



Hunger and Malnutrition in the Countries of the Association of Caribbean States (ACS)

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Hunger and Malnutrition in the Countries of the Association of Caribbean States (ACS)

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This is the third of three sub-regional reports contemplated in the Memorandum of Understanding set forth in 2003 between the WFP Regional Office for Latin America and the Caribbean and ECLAC.

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FOREWORD

The current nutritional situation of Latin America and the Caribbean is another indicator of its social inequalities. With food production currently tripling the energy requirements of the population, there are 53 million people who have no access to sufficient food, whereas 7 percent of children under five have low weight and 16 percent have low height per age.

In this way, the characteristics shown by the nutritional profile of the Latin American and Caribbean population are not random but a reflection of the great income inequalities and of the insufficient relevance given to food and nutrition in these countries' political agendas.

Aware of the importance of the problem, in 2003 the Economic Commission for Latin America and the Caribbean (ECLAC) and the Regional Office of the World Food Programme (WFP) signed a three-year agreement aimed at describing and analyzing the characteristics of hunger and malnutrition in the countries of the region. The first report gave a global look at the regional problem and analyzed the Central American countries in detail. The report concluded that the sub-region's greater vulnerability lies in the high incidence that inequality has in causing hunger, together with certain problems of supply stability (derived from the environmental vulnerability and the lower price of coffee), and the high level of chronic malnutrition in the sub-region. The second report analyzed the situation of four Andean countries, underlining the major vulnerability problems affecting the poor and indigenous populations living in rural mountain ranges.

On this occasion the research deals with the reality of hunger and malnutrition in the countries of the Association of Caribbean States (ACS), which groups 25 Caribbean, Central American, and South American countries.¹ It provides an analysis of the phenomenon in these countries within the regional context. This study, the main findings of which are provided in the following pages, includes a description of the characteristics of extreme poverty, food security, malnutrition, and micronutrient deficiencies, with a look at the prospects of fulfilling the Millennium Development Goals. As well, it identifies vulnerable groups and the economic effects associated with malnutrition, and describes the main policies and programs under implementation, together with proposals aimed at maximizing the cost effectiveness of such interventions.

¹ Antigua and Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Dominican Republic, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Suriname, Trinidad and Tobago, and Venezuela.

I. Poverty and Hunger vis-a-vis the Millennium Development Goals

A. Current situation

Studies undertaken by ECLAC in the region over the past biennium, as well as those carried out by various researchers around the world indicate that food insecurity and hunger are phenomena closely linked to extreme poverty, but having specific characteristics². This implies that policies aimed at eradicating both phenomena must develop complementary efforts but have independent components targeting hunger and poverty.

As shown in the graphs below, extreme poverty³ increases the probability of undernourishment⁴ and malnutrition⁵, but does not define them. Countries with high indexes of extreme poverty also have high rates of undernourishment, but extreme poverty explains less than 40 percent of the cases of undernourishment. Among the ACS countries, Costa Rica, with both indicators under 6 percent, contrasts with Mexico, which has similar levels of malnutrition but whose extreme poverty is close to 20 percent. In turn, El Salvador, Venezuela, Panama and the Dominican Republic have indigence rates similar to Mexico's, while their levels of undernourishment vary between 2 and 26 percent.

a) Extreme Poverty

According to 2004 projections, 96 million people, or 18.6 percent of Latin America's total population, would be in a state of extreme poverty, whereas the total amount of poor (including the extreme poor) is estimated at 222 million people (42.9 percent of the Latin American population). The stability of these population volumes over the past decades highlights the difficulty that the region faces in curbing this scourge.

Among the ACS countries having the highest levels of extreme poverty are Haiti, Guatemala, Nicaragua, and Honduras.

² Studies carried out over the past ten years verify an income-caloric intake elasticity equivalent to .2 - 0.3 (Strauss and Thomas, 1995-1998, and Hoddinott, Skoufias and Sashburn, 2000); a -0.5 per capita income-low weight elasticity in school children (Hadad et al, 2003), and a negative association between per capita income and percentage of boys and girls with low birth weight (Berhman and Rosenzweig, 2004). For further details see "Hunger and Malnutrition", J. Berhman, H. Alderman, and J. Hoddinott. Copenhagen Consensus Challenge paper, 2004.

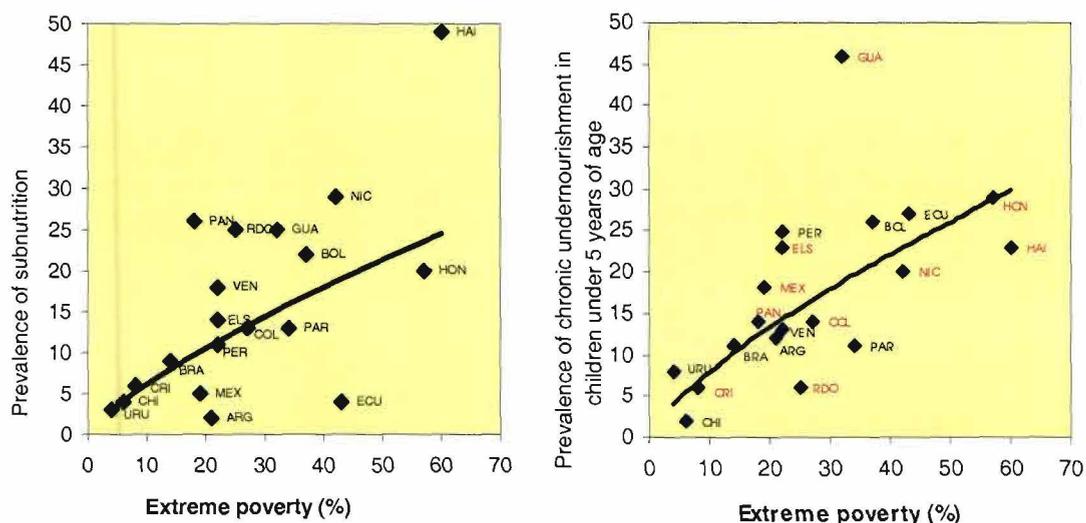
³ Family per capita income below that required to purchase the basic food basket that fulfills all minimum daily energy requirements. Also called indigence.

⁴ Energy intake below the physiological minimum required in each country (around 1,800 Kcal/person/day), depending on its demographic structure.

⁵ Anthropometric ratios below -2ds of the median for the age, according to the PAHO/WHO. Low weight=global malnutrition, low height=chronic malnutrition.

Graphic I.1

LATIN AMERICA AND THE CARIBBEAN (18 COUNTRIES): RELATIONSHIPS AMONG MALNUTRITION, UNDERNOURISHMENT, AND EXTREME POVERTY



Source: ECLAC/WFP, Hunger and Inequality in the Andean Countries, 2004.

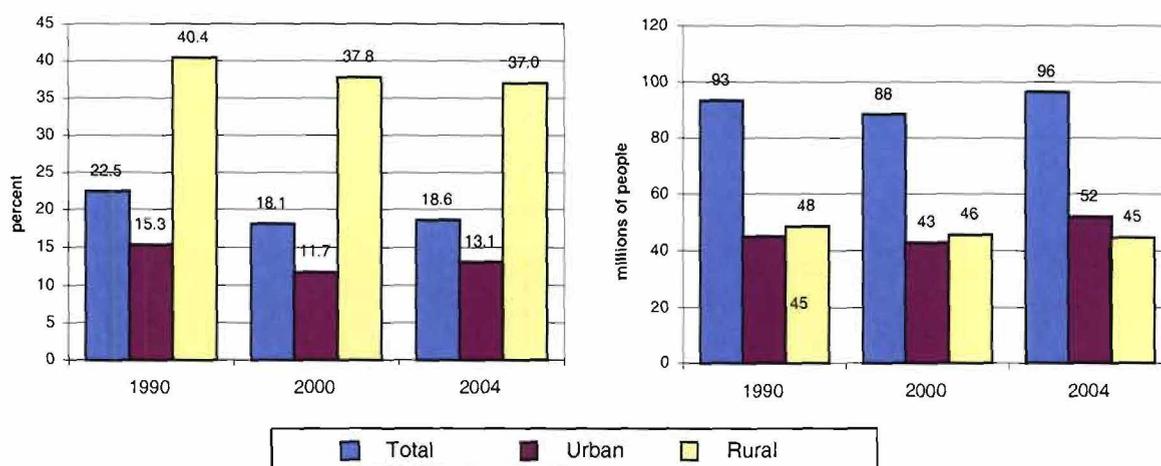
In the case of the Caribbean, the heterogeneity of sources and methodologies used to estimate the incidence of extreme poverty makes such results not directly comparable to those of Latin America⁶. Nevertheless, some illustrative facts are worth mentioning. To begin with, Haiti is the country with the highest incidence of poverty and indigence, not only in the Caribbean, but in the whole continent, and is one of the most dramatic cases of extreme deprivation, worsened by recurrent social conflicts, for which reason it should receive special attention of international efforts at poverty mitigation. Secondly, we find an enormous heterogeneity in the magnitude of poverty among the countries in the sub-region, with Dominica, Guyana, Saint Vincent and The Grenadines, and Suriname, showing high poverty rates, in contrast to the Bahamas, which has a poverty rate similar to that of countries with a high level of economic development.

In the Caribbean islands, as well as in the rest of the region, the incidence of poverty (global and extreme) in the rural areas is greater than that in the urban areas. In Jamaica, for instance, rural poverty triples the incidence of urban poverty; whereas in Guyana almost the entire population in the rural areas is poor. A similar situation occurs in Belize, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and The Grenadines. In contrast, in Barbados, the available background indicates a higher incidence of urban than rural poverty.

⁶ Measuring poverty and inequality continues to be a major challenge for the Caribbean countries, mainly due to the scarcity of data from household surveys. There are, nevertheless, some activities to measure the living conditions of the population being carried out that merit mention: in Jamaica, since 1988 they have carried out an annual survey on living conditions; in Guyana, two surveys were carried out in the 1990s; and, since 1995, the Caribbean Development Bank has promoted poverty evaluations in Anguilla, Belize, Dominica, Grenada, British Virgin Islands, St. Kitts and Nevis, St. Lucia and St. Vincent and The Grenadines.

Graphic 1.2

LATIN AMERICA^{A/} : EVOLUTION OF EXTREME POVERTY, 1990 - 2004^{B/}
(in percentages and millions of people)



Source: ECLAC, from forecasts made on the basis of the household surveys of the respective countries.

a/ Estimate corresponding to 19 countries of the region (including Haiti).

b/ The numbers for 2004 correspond to one forecast.

b) Food insecurity and undernourishment

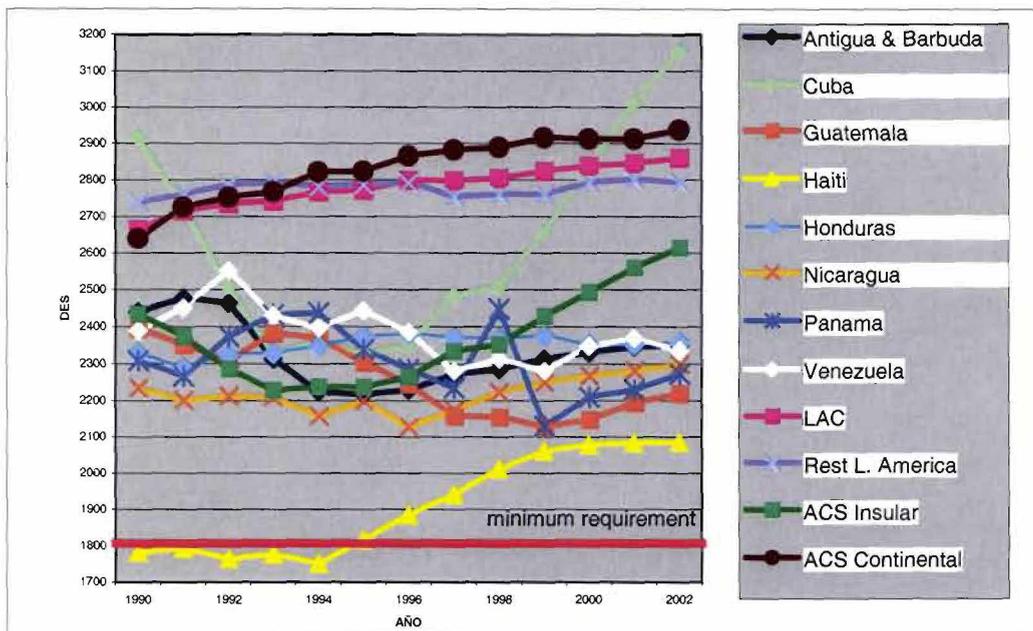
Latin America and the Caribbean (LAC) is a region rich in food, with great extensions of fertile land and an agricultural and livestock production representing a little over 9 percent of the total GDP, which places it in the mid-high levels of food supply⁷. Thus, in 2002, sufficient food inputs were produced to provide for the minimum energy requirements of over 1,800 million people, more than triple the regional population.

In spite of the above, there are significant differences among the economies with greater or lesser ability to satisfy the potential demand for food products, a reflection of the different agricultural development, productivity, and income levels. For instance, even though by 2000 agricultural productivity in the region had reached US\$3,307 per person, in three countries – two of which are located in the Caribbean basin – farming production was less than one half of that figure (Haiti and Honduras).

From 1990 to 2002, food supply showed significant heterogeneity, with some countries having a Dietary Energy Supply (DES) of over 3,000 kilocalories per person per day, with others having less than 2,500 kcal/per/day. Standing out amongst the latter are Guatemala, Haiti, and, partially, Nicaragua, countries meeting the minimum requirement but exhibiting high vulnerability by having a DES of less than 2,200 kcal/per/day.

⁷ See Social Panorama of Latin America 2002-2003, p. 101

Graphic 1.3
ACS MEMBERS (EIGHT COUNTRIES): EVOLUTION OF THE
DIETARY ENERGY SUPPLY (DES)
1990 AND 2002



Source: ECLAC, own elaboration based on FAO Balance Sheets

Another characteristic worth emphasizing is the variability shown by the food supply from 1990 to 2002, which is an unequivocal indicator of problems with supply stability. In Antigua and Barbuda there was a significant decrease in the middle of the past decade (close to 2,200 kcal/per/day in 1995). A partial recovery later on failed to reach 1990 levels. A similar situation can be observed in Guatemala, where there is an even stronger decrease in the supply, which bordered 2,100 kcal/per/day towards 1999.

As can be seen in the following chart, among ACS countries the amount of undernourished people in the period 2000-2002 is estimated at 28.7 million, most of whom (almost 74 percent) are concentrated in Colombia, Guatemala, Haiti, Mexico, and Venezuela.

The fact that high levels of undernourishment and child malnutrition persist together with sufficient food availability is related to high inequality in terms of access to food. Such inequality is largely explained by low incomes and subsequently low food purchasing power, particularly evident in Colombia, El Salvador, Jamaica, Surinam, Saint Vincent and The Grenadines, and Trinidad & Tobago, which show a DES of around 2,500 kcal/per/day and undernourishment above 10 percent. This is in addition to problems of low effectiveness of food policies aimed at mitigating the risks of those most lacking.

Table 1
ACS MEMBERS (25 COUNTRIES): UNDERNOURISHED POPULATION
In percentages, 2000-2002

Country	Undernourished Population	Distribution Within Region
Antigua and Barbuda	17.9	0.0
Bahamas	5.5	0.1
Barbados	3.2	0.0
Belize	5.1	0.0
Colombia	13.0	19.2
Costa Rica	4.0	0.6
Cuba	3.0	1.2
Dominica	8.2	0.0
El Salvador	11.0	2.4
Grenada	4.9	0.0
Guatemala	24.0	9.7
Guyana	9.0	0.2
Haiti	47.0	13.1
Honduras	22.0	5.0
Jamaica	10.0	0.9
Mexico	5.0	17.3
Nicaragua	27.0	4.8
Panama	26.0	2.7
Dominican Republic	25.0	7.3
Saint Kitts and Nevis	8.3	0.0
San Vicente and The Grenadines.	12.5	0.1
Santa Lucia	7.8	0.0
Surinam	11.0	0.2
Trinidad and Tobago	12.0	0.5
Venezuela	17.0	14.5

Source: FAO Food Balance Sheets

c) Malnutrition

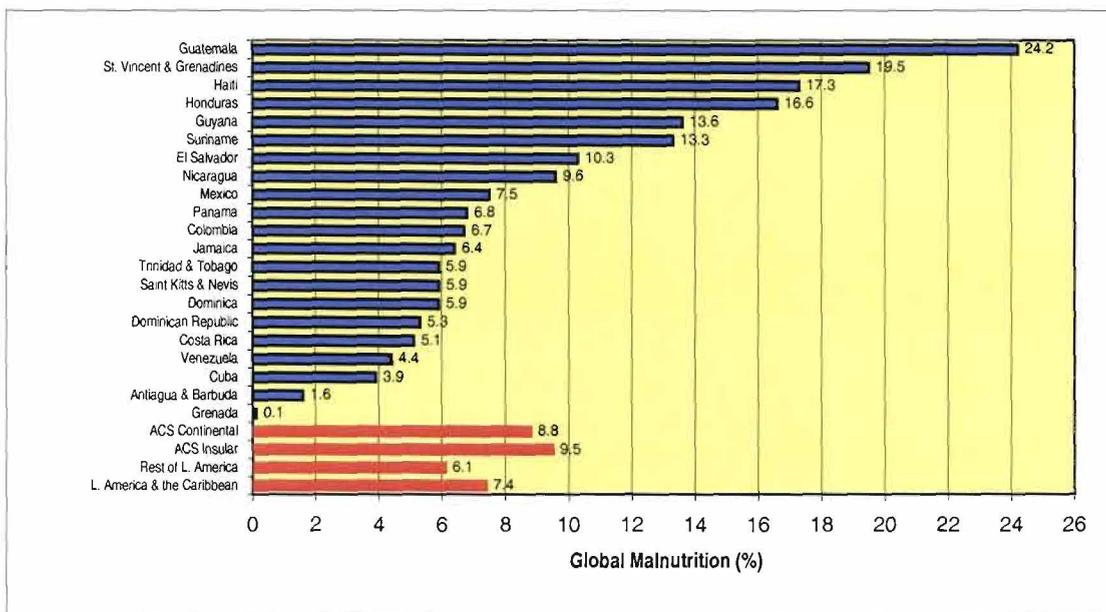
Malnutrition among children under five years of age is one of the most direct effects of hunger and, in light of the available empirical evidence, it is still a major challenge to be faced by the region.

Low birth weight (LBW) – under 2500 grams – increases the risk of death in infancy and of malnutrition throughout the life cycle, negatively affects physical and intellectual development, reduces the ability to learn and to work in adulthood and, among women, increases the probability of reproducing the phenomena in subsequent generations.

In LAC, the percentage of LBW reaches 10 percent, underscoring the high rates found within the AEC, in the Dominican Republic (11 percent), Guyana (12 percent), Surinam (13 percent) and, particularly, in Haiti (21 percent) and Trinidad & Tobago (23 percent). These last two cases surpass even the levels found in Sub-Saharan Africa. On the contrary, Cuba and Belize show a low level of LBW (6 percent), which is lower than the average observed in the most industrialized nations.

The prevalence of global or weighted⁸ malnutrition among boys and girls in the Caribbean basin shows positive improvements between the periods 1988-1001 and 2000-2002; however, as can be seen in the following graph, current levels remain high in many of the countries, particularly in Guatemala, Saint Vincent and The Grenadines, Haiti, Honduras, Guyana, Surinam, and El Salvador, where global malnutrition affects between 10 and 24 percent of the children under five years of age.

Graphic 1.4
ACS MEMBERS (21 COUNTRIES): GLOBAL MALNUTRITION IN CHILDREN
UNDER FIVE YEARS OF AGE
1996 – 2002



Source: ECLAC, own elaboration based on data from the World Bank, UN Department of Economic and Social Analysis (DESA), Macro – Demographic and Health Survey (DHS), UNICEF - Multiple Indicators Cluster Surveys, UN Standing Committee on Nutrition and country reports (Antigua and Barbuda, Grenada, Dominica, Saint Kitts and Nevis).

In the case of chronic malnutrition (low height-for-age), highly prevalent in the region, Guatemala stands out, since even though it has achieved significant progress it still presents the worst situation among all the Latin American and Caribbean countries. Together with Honduras, moreover, Guatemala presents a deficit that is over ten times greater than the expected average value (2.5 percent), followed by Haiti, El Salvador and Nicaragua.

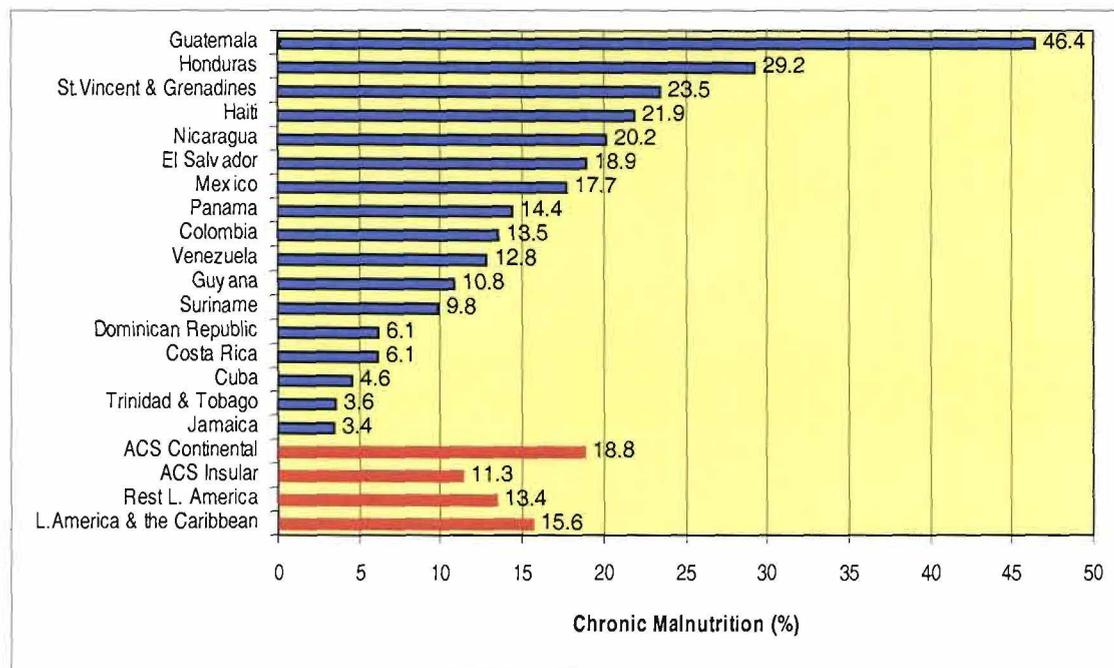
When analyzing the number of malnourished boys and girls under five years of age, ACS countries with relatively low rates but significant population groups affected stand out.

⁸ Monitoring indicator for the hunger related target of the Millennium Goals

Thus, of the 2.4 million of these children with low weight, 838,000 are Mexicans, 451,000 are Guatemalans, 320,000 are Colombians, and 200,000 are Haitians.

In addition, among the 4.9 million children showing stunted growth there are 1.98 million Mexicans, 865,000 Guatemalans, 646,000 Colombians, 354,000 and 285,000 Hondurans.

Graphic 1.5
ACS MEMBERS (17 COUNTRIES): CHRONIC MALNUTRITION IN
CHILDREN UNDER FIVE YEARS OF AGE
1996 - 2002



Source: ECLAC, own elaboration based on databases from the World Bank, UN Department of Economics and Social Analysis DESA – Demographic and Health Survey DHS, UNICEF – Multiple Indicators Cluster Surveys, UN Stunting Committee on Nutrition and country reports (Antigua and Barbuda, Grenada, Dominica, Saint Kitts and Nevis).

The greater occurrence of chronic malnutrition above that of global malnutrition that was observed in the region’s continental countries (where chronic malnutrition doubles global malnutrition rates) is not evident in the Caribbean countries. In the Caribbean, chronic malnutrition rates tend to be similar to or lower than global malnutrition rates, independently of the level of severity reflected by these rates. The existing background information does not allow us to venture a relatively reliable hypothesis to explain this phenomenon, but it would be worth it to evaluate the studies in depth to analyze, for example, the effect of socio-cultural factors associated to the diet.

d) Micronutrient Deficiencies

Micronutrient deficiencies constitute a “hidden” form of malnutrition and a serious public health problem. The most frequent types of deficiency are those related to iron, vitamin A, and zinc. To a lesser degree, other deficiencies evident in the AEC countries

include folic acid, some vitamin B complex and iodine deficiencies. These latter deficiencies are associated to geographic and local epidemiology factors as well as feeding behaviours.

Iron deficit anaemia is one of the major pathologies related to micronutrient deficiencies in the Caribbean, with greater prevalence among pregnant and breastfeeding women and in children under 2 years old. Some examples are:

- In Jamaica (1987), applying cut-off points proposed by the WHO (Haemoglobin below 11 gr/dl) to a sample of more than 5,500 people, 78 percent of children under 2 years old, 12 percent of children 5-9 years old, and 52 percent of pregnant women were diagnosed with anaemia (Simmons, 1994).
- In Grenada (1986) 53.6 percent of pregnant women, 61.7 percent of breastfeeding women, and 59.7 percent of preschool children showed some level of anaemia and a ferritine level lower than 12 micrograms/litre (the limit of sufficiency for iron deposits).
- Cuba recorded an iron deficiency rate of 43.1 percent, with three out of each four persons affected having slight levels. Pregnant women with low pre-conception weight and expectant mothers in their 14 to 23 weeks were mostly affected (Sánchez Salazar et al, 2001).
- In Mexico (1999), anaemia prevalence of 27.8 percent among pregnant mothers between 12 and 49 years old was identified. Prevalence among non-pregnant mothers was 20.8 percent, with a higher occurrence in rural areas (Shamah-Levy T. et al., 2003). Anaemia reaches its greatest value during the second year of life, affecting half of all children. The prevalence of iron deficiency reaches 52 percent of the children under five years of age (2/3 of children between one and two years old, and less than half of those between three and four years of age) (Rivera et al., 2003).
- In Venezuela, anaemia prevalence of 38.1 percent was discovered in children from two to seven years old. In a significant percentage of these children, anaemia was not a secondary manifestation of malnutrition, since only 14.4 percent had low height and 9.4 percent had low weight (Castejón et al., 2004).
- In Dominican Republic (1993) between 21 and 38 per cent of school children showed anaemia prevalence in different regions of the country (Vásquez, 2005).

Iron absorption deficiency is not always the main cause for anaemia, since other micronutrients also contribute to the condition. In Costa Rica, of the 22.1 percent of breastfeeding mothers found to be anaemic, the deficiencies were of 48.7 percent in iron, 84.2 percent in folic acid, 5.3 percent in vitamin B12, and 4.9 percent in vitamin A. Low socioeconomic level was the key factor explaining the deficiency (Blanco A., et al., 2003).

In the case of Vitamin A, available studies emphasize its moderate importance in Honduras together with the fact that it reaches 27 percent of all children under five in Mexico.

Finally, the existent background information indicates that zinc deficiency would not represent significant nutrition problems among the ACS countries, except in Mexico, where a prevalence of 33 percent was identified among children under five years of age.

Taking the above into account, policy orientation should focus basically on lowering the incidence of iron deficit, but without neglecting the epidemiologic vigilance or the other programs relating to micro nutrients fortification.

e) The most vulnerable groups

Although there is insufficient information to support these affirmations exhaustively, some examples do appear to indicate that, like in the rest of the region, the main poverty and malnutrition problems in the ACS countries are found among children under five years of age and among women belonging to ethnic minorities and poor households living in rural areas. Consequently, these characteristics, together with the risks derived from environmental problems that arise from the high frequency of natural disasters and from geopolitical factors ensuing from social and armed conflicts, become the key factors of nutritional vulnerability.

In analyzing information about the geographical zones, the results from the DHS⁹ and MICS¹⁰ show that the rural zones have incidence levels between 1.5 and 2.5 times higher than those of urban zones, in both global and chronic malnutrition.

In the case of Guatemala's ethnic differences (1998) it was found that 35 percent of children from indigenous groups and only 21 percent of non-indigenous children showed low weight for age, the values of which rise to 67 percent and 34 percent, respectively, with respect to stunting. On the other hand, in the case of Trinidad & Tobago (2000) the most vulnerable ethnic group is composed of people of Indian origin, among whom global malnutrition reaches ten percent, compared to only four percent for the rest of the population, there being no differences in the case of chronic malnutrition (3.5 percent and 3.6 percent, respectively).

B. Progress in meeting the poverty and hunger targets

There are two targets to be met by 2015 under Millennium Development Goal Number 1: to reduce by half the proportion of people living in extreme poverty in 1990, and to reduce by fifty percent the incidence of hunger in 1990 (as per the undernourishment and global malnutrition indicators).

a) Progress in extreme poverty

Towards the year 2000, the progress made in reducing extreme poverty in Latin America was forty percent, a figure equivalent to the time fraction that had elapsed (between 1990 and 2015),¹¹ and reflecting an adequate pace to meet this goal, should the advance process be linear. At the start of the new millennium, however, most of the countries experienced an economic and social setback, with the subsequent increase in extreme poverty, which brought to about 34 percent the percentage of progress made by 2004, although more than half of the time envisaged to meet the target has already elapsed.

In the case of the English-speaking Caribbean countries, the data available indicate that, at least in Guyana and Jamaica, poverty¹² declined significantly during the 1990s, from 43 percent in 1993 to 35 percent in 1999, in the first instance; and from 28 percent in 1990 to

⁹ Demographic and Health Survey: Colombia 2000, Guatemala 1995 and 1998, and Haiti 2000.

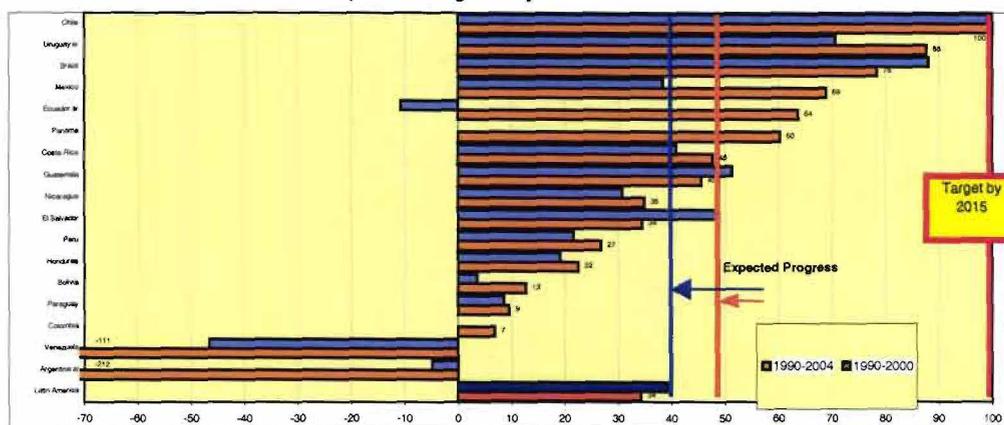
¹⁰ Multiple Indicator Cluster Surveys: Guyana 2000, Dominican Republic 2000, Surinam 1999-2000, and Trinidad and Tobago 2000.

¹¹ The target for LAC is to reduce extreme poverty from 22.5 percent (observed in 1990) to 11.5 percent in 25 years (by 2015). Consequently, after 10 years have elapsed (1990-2000), a reduction equivalent to 4.5 percent percentage points would be expected, and a reduction of 4.4 percent was confirmed. For further information, see Social Panorama of Latin America 2002-2003.

¹² Poverty (in general), not extreme poverty, variation data was used as a proxy estimate of the process.

17 percent in 2001 in the second instance, which would presumably enable both countries to meet the target¹³ if the same pace is kept in both of them. There are no comparable data for other countries, which precludes making any reliable estimation about their degree of progress in meeting this target.

Graphic 1.6
LATIN AMERICA AND THE CARIBBEAN: PROGRESS TOWARD
THE EXTREME POVERTY TARGET
in percentages, by 2000 – 2002



Source: ECLAC, based upon special processing of each country's Household Surveys.
a/ Urban sector

b) Progress in reducing undernourishment

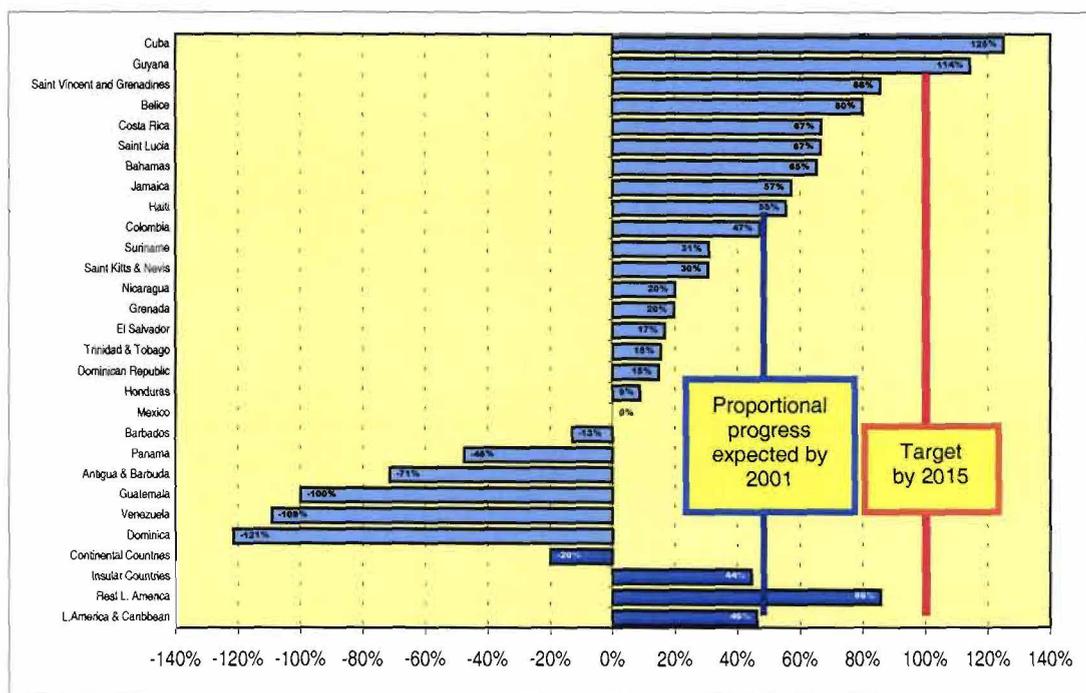
Latin America and the Caribbean show proper progress with respect to the time elapsed by 2002 (44 percent). As in the case of extreme poverty, nevertheless, the evolution has been heterogeneous, such the case of the continental ACS countries, where there has been a twenty percent setback.

There are few countries showing, up to now, progress similar to or greater than expected. Among them, it is relevant to mention Cuba, Guyana, Saint Vincent and The Grenadines, Belize, Costa Rica, Saint Lucia, and Bahamas. On the other hand, Dominica, Venezuela, Guatemala, Antigua and Barbuda, Panama, and Barbados record patent setbacks.

Finally, the rest of the countries record insufficient progress (even nil) and, unless there are structural changes made in their production and commercialization systems, together with significant decreases in food access inequality, such countries are highly unlikely to meet the undernourishment target.

¹³ The national report on the MDGs in Guyana estimates that the target can be met if economic growth reaches a 5-6 percent average per year (Government of Guyana and United Nations 2003).

Graphic 1.7
ACS MEMBERS (25 COUNTRIES): PROGRESS TOWARD THE
UNDERNOURISHMENT TARGET
In percents, around 2001



Source: ECLAC, based on the FAO data base, Food Balance Sheets for the three years 2000-2002

b) Progress in the reduction of malnutrition

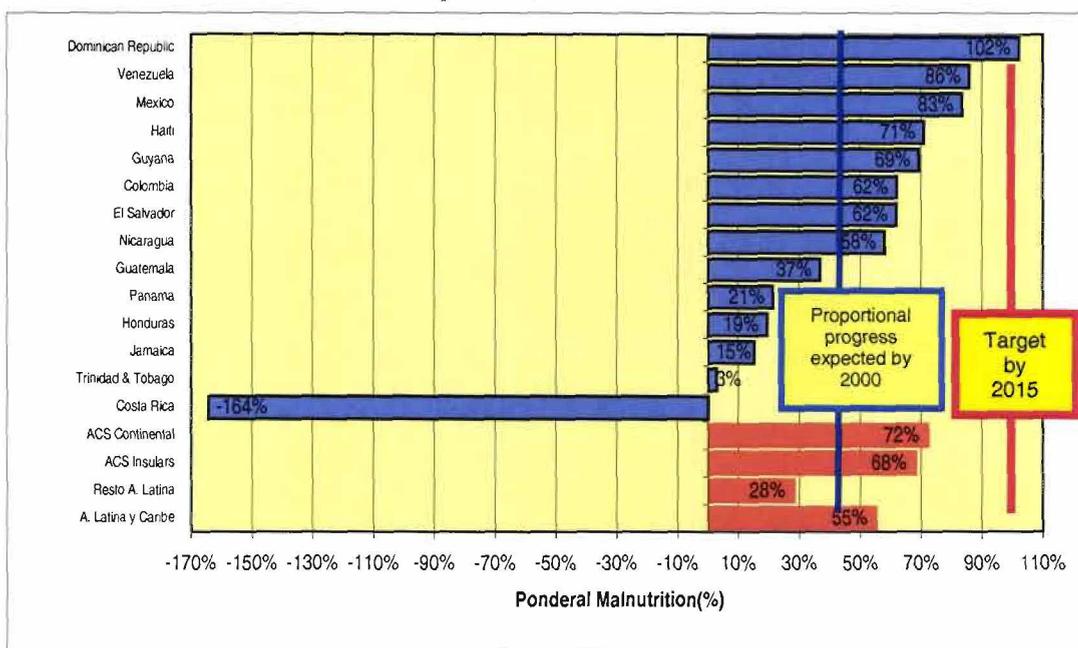
Even though the situation is more auspicious, progress made in respect of global malnutrition presents a similar heterogeneity to that of undernourishment. Together, the ACS countries show a proportionally higher than expected progress with respect to the time that had elapsed, but while some countries have met the target, others show little progress, or even setbacks. Consequently, the most worrying situation would be that of Costa Rica, which records a marked setback; nevertheless, the problem is less serious if we take into account its low incidence. The situation of Trinidad and Tobago, Jamaica, Honduras, Panama, and Guatemala is also worrisome; these countries show insufficient progress to date and will probably not meet the target unless they strengthen their food and mother-infant health programs.

The rest of the countries for which data is available show progress greater than proportion of time that had elapsed, with the Dominican Republic, Venezuela, and Mexico standing out because, by 2000 they have already met, or are close to meeting, the expected 2015 target. Consequently, unless there is significant economic deterioration or natural disasters, it is likely that they will sustain such progress throughout the coming decade.

Graphic 1.8

ACS MEMBERS (14 COUNTRIES): PROGRESS TOWARD THE GLOBAL MALNUTRITION TARGET

In percents, around 2000



Source: ECLAC, own elaboration based on data bases from the World Bank, UN Department of Economic and Social Analysis (DESA), Macro – Demographic and Health Survey (DHS), UNICEF - Multiple Indicators Cluster Surveys, UN Standing? Committee on Nutrition.

II. The cost of hunger and malnutrition

To resolve the paradox of the hunger problem in a continent whose food supply more than triples the requirements of its population is, above all, an ethical imperative, as it violates an inalienable universal right.

Malnutrition is the most direct effect of hunger in people and, as such, it turns into a channel from which a series of negative consequences covering various dimensions derives, among which it is worth highlighting the impacts on: i) health, ii) education, and iii) productivity, and becomes one of the main mechanisms for the inter-generational transmission of extreme poverty and inequality. Some of these effects appear concomitantly with malnutrition, while others surface throughout peoples' lives, including an increase in the probability of later malnutrition among those who have suffered from it in the early stages of the life cycle.

Given its negative effects, which significantly increase public and private costs (direct and indirect) due to their impact on consumption, production, and economic development, solving this problem is an economically rational strategy; its mitigation, therefore, leads to a significant increase in private and social benefits. According to the FAO, at the global level, these direct costs could represent some US\$30,000 million per year¹⁴.

Among the main effects and costs associated with this problem are the following:

¹⁴ FAO. The state of food insecurity in the world, 2004, Italy - *SOFI 2004*-).

a) **Health:** Malnutrition increases the vulnerability of people to various diseases, affecting their survival. High rates of mortality and morbidity bring an increase that is directly proportional in terms of both private and public costs. Among these it is worth underscoring the following: private cost of care and treatment, greater demand generated in the public health system (medical care, treatments, infrastructure, inputs and medications) and the alternative costs of time devoted and human capital lost, with the subsequent effect on individual productivity and income.

Among the *effects on mortality*, malnutrition problems during pregnancy bring with a greater risk of low weight at birth, which increases the probability of infant death. Thus, the risk of neonatal death of children with weights between 2,000 and 2,499 grams is four times greater than that of those who weigh between 2,500 and 2,999 grams, and is ten to fourteen times greater than that of children weighing between 3,000 and 3,400 grams.

In the various countries of the Caribbean basin, particularly among Indian groups in rural areas, the youth of pregnant mothers shows consequences even for her own malnutrition which, when combined with the higher consumption of energy derived from pregnancy and childbirth, sometimes results in her own death. Therefore, among pregnant women, deaths associated with anemia (due to a lack of iron) would reach 20 percent of the total (Ross and Thomas 1996; Brabin, Hakimi, and Pelletier 2001).

In the preschool stage, various studies show that malnutrition would explain between 50 percent and 60 percent of mortality. According to the WHO, it contributes 60 percent of those deaths (3.4 million). On the other hand, the meta-analysis of 10 longitudinal studies carried out on children under five years of age indicates that 53 percent of deaths are attributable (directly or indirectly) to this scourge. This is in addition to the fact that chronic malnutrition (the one with the greatest prevalence in Latin America) increases the lethality of many infectious diseases found in the underdeveloped world.

On the other hand, the deficit of micro nutrients also has important effects: the longitudinal studies mentioned above indicate that the risk of dying because of diarrhea, malaria, or measles increases by 20 to 24 percent among children having vitamin A deficiency.

Momentarily isolating the evident emotional cost for the families of children dying from problems associated with malnutrition and the ethical problem involved, from the point of view of production, its lethal effect during the first years of life appears to be responsible for a significant proportion of the loss of human capital, with the subsequent loss of productive capability and the increase of economic costs for society as a whole.

When analyzing some of the effects on morbidity, longitudinal studies show that the fraction of disease attributable to low weight is of 61 percent for diarrhea, 57 percent for malaria, 53 for pneumonia, and 45 percent for measles. This makes plausible the hypothesis that, if preventive work could be carried out, approximately half of the costs being faced by the health system to take care of these diseases could be saved.

The above associations are not unidirectional. In the same way that malnutrition is a major factor causing the appearance of such pathologies, these feed back the malnutrition, thereby generating a vicious circle.

For the long term, malnutrition suffered at critical periods of development significantly increases the risk of developing transmissible chronic diseases such as tuberculosis, and non-transmissible diseases (ECNT) such as coronary disease, hypertension, no-insulin diabetes, among others, in the adult stages. For example, coronary disease, Type 2

diabetes, cerebro-vascular accidents, and hypertension would originate in response to fetal and childhood malnutrition (D. Barker, 2004).

Regarding anemia due to lack of iron, which is the micro nutrient most lacking among the populations of Caribbean countries, it is estimated that 50 percent of women of fertile age and 60 percent of pregnant women are anemic. This deficiency, which may prevail throughout the fertile period and which may, as indicated, have fatal consequences, can be reversed with nutrition that provides the necessary iron supply, whose cost is relatively low considering its effectiveness. In Chile, for example, by fortifying powdered milk with various micro minerals, including iron, they were able to reduce the incidence of anemia by around 80 percent in less than three years.

With respect to neurological and psycho-motor development, malnutrition has direct effects in the first years of life, particularly due to the insufficiency of micro nutrients such as iron and zinc, or in the neonatal period, when the supply of folic acid (FA) is crucial. For this last nutrient, the Chilean experience shows that the addition of 2.2 mg of FA per kg of flour (to reach an average intake of 400 microgr/day in women of reproductive age, which was achieved in 48 percent of the population studied) would have generated a reduction of 40 percent in the incidence of congenital malformations derived from neural tube diseases (NTD) among newborns, between the biennia 1999-2000 and 2001-2002, with a cost of around US\$0.23 per ton of flour.

When analyzing the economic effects of the relationships mentioned above, one finds that the greater probability arising from the epidemiological profile of malnourished people proportionally increases the costs in the health sector, to which one must add the costs assumed by the people and their relatives as a result of the time and quality of life lost as a result of such diseases and mortality. In the case of the United States, a cost increase equivalent to US\$263 million has been estimated in 1995, simply as a result of low birth weight arising from tobacco consumption among mothers. If this consumption represents between 17 percent and 26 percent of the total amount of children with this deficit (Lightwood et al 1999)¹⁵, such incremental costs would rise to US\$ 1,000 million for the total amount of children having low weight at birth.

In developing countries one could imagine that the costs are lower because there are fewer costs by virtue of the system's coverage deficits, so that a great part of the morbidity problems are not taken care of and are directly translated into mortality. Strictly speaking, the cost is even higher if one analyzes both the private and public costs derived from the years of life lost (lower life expectancy of the population because of maternal, perinatal and child mortality, less productivity), which are not reflected in the sector's budget appropriations but which must nevertheless be accounted for when making an economic analysis.

- b) **Education.** As in the case of health, the relationship between malnutrition and a poorer educational result depends on the intensity of the malnutrition and there are two processes present:
- The first one is the result of problems with neurological development, and starts off between the gestation stage and 24 months of life.

¹⁵ James M. Lightwood, Ciaran S. Phibbs, and Stanton A. Glantz "Short-term Health and Economic Benefits of Smoking Cessation: Low Birth Weight". PEDIATRICS Vol. 104 No. 6 December 1999, pp. 1312-1320

- The second one is derived directly from food deficiency, which affects the ability to concentrate in the classroom and limits learning. This is concomitant with the preschool and school stages. And may not necessarily demand prior nutritional damage but be just a reflection of the low intake during the stage itself.

The greater likelihood of getting sick makes malnourished boys and girls show a late incorporation to the educational system and greater school absences, with which they increase the probability of failing and deserting.

Micro nutrient deficit, particularly of iron, zinc, iodine, and Vitamin A, are related to a cognitive deterioration that leads to lesser learning. As an example of this, and using data from INCAP relating to Guatemalans living in rural areas, it was possible to demonstrate that having received nutritional supplements between six and 24 months of age had a positive effect on school performance.

For the time being there are no trustworthy estimates for the region, but the economic effects are evident. The lesser ability to pay attention and learn increases the costs of the public sector through the incorporation of psycho pedagogic and educational reinforcement activities. Grade repetition of one or more years equivalently increases the demand to be covered by the educational system, with the subsequent extra costs in terms of infrastructure, equipment, human resources, and educational supplies. The lagging in school (due to late entry or derived from repeating grades) increases such costs to the degree that it broadens the age heterogeneity at each educational level, imposing greater difficulties on the process, either in terms of designing a special offer or in making the interests and abilities of the various ages more compatible.

To the costs that must be borne by the educational system one must add the private costs (of the student and his family) which are derived from the need for greater inputs, external educational reinforcements, and greater time devoted to solving or mitigating the effects of a lower performance.

In the case of Chile, for example, the minimum cost of keeping a child in the public school system is of approximately US\$ 1,000 per year, of which the distribution of a food ration equivalent to one third of the daily energy requirements (750 kcal) represents 13 percent (US\$0.60 per ration per day).

- c) **Productivity.** Besides the indirect associations generated by the effects on health and education, the nutritional situation has a direct bearing on productivity.

Various studies about the association between hunger, malnutrition, and productivity reveal sufficient evidence linking a person's ability for physical work with their level of oxygen absorption and the nutritional situation, measured by the Body Mass Index (BMI) and height. In this process the intake of iron also plays an important role in determining anemia and the concentration of hemoglobin in the blood, which would represent 17 percent of loss of productivity in intensive manual labor. In Colombia, for example, it was found that, among sugarcane gatherers, weight and height significantly determine productivity. Among sugarcane and coffee gatherers in Guatemala, on the other hand, the height of adults would have a positive effect on productivity. Other studies in the region show that, among Brazil's urban population, the BMI and adult height have a positive impact on market income (a relationship of 1 to 2.2) (FAO, 2003)¹⁶.

As a result of productivity losses, it is also possible to analyze the loss of economic development by taking a look at the level of each country and of the region as a whole,

¹⁶ FAO, "Nutrition intake and economic growth. Studies on the cost of hunger", Roma, 2003

which could be limiting its potential GDP level or its annual rate of growth. Even though the data does not pertain to the region, Horton's (1999) data indicate that the loss of productivity among adults due to low height and iron and iodine deficiencies is the equivalent of between 2 percent and 4 percent of the annual GDP of Bangladesh, India, and Pakistan.

III. Food policies and programs

The goal of a food policy is to help to overcome the food insecurity of the population. This means enabling people to have, at all times, physical and economic access to enough, safe, and nutritional foods to satisfy their nutritional needs and their preferences, in order to lead an active and healthy life.

To fulfill this goal, countries in the region have broached various intervention strategies, from the area of food production and marketing to aid programs in times of emergency. When attempting to identify specific policies to protect food security and nutrition, however, data collected in the countries show important variations, which could be partially due to the differences in the problem in each of the countries. On the one hand, most of the 11 Hispanic-speaking countries in the Caribbean basin tend to have a specialized political instance at the central level and in almost all the cases there is a national policy, and it is worth mentioning that there is a certain juridical safety in at least three of them (through laws or bills on the subject): Costa Rica, Guatemala, and Nicaragua. This means that there is a positive situation with respect to the political relevance and juridical safety. But "even though most of the policies and plans have been created taking into account the availability, access to, consumption, and biological utilization of food, there is an emphasis on the biological utilization and on consumption" ... "In practice, in many cases, the interrelationships for coordination lack the necessary coherent, particularly with production and access policies, so that it becomes necessary to consider macroeconomic policies, globalization, interregional trade, and the processes to modernize and decentralize the state, in order for those plans to acquire a more realistic approach and to become politically viable, as well as technically and economically feasible." (INCAP 2003).

In the case of the 14 Caribbean countries (English and French speaking), policy orientations seem to be rather subsumed within anti poverty policies, including care for vulnerable groups (children, women, and rural areas) and the protection of health, education, and nutrition rights; Bahamas, Belize, Guyana, and Trinidad and Tobago stand out as the only ones where one can identify nutritional policies or specific nutritional plans, which are fundamentally geared towards problems with micro nutrient deficiencies. This is understandable to the degree that, in those countries, the problem is more centered on those aspects that in global or chronic malnutrition.

At the level of food programs already existing in the countries, these focus on technology transfers to improve production (in volume and quality), school feeding, promotion of mother-child health (with promotion of breastfeeding by the mother), strengthening of foods with micro nutrients (basically iron, iodine, and vitamin A), recovery of critical cases, and mitigation of food vulnerability in the wake of natural disasters and social conflicts.

School feeding programs are universally present in the ACS countries. The same happens with the nutritional care and support of pregnant women and children within the health system. The level of national independence or autonomy, however, varies. In the case

of the English-speaking Caribbean, there is a broader exercise of national responsibility in terms of assuming the task both politically and financially.

Programs aimed at improving food productivity and quality are present throughout the sub-region and are greatly supported by the FAO and IICA.

More recent experiences are the integral anti-poverty programs, such as those developed with *Oportunidades* (Opportunities, in English) in Mexico, with the *Red de Protección Social* (The Social Protection Network, in English) in Nicaragua, with the *Programa de Asignación Familiar* (PRAF acronym in Spanish; the Family Assignment Program, in English) in Honduras, and with the *Programa Familias* (Families Program, in English) in Colombia. Under these programs conditional transfers are made to families so that, in exchange for money vouchers or food, families and children participate in health and education programs, thereby structuring social security networks. Evaluations undertaken so far indicate positive impacts in various dimensions: in the case of *Oportunidades*, for example, the evaluation done by the International Food Policy and Research Institute (IFPRI) found increases in height of up to 16 percent among children between 12 and 36 months old, and a reduction of 12 percent in the incidence of disease (Skoufias, 2000).

In the case of countries members of the Organization of Eastern Caribbean States (OECS), there is a growing implementation of social security networks aimed at the most vulnerable. Provision of such services plays a key role in alleviating poverty and in providing basic living conditions. Because they are based on the system of pension contributions which works on the basis of a formal economy, however, there are limitations as to the participation of those most in need, who are mainly independent rural workers. (Caribbean Development and Cooperation Committee, 2004: 4).

On the subject of preventing and mitigating food vulnerability arising from natural disasters and social conflicts, the sub-region has vast experience, among which it is worth highlighting the Regional Disaster Information Center (CRID, acronym in Spanish), the Caribbean Disaster Emergency Response Agency (CDERA), and the Central American Center for Prevention of Natural Disasters (CEPREDENAC, acronym in Spanish), as well as the support that the social investment funds (FIS, acronym in Spanish) and the reconstruction for peace funds in each country have afforded the food security strategies.

International cooperation has been most relevant in implementing the above mentioned programs, particularly among Spanish-speaking countries. In Central America, therefore, the role of government institutions is to define policies and design programs, a task that is greatly supported by the international agencies (WFP, FAO, INCAP, UNICEF, SICA) and by donor nations. Financing for the food comes mostly from national appropriations, banks (BCIE, BM y BID) and, to a significant degree also, from the donations of donor countries and agencies (mainly WFP and USAID). The work of national and international NGOs helps with the implementation of operational tasks.

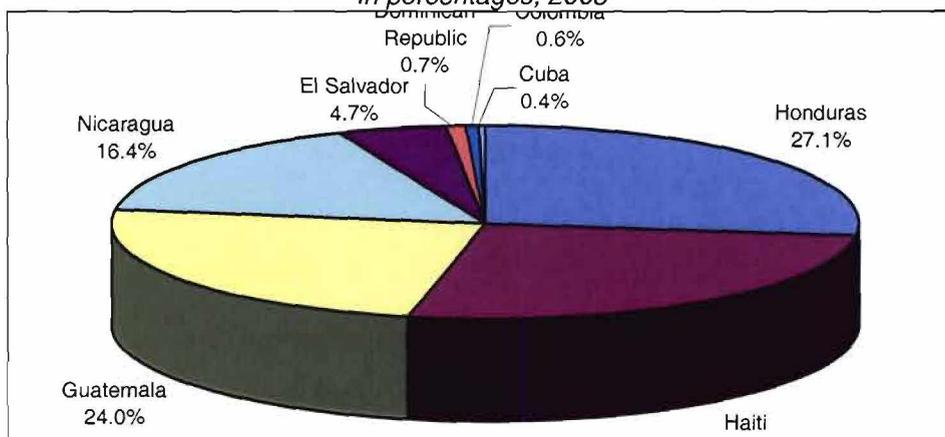
According to the FAO, the volume of international food aid provided to ACS countries has been, on average, 1,450,000 metric tons between 1990 and 2003, a period during which, as in the rest of LAC, there was a strong decline, from 2.7 million tons in 1990 to 536 thousand tons in 2003. Of shipments sent in 2003, 61 percent went to ACS countries (concentrating on five countries, mainly Honduras, Haiti, and Guatemala) and there were no relevant changes before that (save for an increase of up to 81 percent during the Mitch hurricane disaster and of up to 69 percent during the 2001 earthquakes in El Salvador).

In the process of seeking funds and food, as well as to detect problems, prioritize the beneficiaries, and distribute aid, it is necessary to coordinate various management layers and the participation of many organizations. Among the regional agencies collaborating with food

aid in the Caribbean are the WFP, the *Instituto de Nutrición de Centroamérica y Panamá* (Institute for Nutrition of Central America and Panama, INCAP acronym in Spanish), the Caribbean Food and Nutrition Institute (CFNI), the PAHO (with its *Iniciativa de Escuelas Promotoras de Salud o Escuelas Saludables*, or Initiative for Schools Promoting Health or Healthy Schools), the *Instituto Interamericano de Cooperación para la Agricultura* (Interamerican Institute for Agricultural Cooperation, or IICA acronym in Spanish), the FAO's *Programa Especial para la Seguridad Alimentaria* (Special Program for Food Security, or PESA acronym in Spanish), the *Red de Cooperación Técnica en Sistemas de Vigilancia Alimentaria Nutricional* (Network of Technical Cooperation in Food Nutrition Vigilance, or SISVAN acronym in Spanish), the *Fondo Internacional para el Desarrollo de la Agricultura* (International Fund for the development of Agriculture, or FIDA acronym in Spanish), the *Sistema de Integración de Centro América* (Central American Integration System, or SICA acronym in Spanish), the *Centro Regional de Información de Desastres* (Regional Disaster Information Centre, or CRID in Spanish), the CDERA, the CEPREDENAC and the ACS proper.

This last element highlights the need to preserve international assistance, particularly in the poorest countries, with the precautions necessary to have such assistance integrated into the public policies through a process of building the national and local technical capacities that foster autonomous management.

Graphic III.1
DISTRIBUTION OF FOOD ASSISTANCE IN ACS COUNTRIES
In percentages, 2003



Source: FAO, FAOSTAT-Nutrition.

IV. Policy Recommendations

Despite significant differences among the countries of the Association of Caribbean States, in a paradoxical situation of food sufficiency and increase of overweight and obesity prevalence, the problems of hunger and malnutrition persist, mainly derived from the problems of access that generate the inequalities (social, economic, and cultural) present in Latin America and the Caribbean (LAC) and which, in some cases, make it difficult to fulfill the first of the Millennium Development Goals (MDGs) to “reduce by half the proportion of people who

suffer from extreme poverty and hunger by the year 2015”, and even less likely the attainment of other international commitments involving greater efforts.

As indicated, the significance of this problem is not limited to the ethical imperative of standing up for the rights of citizens. Besides this, and because of its permanent effects on physical and psychomotor development, hunger and malnutrition have become one of the main mechanisms for transmitting poverty and inequality among generations; preventing and mitigating their consequences, therefore, lead to a reduction of the public and private costs derived from this scourge (because of its impact on the health and educational systems, consumption, production, and economic growth).

Within this context, the need to have social policies aimed at reducing malnutrition and hunger becomes obvious. What matters is to analyze the most adequate substantive components and the management schemes to maximize the impact and efficiency of such policies.

Over the past years, social policy designers have increasingly fostered inter-sectoral articulation in order to face social problems in an integral and participatory manner. This orientation is based on a systemic view that highlights the strong interaction among various sources of vulnerability (such as health, nutrition, education, housing, jobs, and environment). Overall, these sources spearhead the vicious circle of poverty and, in turn, a positive impact exerted on each of them unleashes a chain of positive effects on the other ones. In this way, when analyzing and working on them jointly, it is possible to identify a virtuous circle of major synergies.

Likewise, food and nutrition security policies and programs (SAN, acronym in Spanish) have continued to incorporate such an integrating outlook, placing food as an explicit goal but also as a means to reach the other goals. Investment in production technologies, training, food fortification, and improvement of distribution channels are keys to improving the volume, quality, and access to, nutritional foods. At the same time, delivering food to health centers and schools are effective incentives to reinforce the actions of those sectors, since they work as conditional transfers inviting mothers to take their children in for medical checkups and to study (enter and stay in school).

A clear expression of this systemic notion and of the synergies provided by an integrated intervention is found in the United Nations 8 MDG's, which show a strong interrelation and where nutrition plays a crucial role. These goals also take into account measures that have been measured in terms of the magnitude of the scarcity and of the commitments to be assumed by the countries to make their financing viable, among which hunger and poverty head the list.

When analyzing the specific case of policies against hunger and malnutrition, a series of recommendations promoted by the agencies monitoring the MDGs (ECLAC, FAO, PAHO, WFP, UNDP, UNICEF, and their specialized institutes) in the region comes to the forefront. These recommendations are associated with the major causes of food vulnerability (environmental, social-cultural-economic, and political-institutional), as well as with the individual, collective, and institutional response capability of the countries, a process in which the current phase of demographic-epidemic-nutritional transition in each country plays a key role and whose symptoms vary according to the various stages of the life cycle of the population.

Consonant with the above, the main policy guidelines aimed at achieving food security and eradicating hunger and malnutrition presuppose covering the various areas of vulnerability, among which the following must be highlighted:

- ***Production and access to food***

- a) To facilitate the access of the most vulnerable families to productive assets related to land, equipment, and financing. The unequal distribution of rural land, and particularly of the land for agricultural and farming production, forces the poor farmers of LAC to live in areas that are hard to reach, where lands have low productivity, and where they lack juridical security with respect to their property.
- b) Improvement of soils, water management, storage, and extension activities that strengthen the associative capability and the industrialization of processes, in order to increase productivity and the diversification of production, particularly in the case of subsistence agriculture. This requires adequate land regulation models that optimize the use of resources through the promotion of crops that are in accordance with the environmental characteristics of each sector. Continental and island nations making up the Caribbean basin recurrently suffer the environmental ravages of drought and floods, in areas where production is relatively scarce, so that this aspect becomes particularly important to maintain the stability of the food supply.
- c) Promotion and improvement of food practices based on indigenous and traditional products having high caloric content and low fat, such as pulses, vegetables, fruits and fish. This aspect assumes taking into account the cultural and ethnic diversity, both in the implementation of policies and food distribution programs, and in the commercialization of products in the marketplace.

- ***Infrastructure***

- d) Investment in schools and health services, to increase coverage and improve the quality of the offerings, thus enabling people to reach higher levels of schooling, food assistance, and access to health.
- e) Investment in drinking water and sanitation in marginal areas, to reduce the risk of transmission of diseases that are associated with malnutrition.
- f) Investment in irrigation infrastructure, to increase the productive capacity of dry areas (especially during the seasonal drought or the dry season).
- g) To provide access roads to facilitate the commercialization of local products and the distribution of food in times of emergency.

- ***Trade***

- h) Promotion of greater progress in trade agreements relating to food products, particularly regarding the effect of subsidies and other protection mechanisms used by developed countries which, although they ease access for certain population groups, nevertheless limit the competitiveness of small and micro rural producers in the region (who are usually more vulnerable), as well as the autonomy of the food supply.
- i) To launch formulas that avoid the exclusion of small producers from modern food production and commercialization processes, striving to reduce the number of links in the distribution chain and regulating certain contractual practices derived from the monopsonic nature of supermarket chains, as well as the mergers and business acquisitions which reduce competition.

- ***Food safety and quality***

- j) To empower the sanitary control systems to protect food safety, in order to control food borne diseases (FTD) that originate in the different production and distribution phases. This creates the need to have real and effective food elaboration and manipulation protocols, together with the promotion of control systems that guarantee the safety of the food consumed by the population. A general problem in the region is the roadway sale of products having no cold chain or sanitary control.
- k) To provide upkeep and improve the programs to fortify nutrition with micro nutrients, which have proven to be highly cost-effective given their impact on decreasing their effects on health, learning and productivity, at a low cost. The case of iron is particularly relevant, since it is the micro nutrient most lacking in the Caribbean, and the most prevalent cause of anaemia, which turns it into a significant public health problem.
- l) Improvement of the quality of food, with investments in new technologies, training, and sanitation, particularly in regards to food manipulation in the trade and within households.

- ***Food assistance***

- m) Food supplements for pregnant and nursing mothers, breastfed infants, and preschool children, and promotion of breastfeeding (exclusively up to the 6th month of life). Food security during the initial stages of the life cycle is crucial in stopping the reproduction of food-nutrition problem and its consequences so that, besides current efforts, programs targeting these groups (pregnant mothers, unborn minors, and children under 3 years old) should be kept and fostered. This must become an integral part of the health system in its reproduction support and pregnancy control, healthy child, and infectious-contagious components, in which it is also important to control the concomitant increase of excess weight and child and mother obesity, which are problems on the increase in the region as the countries move forward in their epidemiological and nutritional transition.
- n) Food at school to ensure access to the minimum food requirements and to strengthen the synergies with the learning process. A hungry child not only runs the risk of malnutrition and of suffering health consequences, but also of having limitations on his/her attention and learning capabilities in school.
- o) Money and/or food distribution for populations living in extreme poverty, as a counter benefit for attending other public services (such as primary health care, schools, subsidies, and others), for community work, skills training, and acquiring literacy. This is inspired in the idea of generating synergies between the different social programmes, according to the aforementioned systemic vision, which has been put into practice in programs in various countries of the region which have been positively evaluated to date.
- p) Establishment-optimization of emergency food protection systems in the wake of natural disasters and social conflicts. The region has important support networks such as CEPREDENAC and the *Centro de Prevención de Huracanes* (Hurricane Prevention Center), besides national institutions. The fury of these events, however, demands the need to broaden coverage and continue developing initiatives to improve food collection and distribution systems for the most vulnerable and marginal populations.

- ***Information and knowledge about nutrition and health***

- q) Broadening the coverage of media campaigns and educational programs directed at promoting healthy eating and focused on the most vulnerable groups, in order to provide well balanced diets and good food handling and preservation practices. Schools and primary health care centers, together with the mass media (particularly radio) are useful channels to this effect.

In order for these proposals to achieve the desired impacts, some strategic requirements must be present:

To begin with, eradicating hunger must be part of the central public agenda and have assured financing. A basic condition for this is to have legal frameworks in the countries which lend stability, from government policies and plans to state policies. Such policy continuity and stability are not common in the sub-region, making them largely dependent on international aid to face the scourge. In view of this, fulfilling this premise should become a priority in the countries.

Secondly, the integral nature and the stability of policies are keys to the level of achievement of the indicated proposals. Part of this relates to the need to have a long term approach. Achievements with respect to extreme poverty and malnutrition, particularly in the case of chronic malnutrition, require years of effort with continuity in the approach. Mexico's program *Oportunidades*, Nicaragua's *Red de Protección Social*, Honduras' *PRAF*, and Panama's recently created *National Food Plan* (PAN, acronym in Spanish) are national examples within the sub-region that accommodate this vision. For these programs to bear fruit, nevertheless, it is essential that their integral nature be translated into an appropriate harmonization among institutions that are part of the sector involved, as well as between these and the international agencies and other participating institutions.

To facilitate this harmonization, it is worthwhile to empower regional cooperation bodies, such as those promoted in Central America by SICA and INCAP, which strive to improve the management of material and technical resources used for interventions to guarantee Food and Nutritional Security, strengthening national commitments, and grouping the efforts of various nations.

Other characteristics of modern social policies, particularly in the area of food, are the principles of participation and the focusing of resources. Assuming that it arises from the integral nature, the former presupposes an active involvement on the part of the population, not just as recipients but also as players, to identify problems and design and implement solutions to those problems, so that the solutions being adopted are adapted to their social, cultural, and environmental specificities. This is particularly relevant in countries having great cultural and ethnic diversity, such as those of the ACS. As a means to reach universal food security, the latter presupposes that efforts are geared towards the most vulnerable, that is, to those not only living in conditions of greater risk (because of their human and natural environment) but also having lesser individual or collective ability (having less private and social capital) to respond.

At this point it is crucial to consider gender. Women are the ones who develop daily strategies to feed their families, they predominate in rural non-agricultural jobs, they migrate to the cities and send money home, and are quickly joining the salaried workforce. This recognition has led to their being recognized today as facilitators in the implementation of various programs integrating nutrition, health, and education in the region, such as *Oportunidades* in Mexico and *Programa Familias* in Colombia.

Another major element in the implementation of any social or food policy is information, both related to the existing problems and their evolution, and related to the management undertaken in each country. Overall, much remains to be done in Latin America and the Caribbean to consolidate trustworthy, homogenous information systems having comparable methodologies, an aspect that thwarts the quality of diagnoses and the evaluation of results.

Evaluation and monitoring are, on the other hand, key pillars when undertaking an appropriate management of food programs. One factor that partially explains the fact that impacts are less than those expected and that inequalities prevail, is related to management and probity problems. To overcome this, it is essential to have information systems that provide indicators for processes and impacts, a fact which emphasizes the need to continue periodically implementing demographic and health surveys (DHS) that are harmonized with the household surveys.

Finally, hunger as an expression of social vulnerability, and food as a means to mitigate that hunger, together with the inequalities systematically arising from food gaps, are nowadays the key axes of social policy, for which reason they merit a harmonized approach that focuses on a long term perspective within a framework for juridical security.

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