maternal infant health in Guatemala (1987), El Salvador (1988), Honduras (1986), Panama (1985), and studies on specific nutritional problems in Costa Rica (1989), Guatemala (1987), Panama (1990), and Nicaragua (1987 and 1990). One hundred and nineteen communities of surveillance sample units were established throughout Guatemala; and anthropological studies and surveys on health and nutrition knowledge, attitudes, and practices (CAP) in Guatemala, El Salvador, Panama, Nicaragua, Costa Rica, and Belize were supported. In Panama, based on a CAP survey, an integrated plan of education in food, nutrition, and infant survival, called PEDALINSI, was formulated. It was made up of a subregional data base of health and maternal infant nutrition, having a data set for each country, utilising a software package developed by INCAP, called SIMAP (Mapping System), which

permitted access to geographic information and an analysis oriented towards facilitating decisionmaking processes.

In the area of information sciences, INCAP has trained a great number of officials in the countries in the use of SIMAP and in methodologies for data collection, analysis, interpretation, and use.

On the other hand, in all of the countries of the Isthmus, studies on effectiveness of maternal infant health services have been undertaken, which have evaluated the response capacity and problem resolution that these services have to attend the demand of its patrons. Through these evaluations, areas have been explored, such as human resources, infrastructure, equipping, systems of reference and counter-reference, education, and community participation.

This information on the quality and capacity of services offered, together with a greater availability of information on health problems and geographic location, permits a better orientation of resources toward the more critical areas and groups in terms of health and nutrition. Complementary to the above-mentioned aspects, INCAP, in coordination with UNICEF and PAHO, has supported periodic evaluations of achievements in the maternal infant programmes in each country as well as on a subregional level. Additionally, studies on child mortality during the period of 1980-1989 were carried out in collaboration with the Latin American Center of Demography (CELADE).

To date, those responsible for health and maternal infant nutrition have access to higher quality and quantities of information than they did five years ago for improving the management of the programmes. There is still much to do in order to achieve effective use of this information, and we believe that the processes of deconcentration and decentralisation of health services will contribute to the achievement of this goal. Work is increasingly being carried out based on the study of local problems, instead of being based on national averages which mask many inequalities between regions and countries and, with the great population mobility (refugees, displaced persons, etc.) of recent years, have increasingly lost practical usefulness for both the management of services and a rational approach to problems.

Another critical area in which countries identified a need for support was in the formation and development of human resources in nutrition and maternal infant health. A coordination of external support was recommended by the countries to INCAP and PASCAP (Programme of Health Training for Central American and Panama of PAHO). This component would contribute to the improvement of national programmes and activities of health and maternal infant nutrition, through actions of support in training and human resource development.

The programmes in this area have included a) support to the academic sector, b) support of permanent education of service personnel, and c) technical administrative support for human resource training.

As basic strategies in these processes, the integration of training activities has been promoted, an interchange of human resources between countries and regions of the same country has been supported, and tutorial and intern training in specialized centers of the countries (reference training centers) of the regions or provinces (regional training units) and of international centers or institutions (INCAP in Guatemala, INCIENSA, INCAE and Children's Hospital in Costa Rica, Infant Hospital in Mexico, among others) have been carried out.

Likewise, specific methodologies of personnel training have been developed and tried at training schools and service institutions. Guatemala and Honduras have also elaborated integrated training guides on maternal infant health. These contain technical reference guidelines for all the activities of maternal infant health and nutrition, integrated around child growth and development. Additionally, training guides were elaborated on health and nutrition in El Salvador. In the preparation of these guides, national technicians participated in various departments of the Ministries of Health, and also promoted the revision of norms of attention in maternal infant health care and the coordination or integration of activities through the specific departments that carry out nutritional activities directed toward the mother and child.

In relation to educational material, the design of educational techniques was continued, directed toward the health and educational sector, as well as support materials for educational activities of nongovernmental organizations (NGOs).

An interchange of technical information has also been promoted in meetings with experts in the region. In this way, there has been a collaboration in meetings on infant survival, acute respiratory infection, growth and development, control of diarrheal diseases and oral rehydration therapy, vitamin A deficiency, information systems, monitoring and evaluation and anthropological research on health and maternal infant nutrition. In these meetings technical aspects have been reviewed and recommendations formulated for the revision of norms related to specific activities of maternal infant health.

A very important area pointed out by the countries and related to human resources is the availability of scientific-technical information. The technical and scientific advances in nutrition and health normally are published in magazines in languages other than Spanish and at very high costs, which makes it difficult for the majority of the personnel of these services to have access to this information. Given this, INCAP, with the support of other agencies, has developed activities for

diffusion of scientific technical information to health services personnel and other sectors in the isthmus countries.

Priority Area: Food and Nutrition

INCAP has lent its support to the countries of the subregion through supporting the following components:

1. Systems of Food and Nutrition Surveillance
2. Control of Micronutrient Deficiencies
3. Food and Nutrition Education
4. Training and Development of Human Resources in Food and Nutrition
5. Support of Group Feeding Programmes, and
6. Increase in Availability and Quality of Food.

Systems of Food and Nutrition Surveillance

In terms of Food and Nutrition Surveillance, INCAP jointly prepared, with the Ministry of Health in Costa Rica, a proposal for the creation of a Subregional Programme of Food and Nutrition Surveillance (ROSVAN), which was under the auspices of the Interagency Programme of the United Nations for Food and Nutrition Surveillance (IFNS), constituted by FAO, WHO, and UNICEF for obtaining technical and financial resources. The purpose of this programme, which would be based at INCAP in Guatemala and INCIENSA in Costa Rica, would be to create a data base of techniques, methods, and experiences in VAN and provide training for technical personnel of the subregion.

Partial support has been received by FAO, which together with INCAP's resources, has permitted a continuing cooperation with the countries. A close relationship has been maintained with the Food Security Programme (FSP) carried out by CADESCA, with the financial support of the EEC.

Control of Micronutrient Deficiencies

For the control of micronutrient deficiencies, actions aimed at eradicating primary nutritional deficiencies have been carried out for endemic goiter, vitamin A deficiency, and, to a lesser degree, iron deficiencies.

In terms of control of iodine deficiencies, national surveys have been carried out on goiter and iodinization processes in Nicaragua, Honduras, Costa Rica, El Salvador, Guatemala, and Panama, with the purpose of updating the available information in this respect, which came from the 1960s and manuals and instructions were elaborated for salt iodinization programmes. Furthermore, personnel have been trained in laboratory techniques in determining the presence of iodine in urine and salt for the control of fortification programmes.

In vitamin A deficiency control, work was carried out in reactivating the sugar fortification programme with vitamin A in Guatemala and in organizing a similar programme in El Salvador, which will initiate the process of fortification in the sugar harvest of 1991. Panama has substantial sugar fortification plans for 1992.

Investigations are being conducted to find technological alternatives to improve the stability of the mixture of retinol for sugar fortification. Finally, in relation to the control of iron deficiency anemias, technological processes are being analysed for fortifying sugar with iron.

Food and Nutrition Education

The support of INCAP to the countries through food and nutrition education actions aims to contribute to the improvement of the population's food and nutrition situation through the development of education actions that tend to increase the capacity of the population in areas of food production, appropriate hygiene habits, and consumption of available foods.

INCAP's actions for technical cooperation contemplate activities of technical assistance, training (in service and tutorials), research support, and diffusion of information.

Educational material has been produced for the training of service personnel in Nicaragua, Panama, Costa Rica, Guatemala, and El Salvador, and material for community education in Costa Rica, Panama, and Guatemala has also been produced. The use of mass media in Panama, Nicaragua, and Costa Rica has been supported. Finally, an evaluation of education systems has been completed in Costa Rica, Guatemala, and Panama.

Training and Development of Human Resources in Food and Nutrition

For the training and development of human resources in food and nutrition (HRFN), a process was initiated in 1986 to identify necessities in training and development in HRFN, with emphasis on the

agricultural and educational sectors, since the health sector was covered by actions in nutrition and maternal infant health described in section A of this document.

Based on these necessities, a plan was formulated to contribute to the improvement of the food and nutrition attention provided to the population, through support of human resources (training and assistential) in agriculture, education, work, and planning.

Through this support in the individual countries, incorporation of the food and nutrition component has been achieved in the training of agronomists, nurses, nutritionists, educators, doctors, and auxiliary personnel in these disciplines. For 1992-93, an evaluation of the results of this process is contemplated. Likewise, academic training of personnel in different fields and levels with an intersectoral focus has been supported, as well as in-service training of personnel of the sectors concerned. Finally, support has been provided for an improvement of mechanisms of positive interaction between the community and the agriculture, education, and health workers.

Support of Group Feeding Programmes

The Project of Technical Support for Group Feeding Programmes (PROPAG) was generated as a necessity proposed by the countries in different forums with relation to the food programmes to groups, within which problems which affect the development of their programmes have been identified, as well as the lack or weakness of the criteria or lines of national strategies to integrate such programmes in the context of economic and social development, since these, in spite of implying a considerable volume of food, are developed in an isolated form with an assistentialist character and not utilised in a rational form within the foci of economic and social development.

In addition to this, the various countries indicated to INCAP the need for its providing support to national institutions in identifying actions to overcome obstacles and restrictions in the operation of the group feeding programmes and in the development of national strategies in order to rationalize their use.

Initially, development of a subregional project executed by INCAP with these objectives emphasized improving the programmes' management, without implying that INCAP would facilitate or encourage this type of intervention, but rather to respond to a need for improving the management of large volumes of food aid that the countries of the subregion have been receiving in recent years.

Within this same context, INCAP provided technical assistance to the national implementing agents of the school feeding programmes in

Guatemala, and the school and maternal infant programmes in Costa Rica, which, based on a methodology of operational study, contributed in some way to the analysis of some inherent problems in programmes' management and to the search for alternative solutions to these problems.

The Subregional Project of Technical Support for Group Feeding Programmes, during its five years of work, achieved an improvement, through different components and activities, of the following aspects:

- Management of food and nutritional projects and programmes, including formulation, execution, monitoring, supervision, and evaluation of programmes on a central, regional, and local level.

- Development of a series of training activities in the management of projects and health programmes on a central, regional, and local level.

- With regard to strategies and national policies, the Institute, through this project, facilitated the development of some initiatives tending to formulate a national policy oriented toward defining norms and minimum criteria for the use of food aid, including aspects of policy decisions, beneficiary selection criteria, use of rations, etc. Nevertheless, owing to internal factors, many of these initiatives did not go beyond the preparation of a document that reflected the conceptual framework and the intention of establishing regulations for the use of food aid. There still exist incongruities in food production, self-sufficiency, and security in the countries of the isthmus.

Without a doubt, some experiences are relevant and of great importance: Costa Rica, for example, for over a decade, through the introduction of tax reform and the surtax of some products such as tobacco and alcoholic beverages, generated funds which were channeled and technically administered by the Office of Control of Household Aid Distribution, a dependency of the Ministry of Labour. It is within this context that the group feeding programme was established, especially the School and Maternal Infant Programme, which was part of a national strategy and an important part of the development of the mentioned sectors.

Likewise, in Guatemala, the government, beginning in 1986 with funds from the Ministry of Education and external food contributions, initiated a reorientation of the school feeding programme, also incorporated the preparation of a solid food (nutritionally improved cracker), which has been distributed to the students of primary schools from 1986 to 1991, with adequate coverage, in terms of the particular objectives of the sectoral policy of the governments that have supported this programme.

Increase in Availability and Quality of Food

Finally, the relative increase in availability and quality of food has advanced less than proportionately. Fundamentally, transference of technologies has been attempted, especially relating to the use of vegetable mixtures with high nutritional value, as a low cost alternative to the perpetually more expensive animal products. In this manner, a transference process in the Republic of Panama was supported between 1985-87, for the production of a mixture of rice and a native legume called chiricano bean (Kaopi), with the objective of substituting milk in the school and maternal infant programmes; nevertheless, due to the political crisis that shook the country between 1987-89 and that culminated with military invasion, the process was interrupted, but will be continued.

In order to support this component, a subregional proposal was formulated between 1989-90, called "Increase in Availability and Consumption of Food through the Technology Transference for Multi-grain Flour as a Food Strategy in Central America," which will be financed by the Special Plan of Economic Cooperation for Central America (PEC) of UNDP for a two-year period. It is hoped that these and other projects will contribute to the strengthening of the cooperation of INCAP with its member countries, within the framework of an institutional programme of food security.

PERSPECTIVES AND PROPOSALS FOR THE 1990s

The following important facts should be considered:

- The diminishing real value of salaries, the constantly increasing unemployment rates, and the perpetuation of inaccessibility to the production means by the majority of the population, together with the macroeconomic problems, make it clear that food insecurity will continue to prevail for an elevated percentage of the population in the current decade.

- In spite of the efforts made by the Central American countries with the support of other countries and agencies, the problems of health, nutrition, and food persist and will possibly be aggravated as a result of the social economic crisis and the application of economic adjustment measures.

- The public sector basic social services will possibly become overburdened, owing to large portions of the middle class that, until, did not need to use them but will use these services in increasing proportions. This classes' purchasing power will drop following the inflation that has struck these countries, which will limit access to private services (in health, education, food,

etc.). On the other hand, the decline of investment in the social sector, which is part of the adjustment programmes, should lead to a lower allocation of national resources to social programmes, which will aggravate supplies and the quality of services.

- From 1985 to the present, large changes in Central America have occurred (i.e., in government through popular vote, initiation of peace processes, and the appearance of governments with neo-liberal political orientations), which make it possible to foresee important reorientations with relation to the way health, nutrition, and food problems will be focussed upon. With such a political orientation, it is expected that there will be a greater tendency toward the privatization of services, which, in the current circumstances of extreme poverty, would aggravate even more sharply the living conditions of the great majority of Central Americans.

Given this gloomy situation which affects the countries of the subregion to different degrees and in different ways, it is necessary to develop strategies, programmes, and innovative action that permit the advances in science and technology to really reach the groups with the highest social and biological risk.

In order to do this, it will be necessary to identify and take action geared towards the achievement of nutritional food security through focusing on three major lines or areas of work: a) strengthening the formulation processes of policies and effective strategies of food and nutrition oriented towards the achievement of food security, encouraging national food production, appropriate storage, conservation, and commercialization, and placing emphasis on producers of basic grains; b) improvement of food availability, access, distribution, and intrafamilial consumption; and c) special attention to high risk groups, households, and individuals, or those affected by nutrition and health problems, improving the response capacity of services (of health and other sectors), designing, and implementing effective interventions with equity and efficiency.

All of the above should be carried out with a regional focus, without losing sight of the fact that the problems and their social, political, and economic natures are not the same in each Central American country.

Specific Strategies

The functioning of these various work areas will each require specific strategies. For example:

1. In the formulation of policies, special attention should be paid to those actions that minimize the effects of economic adjustment policies, especially in the population groups at highest risk. It will be necessary that information about the location and characteristics of these groups reach necessary political decisionmaking levels. Development agencies in this case should develop an advocacy role, highlighting the magnitude and location of the problems with a prospective focus which will permit anticipation of nutritional deterioration of marginal groups. Another important action would be stimulation and support of mechanisms that avoid continued ecological deterioration in the region and facilitate the efficient use of natural resources, through adequate selection of food production technologies, for the management of crops and animal species. Likewise, policies ought to support human resource training and development at different levels and in sectors that have responsibilities in nutritional food security of the countries. Finally, a fundamental aspect of this area is the definition and application of clear policies in terms of external food aid, and that, without a doubt, will continue to be important in the Central American region, at least in the immediate future.

2. In terms of improving food availability, actions should be oriented towards the achievement of intrafamilial food security, since it is a fact that the principle problem in Central America is not the availability of food in national markets, but rather the lack of purchasing power of large sectors of the population.

An important issue concerns the optimal use of donated food, while focusing on the highest risk groups, without losing sight that the final objective is the achievement of food security on the household level.

In spite of the fact that, in the last five years, group feeding programmes have improved in terms of management, that the governments were concerned with strengthening the responsible institutions in terms of logistics and food distribution, and that the donating agencies have reoriented their objectives towards greater efficiency of these programmes, INCAP considers that, for the short and even medium term, the majority of Central American countries will not be self-sufficient in food. Even if that were to be the case, the influence of prices and fluctuations in the international food markets create conditions which can affect the availability, and even more, the population's access to basic food basket. Likewise, it appears that, given the behavior of the governments in the last two decades, it is probable that the Central American countries will continue to accept and utilise external food aid. With this in mind, it is important to emphasize that countries such as Costa Rica and Guatemala have incorporated

some programmes supported by their own resources with objectives and specific orientations; and, more recently, Costa Rica and Honduras have tried to include internally produced food aid as well as that donated. The supply of food coupons to the most marginal households ought to be supported, not only in the implementation of this scheme, but also the evaluation of possible effects that this measure can have.

Likewise, that which INCAP considers of overriding importance, to provide follow-up to the processes initiated in some countries, such as Costa Rica, El Salvador, and Honduras, in the formulation of food and nutrition policies, and to instigate processes in the other countries that, being recipients of large food donations, still have not formulated a national strategy and policy, whether sectoral or nonsectoral, which would permit the identification of internal and external food aid within a framework of food security. This is to say that the feeding programmes, directed toward groups with limited resources, before continuing with an "assistentialist" focus and generating dependency attitudes, should encourage food production at the national, regional, and local levels, as well as focusing on an expansion in employment and consumption of food with high nutritional value, avoiding in this way the irrational use of food aid and prompting governments to search for food self-sufficiency and to deal with nutrition and food problems of the marginal population groups.

3. Finally, it is recognized that in Central America, the absolute number of individuals at risk or suffering from some form of malnutrition has increased during the 1980's and, together with the lines of work described above, it will be necessary to implement urgent action to improve the response capacity of the social sectors, and, at the same time, design interventions in nutrition, health, and food for the undertaking of solutions to the problems of these high risk groups. In this sense, the identification of criteria and indicators is essential for targetting areas and population and for designing interventions.

   The health sector ought to play a protagonist's role in dealing with the problems, through the support of the development of health programmes to improve the nutritional status of the most vulnerable groups, and it ought to continue applying the necessary preventive measures for the control of specific nutritional deficiencies, and cooperate with other sectors in executing integral development programmes.

It is considered that the following general strategies would facilitate the recommended actions.

Decentralisation of Actions: Supportive efforts will be concentrated at both the regional and national/local levels, and improve the interrelation of the different levels of administrative management by that of the national level. The transfer of science and technology will also strengthen the operative levels, by not remaining in the central levels.

Orientation Toward Populations at Risk: Actions ought to be oriented toward the priority populations, in the social and biological risk criteria, in accordance with the magnitude and type of problems, with the objective of optimal use of resources from the point of view of equity, efficacy, and efficiency.

Use of Appropriate Technologies: Actions and resources will be focused on generation and transference of knowledge and technologies pertinent to the necessities and capacity of the countries, taking into consideration the conditions and availability of resources at the local level.

Interagency Coordination: Actions should be taken to maintain and strengthen links between international, regional, and national agencies, whose function and sphere of action concern health, nutrition, and food, in order to expedite a coherent channeling of resources toward the countries.

Promotion of Multisectoral Participation: The focus of work should emphasize the necessity of encouraging participation and a convergence of the different public and private sectors in the detection of and solution for the principal health, nutrition, and food problems within the local health systems framework.

Formation and Development of Human Resources with a Focus on Permanent Education: Actions in this field should be oriented towards strengthening and assuring the development and autonomy of national human resources.

Promotion of Community Participation: Development of science and technology transference is contemplated, which will be usable by the different populations at risk in Central American countries and Panama, which will employ full community participation in all stages of the process.

Multicausal Focus/Specific Interventions: The approach to the problems ought to correspond to the global strategy, but with specific attention to key aspects of and solutions to the problems at the national level. ("Think globally, act locally.")

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Table 1--Prevalence levels of weight deficiency in preschoolers in percentages of the population < 5 years of age less than -2 standard deviations of weight-for-age, Central America, 1965-1967

≤ 10 Percent	11-20 Percent	21-30 Percent	≥ 31 Percent
	Costa Rica Nicaragua Panama	El Salvador Honduras	Guatemala
	1980s		
Costa Rica	El Salvador Honduras Nicaragua (?) Panama		Guatemala

Source: Elaborated, based on national surveys.

Table 2--Percentage of children < 5 years of age less than -2 standard deviations from the reference pattern (WHO-NCHS) of height-for-age distribution

Country	1965-1967	1978	1980	1982	1987-1988
Costa Rica	24.1(1)			6.4(1)	
El Salvador	49.9(1)	44.1(2)			26.8(3)
Guatemala[a]	52.2(1)				57.8(4)
Honduras	46.7(1)				33.9(5)
Nicaragua	36.2(1)	35.0(1)			21.9(6)[b]
Panama	23.5(1)		25.1(7)		

Sources:

(1) National Nutrition Surveys.
(2) Food and Nutrition Diagnostic of El Salvador (1979).
(3) Evaluation of the Food and Nutrition Situation in El Salvador (ESANES-88). Preliminary data.
(4) National Survey of Maternal-Infant Health (1987)..
(5) National Survey of Nutrition in Honduras (1987).
(6) Nutritional Survey Region III.
(7) National Survey of Nutrition of Panama (1980).

[a] 3 to 36 months old.

[b] Survey of Region III.

Table 3--Central America and Panama: Principal causes of death in total population (around 1974 - 1979) (percentage of total of deaths)

	ILLNESSES				
COUNTRY	GASTRO-INTESTINAL	PNEUMONIA	CARDIO-VASCULAR	ACCIDENTS	NEOPLASMA
GUATEMALA (1978)	17.7	14.4	3.8	7.1	2.9
EL SALVADOR (1974)	13.3	4.5	3.3	6.0	NA
HONDURAS (1978)	9.4	3.8	8.9	3.2	2.8
NICARAGUA (1978)	13.6	4.1	11.2	7.5	3.2
COSTA RICA (1979)	NA	NA	16.7	10.6	16.3
PANAMA (1974)	5.6	7.3	12.3	8.8	7.8

Source: Gallardo and Lopez, 1986.

NA = Data not available.

Table 4--Central America: Illiteracy rates per year, sex, residence, and population group

COUNTRY	YEAR	WOMEN	MEN	TOTAL
GUATEMALA	1981	51.5	40.0	
	1985[a]	52.9	37.4	
	1987	47.6	37.1	
	rural	66.8		
	indigenous	75.0		
EL SALVADOR	1980[b]	30.3		
	rural	45.5	39.0	
	urban	19.6	10.3	
HONDURAS	1985[a]	41.6	39.3	
	rural	52.6		
	urban	21.4		
NICARAGUA	1971[a]	42.9	42.0	
	rural	67.0	63.8	
	urban	22.1	16.1	
	1980[b]			12.9
COSTA RICA	1984[a]	7.4	7.3	
PANAMA	1985[a]	12.3	11.0	
	1986[b]	13.7	12.7	
	indigenous	69.8	52.4	

Sources: UNESCO, Statistical Yearbook 1987; Lazaro de Leon, 1988.

[a] 15 years +.

[b] 10 years +.

Table 5--Hygiene environment

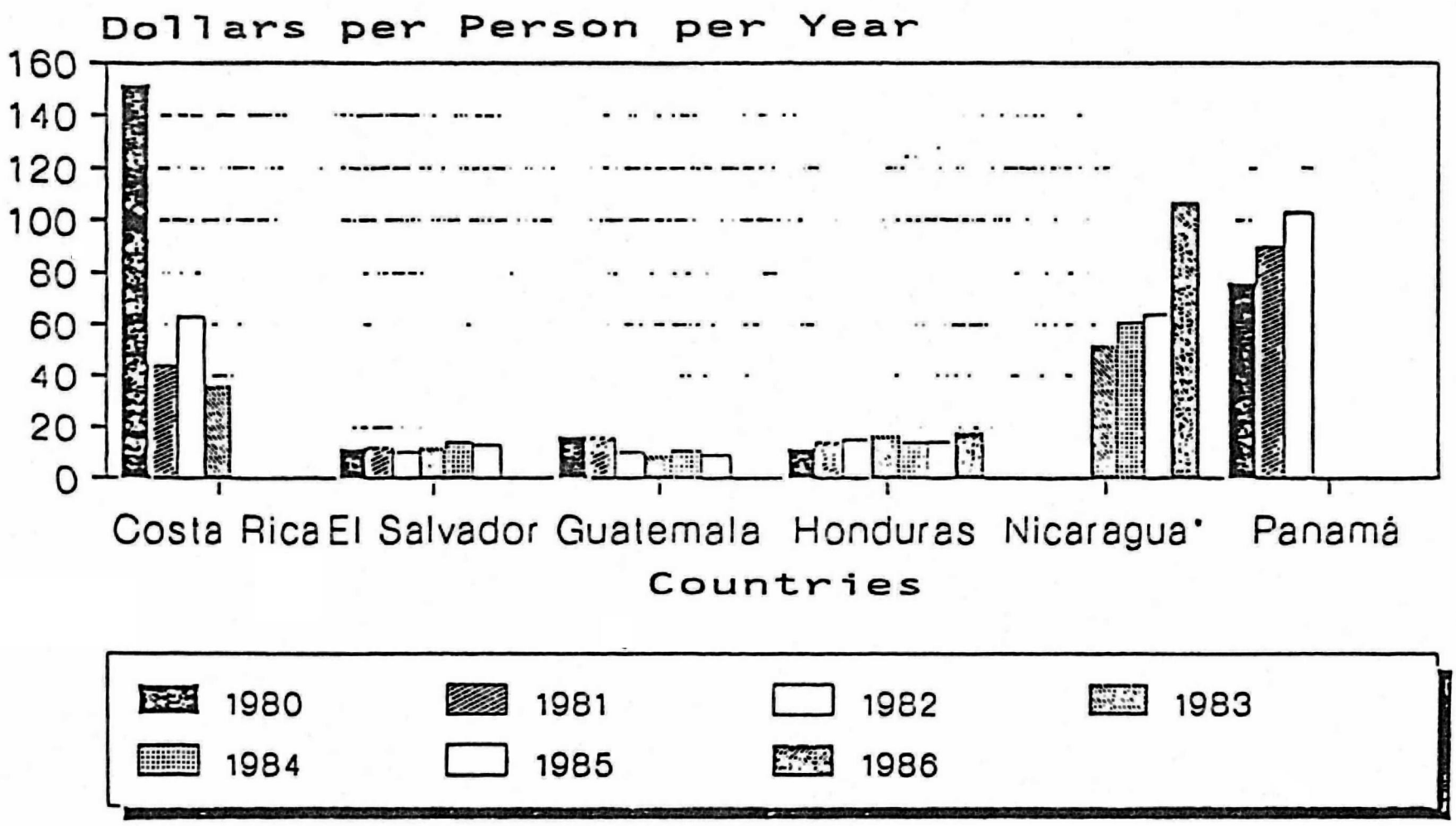
COUNTRY	YEAR	PERCENTAGE OF HOUSES WITH RUNNING WATER IN HOME	PERCENTAGE OF HOUSES WITH EXCREMENT DISPOSAL (some type)
GUATEMALA	(1981-1987)	28.4 - 37.9	56.8 - 65.3
EL SALVADOR	(1986)	72.4	[a]
HONDURAS	(1987)	54.1	56.2
NICARAGUA	----	NA	NA
COSTA RICA	(1985)	92.0	93.0
PANAMA	(1980)	78.3	85.5

Source: Elaborated, based on national surveys.

[a] Available information is not trustworthy.

NA - Information not available.

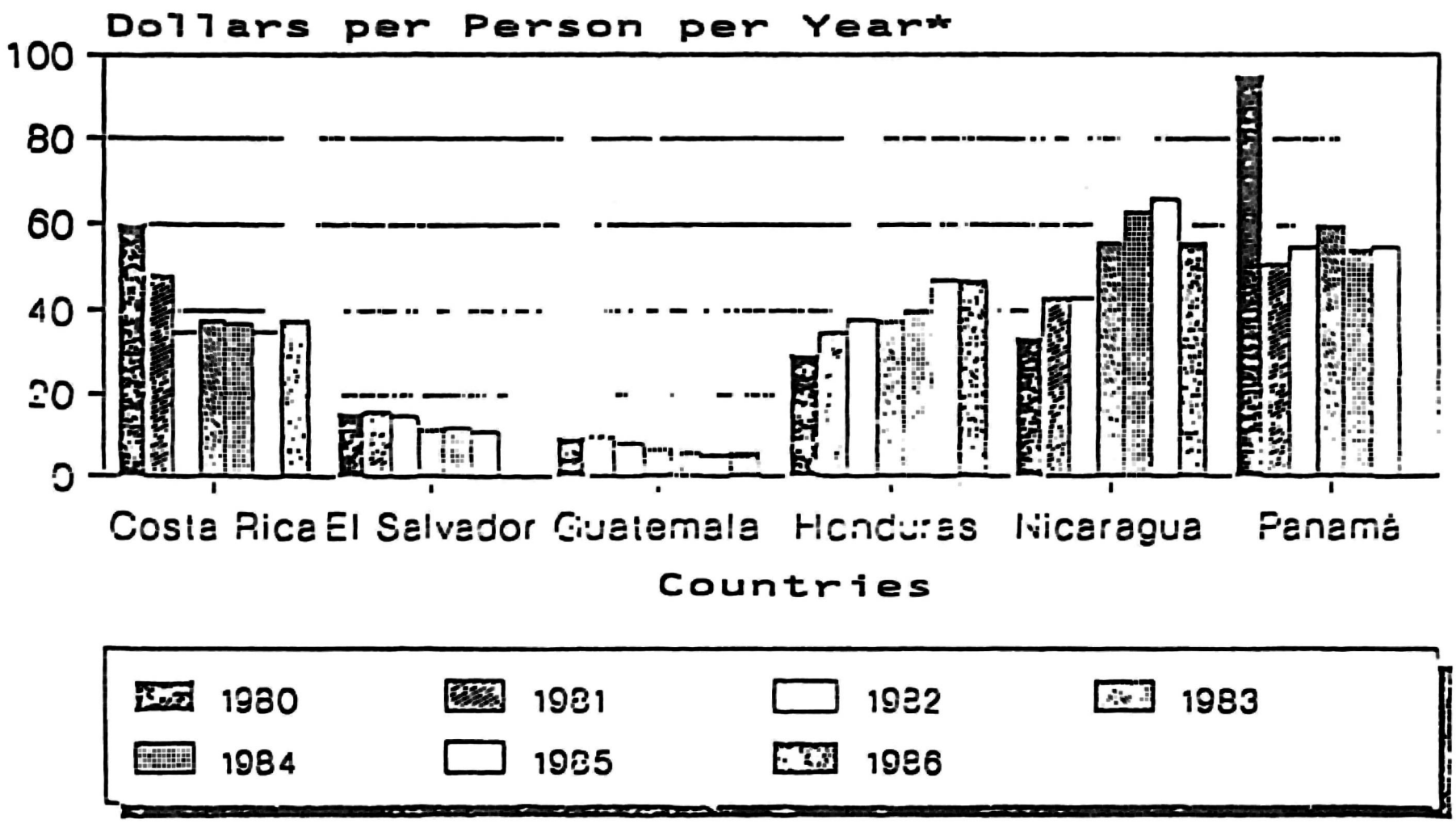
Figure 1--Distribution of health expenditures



Source: CEPAL, on official figures and from the IMF.

-* Corresponds to sanitation and social security and assistance.

Figure 2--Distribution of education expenditures



Source: Elaborated, based on data from IDB and CEPAL.

* Based on rates from 1970 (millions).