CHAPTER - 4

THE CRISES AND FOOD SECURITY?
**Food Security and its Implications for the Sub-Saharan Region**

Food security is about people, hunger and suffering. Food security may be defined as the ability of food deficit countries, or regions or households within these countries, to meet target consumption levels on a year-to-year basis.¹ Food security can be taken to refer to a population’s capacity to obtain adequate quantity of food with a reasonable degree of assurance.² The concept of food security is relative to different levels of analyses such as at the household level, community level and at the national level.

At the household level, food security would depend on factors such as the age composition of family members, their health status, savings and food stocks, employment prospects, and the prices and agricultural conditions faced by households. At the national level food security is likely to be determined factors like supply of cropland, rainfall variability, and the country’s access to food through purchases or food aid. However, at all levels combinations of these as well as many other variables interact and determine food security.

Hunger on a large scale in Sub-Saharan Africa reminds us of the unfinished task of achieving sustainable food security for everyone, everywhere. Adequacy of food at a national level does not rule out hunger. The important goal of raising agricultural productivity is only one part of the solution. The attainment of food security involves eliminating current hunger facing hundreds of millions of people today, and reducing the risks of future hunger.

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For the Sub-Saharan region as a whole, per capita food production has steadily decreased as food production, with an average annual rate of less than 2%, has failed to keep pace with a 3% annual growth rate in population.³

The mid-1980s brought the most serious deterioration when production further declined, resulting in severe food shortages. Drought seriously affected the region, and there were serious food shortages in 25 countries. Agriculture showed a brief recovery from the drought, and by the end of 1987, five Sub-Saharan countries (Côte d'Ivoire, Gambia, Kenya, Tanzania, and Zimbabwe) had exportable surpluses of coarse grains.⁴ Recovery, however, was slight, and production in many countries since this period has failed to keep pace with population growth.

The food available for human consumption expressed in calories divided by the population gives a daily per-capita estimate of energy availability. This is termed dietary energy supply (DES). The DES for the whole region, derived from FAO's Food Balance Sheets, show a very slight increase since 1970⁵. Unfortunately, the overall increase was due primarily to substantial improvements in those countries already better off, while many low-income Sub-Saharan countries with a daily per-capita DES of 2300 kcal or less in 1969-71 showed no improvement and in many cases even a decline. Of 39 sub-Saharan countries, 23 had a negative annual growth rate in per-capita food production over the period 1970-91. Ever-increasing imports (including food aid), have been needed to maintain a reasonably constant per-capita dietary energy supply, which has remained at below 2200 kcal per day.⁶

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³ Brian Thompson, "Coping With Food Crises In Africa", IPA Journal (INCH) Vol. 8, No. 2. 1998
⁴ Ibid.
⁵ Appendix, Table 4.1.
DES IN THE DEVELOPING WORLD

PER CAPITA DES (Kcal/day)

Latin America and the Caribbean
Sub-Saharan Africa
Near East - North Africa
East Asia - South East Asia
South Asia

1969 to 1971
1979 to 1981
1990 to 1992
Overall there appears to be just enough food available in Africa to meet the population's minimum energy needs if equitably distributed. Problems are likely to be experienced, however, in those countries where the dietary energy supply is less than requirements (Angola, Central African Republic, Chad, Comoros, Ethiopia, Mozambique, Namibia, Sierra Leone and Zaire). Given the inequities in distribution of the available food supply, those countries whose DES does not exceed 110% of requirements (Burundi, Congo, Ghana, Guinea, Kenya, Madagascar, Malawi, Mali, Rwanda, Togo, Uganda, Zambia) are also likely to have serious nutritional problems. While an amount of food in excess of this figure may be available at the national level, it is clearly not always available to everyone, and serious problems of chronic food insecurity and undernutrition persist, even in countries which can boast large surpluses and are food exporters.

Trends do not appear to be improving, unfortunately, and prospects indicate that much of sub-Saharan Africa will probably not be significantly better off over the next ten years than at present. "Even with economic policy reforms, greater agricultural assistance and an improved situation in Southern Africa, there must be a strong likelihood that Sub-Saharan Africa will be unable to raise its food production to match its population growth". For many countries, the food supply situation remains critical, and for large numbers of displaced people, refugees, and those affected by reduced harvests, food assistance is required.

FAO's Global Information and Early Warning System reports that Inspite of a general improvement in overall food supplies, reflected mainly by a recovery in cereal production in southern Africa, severe food

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7 Ibid.
8 Dyson., n. 2, p. 177.
shortages and emergencies continue to grip several countries in sub-Saharan Africa. This has necessitated the provision of food assistance to some parts of the sub-region. Countries facing exceptional food emergencies include Angola, Burundi, Eritrea, Ethiopia, Lesotho, Liberia, Malawi, Mozambique, Rwanda, Sierra Leone, Somalia, Sudan, and Zaire.9 The causes of food shortages vary from region to region, including civil strife, adverse weather, population displacement, and localised crop failures.

With domestically produced food only accounting for 85% of the region's total energy supply, and given recent production trends and the lack of foreign currency, it is unlikely that the resulting deficits can be covered by commercial imports. Therefore, concessionary food aid to prevent increasingly widespread hunger and malnutrition will be needed.

Since the mid 1970s this is probably the only world region which has experienced major famines. Indeed, there has been quite a few—usually associated with warfare and civil strife. In addition, there are distinct signs of climatic change—manifested in more variable rainfall patterns and more frequent drought, especially in eastern and southern Africa.10 Recurring droughts experienced by many Sub-Saharan countries have also negatively affected livestock as well, especially so during particularly bad periods, in some regions. As this sector serves as a source of income, food, and draft power for farmers, the livelihood of a great number of people has been affected.

Another contributing factor to low agricultural production and under-nourishment is the low level of education and rural extension services offered to girls and women who are primary food producers in Africa.

9 FAO., n. 2.
10 Dyson, n. 3, p. 171.
Undernutrition in Sub-Saharan Africa

Undernutrition is a term most generally applied to an energy (or a protein and energy) deficiency, but it may also relate to vitamin and mineral deficiencies. Undernutrition occurs when an individual has an insufficient intake of energy for normal growth and physical development, body maintenance, and the energy necessary for ordinary human activities. By extension, undernutrition is also the pathological state resulting from such a long-term dietary insufficiency, the principal manifestation being a reduction in body mass. However, although this definition implies that the main cause of undernutrition is an inadequate intake of energy, there are other interfering factors due to the close relationship between nutrition and health. For instance, inadequate nutrition due to dietary deficiency may diminish the body's immune system and reduce resistance to infection. Infection, which may occur as a consequence, diminishes the capacity of the body to utilise nutrients, and this may worsen undernutrition.

Therefore, while the level of dietary inadequacy is in many cases the dominant determinant of undernutrition, the level of primary health care and sanitary environment in the community can significantly worsen the severity of its physiological, and possibly clinical, manifestations.

The most serious nutritional problems in Sub-Saharan Africa involves undernutrition and, as represented by the prevalence of underweight pre-school children, undernutrition is extensive in many Sub-Saharan countries. Measurements of children aged less than five years of age attending health centres suggest that the prevalence of underweight
UNDERNUTRITION THRESHOLD IN SUB-SAHARAN AFRICA (CALORIES)

YEAR: THREE YEAR AVERAGES

1969-71

1979-81

1990-92

2010
children for the region as a whole is second only to South Asia. Unlike Asia, however, the prevalence rate is declining only slightly, and the numbers affected by malnutrition are rising.

Estimates of average figures of underweight children from 1975 to 1990 show that the prevalence of underweight children in sub-Saharan Africa remained static, with the slight improvements in 1975 to 1980 being cancelled out over the 1980s. Because of increases in population, actual numbers of underweight children are estimated to have increased since 1980. It is estimated from WHO's Global Database on Child Growth that 26 million children (30%) of under-five year olds in sub-Saharan Africa are currently underweight, 34 million (38%) stunted, and 6 million (7%) wasted. Projections indicate that little improvement in these levels will likely be achieved before the end of this century; on the contrary, further deterioration is possible. This has serious consequences as childhood diseases in which undernutrition and some form of dietary deficiency play a part, through weakening the immune system, are major killers of Third World children, in particular before three years of age.

When individual countries are examined, three groups may be differentiated on the basis of these trends:

- those where the underlying trend is static or possibly showing a slight increase in prevalence;
- those (the majority) where the underlying trend appears static but there has been a recent peak in incidence;
- and those where there is clear evidence of increasing prevalence of underweight children.

In sub-Saharan Africa, almost all countries show an increasing prevalence, and, for example, in Ethiopia, Kenya, and Madagascar, a

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11 Appendix, Table 4.2.
12 Ibid.
disturbing increase in malnutrition amongst pre-schoolers has been recorded over recent years.13

Although the nutritional status of young children has been most commonly used as an indicator, all household members can be, and frequently are, affected by undernutrition, and attention is also being given to assessing the nutritional status of adults. The finding that many of the adult populations surveyed are underweight “clearly reflects the fact that when a family or community is under nutritional stress, the effects are not confined to infants and pre-school children, but often are felt by all the members of the household. This has implications for the design of interventions and strategies to combat malnutrition”.14

Rates of undernutrition, in addition to being related to a variety of socio-economic, geographic, or environmental variables, are also affected by seasonality. The incidence of malnutrition may generally be higher during the pre-harvest periods, falling again after the harvest. These problems associated with insufficient food in a pre-harvest period are aggravated by high food prices and increasing energy expenditure demands due to high workloads. Studies in the Gambia, Ghana, Nigeria, and Uganda have confirmed this finding.15

Peak prevalence may coincide with periods of infection and diseases in the rainy season - for example, the increase in diarrhoea, which is often observed at this time. Within countries the prevalence of malnutrition varies greatly among socio-economic groups, agro-ecological zones, rural and urban strata, and even between different members of the family. Generally, malnutrition is more prevalent in rural and remote areas than urban areas, due to lower incomes, poorer
access to services and overall food insecurity. Poor urban shantytowns and semi-urban areas, however, often have high prevalence rates of malnutrition and, with the growth in urbanisation, the number of malnourished in the cities is probably increasing.

Gender differences have also been highlighted in nutrition surveys. Judging from indicators of women’s nutritional status and anaemia, nutritional deprivation in female adults is a problem of considerable magnitude, requiring strategies, which target benefits to households, and particularly to nutritionally suffering women in these households.

Intrauterine malnutrition is a result of maternal malnutrition and is evidenced by low birth weight (LBW), where Birth weight is less than or equal to 2.5 kg, infants have a higher risk of subsequent growth retardation, morbidity, and mortality than do other infants. The incidence of LBW is difficult to estimate for sub-Saharan Africa because of the low coverage of attended births, but such evidence as there is tends to demonstrate virtually no improvement in the last decade.

**Micronutrient Deficiencies**
Micronutrient deficiencies affect large numbers of Africans. Some 40 million people in Africa are affected by the iodine deficiency disorder goitre; 1.3 million are affected by ‘xerophthalmia’, a vitamin A deficiency; and 206 million are anaemic or iron deficient. Hundreds of millions more are at risk of these micronutrient disorders. Promotion of food-based strategies to change the consumption habits of people will ensure long-term impact. Programmes that support home gardens, small-scale fruit and vegetable production, and other micronutrient rich foods are necessary as well as improved food processing and preservation techniques.

16 Ibid.
Anaemia is one of the most widespread diseases in Africa, probably averaging between 40-60% of the entire population, but with reported prevalence of over 80% in some areas\(^\text{17}\). It is caused by the interaction of nutrient deficiencies (primarily iron and folic acid), parasites (malaria, hookworm), and blood loss from other causes. While the effects are insidious, they are serious and may be life threatening, especially for women and children. The human, social, and economic costs associated with anaemia are considerable. It leads to reduced learning and work capacities and productivity and lessens the ability to resist disease. It is also associated with high rates of maternal mortality during childbirth.

Dietary vitamin A deficiency is also a major problem in many countries and particularly in arid/semi-arid zones. It is most commonly associated with eye problems and is a leading cause of blindness in children. It is associated with significantly increased levels of morbidity and mortality. The Sahel and Eastern Africa have very low availability of vitamin A and are the zones at greatest risk.

Goitre and cretinism due to iodine deficiency is endemic in areas where the soil, and hence foods grown on that soil, are deficient in iodine. Excessive intake of goitrogens (naturally occurring substances causing goitre) can also be an important cause of iodine deficiency.

The costs of all types of malnutrition in terms of human suffering and national development are high and translate into a loss of human potential that no country can afford. Undernutrition and severe micronutrient deficiencies may result in a range of adverse health effects, and poor health related to malnutrition reduces the resources and income-earning capacity of already poor households, thereby increasing their social and economic problems. Malnutrition and poverty often

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\(^{17}\) Ibid.
exacerbate unsustainable agricultural practices, due to the desperate efforts of the poor to obtain adequate food. Malnutrition can result from failed social and economic development efforts, but conversely and tragically, widespread malnutrition is also a major constraint on future development.

**Causes of Food Insecurity**

The countries of Sub-Saharan Africa experience severe food shortages and nutritional problems on an extensive scale and on a continuing basis. This situation is an outcome of a complex mix of social, political, economic, and environmental forces that combine to prevent members of socio-economically disadvantaged households from acquiring and effectively utilising food, adequate to meet their nutritional needs. Undernutrition primarily afflicts those who either cannot produce or procure adequate food, live in marginal or unsanitary environments without access to clean water and basic services, and are uneducated or otherwise socially disadvantaged.

A large part of Sub-Saharan Africa is chronically affected by severe food shortages that threaten the food security of the region. A peculiarity of Sub-Saharan Africa is that "food production is not only a source of food but also a source of incomes for the numerous smallholder producers who for the most important group exposed to the risk of hunger."\(^\text{18}\) Therefore, mostly growing food insecurity is generally associated with crises in food production and lack of alternative employment opportunities other than agriculture.

Trends in nutrition levels also confirm that food shortage is largely influenced by economic conditions, poverty, prices and incomes, and by agricultural conditions, particularly crop-damaging drought. With

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increases in food availability, purchasing power, education, and improved health services and welfare, overall nutritional status does improve. What is also found is that economic recession, political crisis, and drought disturb such improvement. This demonstrates that levels of nutrition do respond to crisis and stress. The implication of this is that with the application of more rapid and effective measures to safeguard those population groups most at nutritional risk, nutrition can be improved.

Therefore, the nutritional situation in Sub-Saharan Africa is affected by:
1. Access to such food either by production or purchase, which is a function of household income levels and flows and the resource base for subsistence farming.
2. Availability of safe, good-quality nutritious food
3. Ability to buy specific foods available in the market or to grow them for home consumption, which is related to food habits, intra-household income control, and nutritional knowledge.
4. Health status of individuals, which is affected by health care and sanitary conditions at the household and community levels. For infants, the extent of breast feeding and general childcare is of particular importance.

Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Food security has three dimensions. First, it is necessary to ensure sufficient availability of food both at the national and the local level. Secondly, it is necessary to have a reasonable degree of stability in the supply of food both from one year to the next and within the year. Thirdly, it is necessary to ensure that each household has the physical and economic access to

19 Ibid.
the food it needs. Table 4.3 indicates the sources of problems related to food security and nutrition, and examples of affected populations. From this Table it is clear that the availability of food does not ensure access to food; food may be available, but a household, for various reasons, may not have access to it. In this sense, household food security is not necessarily an outcome of national food availability, although adequate national or local food availability remains a necessary but insufficient condition for household food security.

Table 4.3. Sources Of Problems Related To Food Security And Nutrition, And Examples Of Affected Populations

<table>
<thead>
<tr>
<th>Risks</th>
<th>Households and People at Risk of Food Insecurity and Malnutrition</th>
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<tbody>
<tr>
<td>Political and Policy-Failure Risks</td>
<td>• Households in war zones and areas of civil unrest.</td>
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<td></td>
<td>• Households in low-potential areas that are not connected to growth centres via infrastructure.</td>
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<tr>
<td>Lack of Employment</td>
<td>• Wage-earning households and informal sector employees (i.e., in urban areas and, when there is a sudden crop production failure, in rural areas).</td>
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<td></td>
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<tr>
<td>Agricultural Trade Risks (disruption of exports or imports)</td>
<td>• Smallholders who are highly specialised in an export crop.</td>
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<td></td>
<td>• Small-scale pastoralists.</td>
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<td></td>
<td>• Poor households that are highly dependent on imported food.</td>
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<tr>
<td></td>
<td>• The urban poor.</td>
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<td></td>
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<tr>
<td>Food Price fluctuations (substantial, sudden price rises)</td>
<td>• Poor, net food-purchasing households.</td>
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<td></td>
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<tr>
<td>Crop Production Risks (pests, drought, and others)</td>
<td>• Smallholders with little income diversification and limited access to improved technology such as improved seeds, fertiliser, irrigation, pest control.</td>
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<td></td>
<td>• Land-less farm labourers.</td>
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<td></td>
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<tr>
<td>Health and Sanitation Problems (infectious diseases, including AIDS)</td>
<td>• Entire communities, but especially households that cannot afford preventive or curative care and vulnerable members.</td>
</tr>
</tbody>
</table>

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of these households, especially women, children, elderly.

| Problems of Care and Social Insecurity | • Women, especially when they have no access to education.  
|• Female-headed households.  
|• Children at weaning age.  
|• The aged.  

Source: Brian Thompson, Coping With Food Crises In Africa, IPA Journal (INCH) vol. 8 No. 2.

However, neither is access to such food a sufficient condition for good nutrition and a healthy life; a number of other factors such as health and sanitary environment and the capacity of the household of community to care for vulnerable members of society are also important. Inadequate health care can have serious consequences for nutrition. This is particularly the case in low- and middle-income countries of sub-Saharan Africa, where there has been a significant drop in the proportion of the population having access to health services.20

The interaction of infection and malnutrition has an overwhelming impact on health status, particularly in lower socio-economic groups. It is a major cause of death, sickness, and disability in infants and young children and an important contributor to women's ill health and reproductive problems.21

In the longer term, poor health and nutrition lowers cognitive ability and work performance, which can adversely affect employment opportunities and income-earning potential. Decisions on utilisation of income earned may also be affected, resulting in misallocation of scarce resources and loss of productive assets.

21 Ibid.
Consequently preventing, controlling, and correctly managing infections is an important strategy for improving nutritional well-being and for enhancing the productivity of the adult population. Actions in this regard should include measures to ensure adequate primary health care services, including immunisation programmes, diarrhoea control, control of acute respiratory infections, and AIDS prevention and control programmes.

**Response to the Food Crises**

**Crisis Management at the Household Level**

Food shortage at the household level may be triggered by a variety of causative factors, which may be natural or man-made. The ability of households to withstand these shortages is a measure of their ability to cope with the situation which is, in part, related to the level of access and control the household has over productive resources and remunerative employment.

Successfully coping with adversity means either avoiding the shock in the first place or at least minimising the impact of the shock, or by modifying behaviour and making short-term reversible sacrifices to get by. Different population groups are differentially exposed to stress and differentially able to cope with that stress. Those households or individuals who are prone to food stress (the vulnerable and the at-risk), include resource-poor households, the rural, small marginal farmers, women-headed households, and households with large numbers of dependants. Of those households under stress, some are less likely to be as resourceful or as resilient as others are. Such households may find themselves unable to cope, and the strain may force them to make hard sacrifices, which may be irreversible. This is as true for individuals as it is for households as, for example, children under five years, women of child-bearing age, as well as the elderly and the sick may be put more
under strain in the same circumstances than more able-bodied individuals.22

Poor environmental health and hygiene increase exposure to stress, and vulnerability is often accompanied by inadequate access to health services. This can have particularly severe effects during emergencies when people are kept in confined areas, such as refugee camps. Lack of adequate food intake and increased exposure to an unhealthy environment can precipitate a major crisis and result in high levels of child malnutrition and mortality.

**Stages of Coping with Crises.**

People who live under conditions that occasionally put livelihood at risk develop safety mechanisms to minimise threats to their household food security and livelihood. Knowledge of how people cope in a crisis situation, is vital in order to know that

- how famine occurs,
- how the worst effects of food shortages may be prevented, and
- what type of interventions are needed to support populations in their own efforts at meeting their food needs and protecting their livelihood.

Fundamental to household coping strategies, is the goal to preserve their entitlements and productive assets for their future livelihoods. According to Thomson23 the following stages of coping in the run up to a major food crisis reflects this struggle to retain this capability.

**Insurance strategies** or Carefully planned actions in anticipation of environmental uncertainty and seasonal food shortage, involving a low

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23 Thomson., n. 3.
commitment of domestic resources, enabling speedy recovery once the crisis has eased.

Crisis responses brought about by repeated crop failure or prolonged social and economic disruption because of war. Responses during this stage endanger the households' longer-term productive capacity. There may be a gradual disposal of key productive assets, making it harder to return to pre-crisis state. At this stage, a household's vulnerability to food insecurity is extremely high.

Destitution is the final stage as households show signs of failure to cope with the food crisis. Dietary changes are one of the earliest strategies people adopt in response to periods of food insecurity, especially during recurrent episodes of food shortages such as the hungry season. Reducing meal frequency is one of the common responses by people in areas characterised by pronounced seasonality.

Following a normal harvest, there is generally a rapid recovery of weight, indicating that the household is relatively resilient to food insecurity. However, the "choice" of going hungry as a way of coping can only be made during the earlier stages of a period of food shortage, when people still envisage a rapid recovery after the crisis has passed. However, this is based on their perception of the situation and availability of productive assets. In the later stages of the process, people often face the irrecoverable and irreversible collapse of their safety nets, both in terms of loss of assets and loss of community and/or social support, especially in the case of migration.

Responses to Household Food Shortages. The types of coping strategies employed by households indicate household vulnerability to food shortages and correspond to different types of government and donor response.
Coping strategies among and between households can vary widely. The types of strategies employed by households will vary depending on the severity, type, and duration of the stress, and the different stages in coping may occur simultaneously. Not all households suffer during a food crisis. Some households may accumulate assets as less fortunate households exchange their belongings (livestock, tools, housing, etc.) to obtain food in order to survive the crisis. By doing so, the ability of the less fortunate to recover and to sustain their livelihood in the longer term is further compromised.

Coping with food shortages during Conflict: In war situations, coping patterns do not necessarily follow the sequence of actions as described above. As is currently the case in the Great Lakes region, Zaire in particular, where heavy fighting broke out recently, migration is often an initial response in conflict, particularly for women and children who are hoping to escape from the fighting. This, however, makes them especially vulnerable to food insecurity since displacement often involves the loss of their home, land, and assets, as well as community support structures. Many of the economic and social networks that households normally rely upon, to see them through in times of crisis, may be shattered. In such times, often the fabric of the community, which provides a safety net for the destitute, is no longer available.

In many countries in Africa, the distinction between drought-related famines and civil conflicts is not easy to make, since countries dealing with long-lasting conflicts often also suffer extreme food shortages. These may be either directly or indirectly related to the disturbances (e.g., reduction in area under cultivation, lack of marketing facilities, lack of input and services, etc). These so-called "complex emergencies" force people to constantly revise and adjust their ways of coping. Such situations in particular need external help to support people's coping
strategies in order to reinforce their livelihoods and make them more resilient to future food crises at the household level.

Impact on Children: Coping strategies are geared towards protecting household livelihoods, that is, the long-term survival of the family. At the same time, many such strategies can be detrimental to children's immediate health and nutritional needs. Changes in time allocation of household members, in particular the mother, may reduce the household's ability to care for children. Changes in food entitlements and diet may lead to impaired health status, and changes in income and income allocation may lead to a reduction in expenditure for health care/medicines, school fees, clothing, etc.

During distress migration, children may be abandoned or placed by their parents in an orphanage in hopes that the institution will provide a safe haven and ensure their survival. This was a common practice during the massive displacements following the first wave of mass killings in Rwanda in April 1994. All these circumstances are likely to have a serious and long-lasting impact on a child's physical, social, and mental well-being. The protection of household livelihoods, however, is equally important for children's growth and development in the longer term. In trying to balance the longer-term needs of family livelihood with the immediate survival needs, families are sometimes forced to make decisions that adversely affect child health and development.

Strengthening Strategies for overcoming the problems: Traditional networks of support and mutual assistance are of major importance for the revival of local economies, and the success of coping strategies are closely linked with social networks and ties. In relation to this, local governments and community organisations can play a crucial role in providing support for coping strategies and maintaining livelihoods.
There are areas in Sub-Saharan Africa that are particularly at risk of recurrent and severe harvest failure based on their agro-climatic or infrastructural circumstances. These areas are home to vulnerable populations and need to adopt a variety of famine-prevention and preparedness measures which buttress household coping strategies by maintaining people’s livelihoods and supporting their access to food and income. Sometimes these can also create the infrastructure for facilitating future development. In some Sub-Saharan countries (e.g., Ethiopia and Burkina Faso), attempts have been made to mobilise labour for environmental conservation and production enhancement, while at the same time improving the food security of the poor through the provision of food aid. Other income and livelihood support measures include the resale of food aid on local markets to generate currency for development projects, or the release of international or locally available stocks of food on the market to prevent sudden price fluctuations.

To act in a timely and effective manner, information is needed early. An FAO study24 concluded that early warning indicators, such as rainfall, crop production, crop failure, and market prices, are often inadequate to predict famine. Information on household behaviour to overcome stress can provide an earlier and much clearer signal of the actual level of distress.

It is important, therefore, to have a good understanding of the behaviour of the various types of households during periods of food shortages through informal and indigenous sources of information. These conclusions highlight the necessity for an effective early warning and disaster preparedness system to include local information on household coping strategies. These can accurately locate households at a specific stage of the famine process and hopefully trigger local responses in the

24 FAO., 1996, n. 2.
earlier stages of the crisis. The ultimate goal should be to undertake effective interventions at the onset and earlier stages of the food crisis to prevent the situation from deteriorating further into full-fledged famine and starvation.

Support is needed to strengthen the capacity of local governments, community-based institutions, NGOs, health workers, and the communities themselves in the collection of appropriate information on local strategies to cope with crisis situations. Training is needed to help communities identify local needs, formulate and monitor projects, and co-ordinate with local implementing agencies. Also there is a need to spread awareness of long-term food, agricultural, and nutrition issues, and develop local mechanisms for social support to those groups most affected.

**Crisis management and policies at the National Level**

Knowledge concerning appropriate actions for ending hunger and malnutrition has markedly increased over the past five decades. The focus has also shifted to the nutritional well being of future generations, the food needs of a growing world population, and to environmentally sustainable solutions to the food problem. The importance of an appropriate policy framework, the key role of human resources and of human rights to nutritional improvement are now better understood but have yet to find their way into global agendas. While the complexity of nutrition problems is generally acknowledged, however, there is need for a renewed commitment to undertake actions on the scale that is required.

Rather than there being one general set of policies that is clearly optimal for achieving the nutritional well-being of all, there is a wide range of policy options from which to choose -- after a set of
pre-conditions has been fulfilled. The policies and programmes proposed below are structured along the lines of the major factors causing malnutrition, as discussed above.

In making policy choices, the following characteristics of the nutrition problem need to be considered:

- food insecurity, its prevalence and severity,
- its duration (short- or long-term),
- whether it is related to a specific deficiency or to general malnutrition,
- its distribution (i.e., whether it is related to a specific population group or is more widespread),
- and the relative importance of the various determining factors.

Such information is necessary to guide policymakers and evaluate actions taken for which routine food and nutrition surveillance systems need to be developed. Also to be taken into account are the institutional capabilities of the countries involved and the economic, political, and fiscal costs of the various policy choices.

Participants at the International Conference on Nutrition25 (ICN) held in Rome at the end of 1992, discussed issues as part of the strategies and actions commonly agreed upon for improving nutrition, under the themes:

I. Incorporating Nutrition Objectives, Considerations and Components into Development Policies and Programmes.
II. Assessing, Analysing and Monitoring Nutrition Interventions.
III. Improving Household Food Security.

The actions discussed ranged from macroeconomic policies to various agricultural and income policies to specific nutritional programme

25 Ibid.
actions. Some of these are not options as such, but preconditions for poverty-reducing development.

**Appropriate Macroeconomic Framework:** Long-term effects of alternative development strategies for growth and poverty reduction have shown the striking relevance of the choice of strategy. Similarly, the short-term effects on the poor of structural maladjustment in low-income countries in the 1980s have stressed the relevance of macroeconomic policies for nutrition. Consequently, the effects of both-food and agricultural policies as well as non-agricultural and economy-wide policies on nutrition need to be considered.

There is need for public action to mitigate malnutrition. People's participation and motivation could help where the national per-capita income is low. The sustainability of public action depends, however, upon macroeconomic and trade environment that facilitates growth. There needs to be an appropriate division of responsibilities and functions between different levels of government, NGOs, and the market, as well as complementarily between market forces and national planning interventions. Co-operation between the public and private sectors should also be pursued. In order to achieve nutritional goals, these strategic considerations should be taken into account.

Primarily food production, stockholding, and trade at all or any of the following levels determines availability of food at the regional, national, and local level. Fluctuations in any of these parameters can contribute to food insecurity. For example, increased fluctuation in cereal production at the regional and national levels has been shown to place significant stress on food consumption.

At least in the short term, an increase in world food prices is likely to have adverse effects on the poor in low-income, food-deficit countries.
Storage and food trade policies require renewed attention, given the conditions of rapidly changing international and regional trade environments. Policymakers often feel strongly that some storage under public control is essential for food security. Production fluctuations, infrastructure, location, and sectoral diversification are important determinants of a country's need for storage in order to achieve the desired stabilisation of food availability and prices. Stabilisation efforts need to be attuned to a country's specific production risks and trade risks. Benefits are expressed in terms of a more stable investment climate and of reduced short-term adjustment stress on households.

The prevention of drastic price shocks is of the greatest importance. When the real prices of cereals more than tripled and cereal-livestock terms of trade increased eight-fold in Sudan in 1985, the prevalence of malnutrition among children (the proportion of children with weight-for-height below 80% of standard) rose from 5% to 20% in Kordofan.  

Fluctuations in a country's capacity to import food are functions of export earnings, world prices, and debt service obligations among other variables. These fluctuations also contribute to food insecurity. For many food-deficit and foreign-exchange-deficit countries, recourse to the international market is limited, and food aid represents an important form of access to food. Seasonal variations in production and seasonally high food prices can lead to nutritional deterioration. This is a matter for national and international policy on food trade and food aid.

While food aid has played a critical role for some countries in times of emergency, it is not a reliable source of food for food-deficit, low-income countries. It has been observed that when world market

26 Thomson., n. 4.
27 Platteau., n. 2.
prices rise, the supply of food aid from donors generally diminishes. This correlation was observed again in the mid-1990s, when rising demand and reduced supply forced cereal prices on international markets to increase by 30-40%, and food aid fell to about half its record high levels of 1992-93. This trend has continued with food aid shipments now 26% below the previous five-year average and is the lowest on record. Nearly the entire decline has occurred among low-income, food-deficit countries (LIFDCs), the bulk of which are in sub-Saharan Africa. The combination of higher cereal export prices and reduced food aid shipments is estimated to have resulted in an increase in the cereal import bill of the LIFDCs by over US $4 billion in 1995-96, a rise of 35% over the previous year.\textsuperscript{28}

*Increased Production and trade of Food:* At present, 41 countries in sub-Saharan Africa fall in the LIFDCs category. Rising prices on the international grain market have serious consequences for these countries which have to import cereals to meet their domestic needs. Consequently, efforts to boost food production in these countries, (through for example FAO's Special Programme for Food Security and WFP's Food for work programmes), are intended to tackle the problem where help is needed most.

It must be borne in mind, however, that programmes that aim to increase food and non-food agricultural production and productivity have favourable effects on nutrition so long as they directly or indirectly increase or stabilise the real incomes and food consumption of the people facing food insecurity. The impact of these policies is mediated through changes in food prices and incomes and influenced by trade policies. Boosting agricultural production stimulates overall economic growth and development, particularly in those countries which have a high economic dependence on agriculture. In such countries,

\textsuperscript{28}Thomson., n.5.
agricultural and rural development acts as an engine for sustainable economic development and poverty alleviation. This does not necessarily mean that higher food self-sufficiency should be the goal, although it is recognised that growth in food supplies has a dual effect upon food security by reducing food prices, which benefits food-purchasing households in rural and urban areas, and by promoting employment.

Appropriate technological innovations in agriculture reduce the unit costs of production and marketing and induce economic gains by stimulating agricultural growth, improving employment opportunities, and expanding food supplies, all of which involve and benefit poor producers and consumers and help to reduce food insecurity. The Green Revolution (i.e., the irrigation, seed, fertiliser, and pest-control package for rice and wheat, in particular) has expanded farm and non-farm output, employment, and wages, thus contributing to food security. National and international agricultural organisations and research systems, in particular, are the forces driving the technological innovation required to achieve the sustainable agricultural growth that will make the needed food available to the world's growing population. In order to further nutritional goals, renewed actions are needed to accelerate technological innovation in many smallholder-dominated regions of the world.

Nutritional considerations in production policies and programmes can foster nutritional well-being. Plant breeding research can have favourable effects on diet quality, for instance when scarce micro-nutrients can be bred into staple crops or when crop storage is improved. International agricultural research plays a key role also in this respect, and sufficient funding for such research is a central priority for achieving food security and nutritional improvement. Developing and
testing appropriate technologies for the diverse agro-climatic regions will remain a major task for decades to come. The health and nutrition risks of technological change must be mitigated through appropriate technology design. There is substantial scope for agricultural, public health, and nutrition workers and researchers to collaborate on improving the designs of agricultural programmes.

Improved marketing of agricultural crops frequently contributes to improving food security through increased income and employment generation. Gains in real income from marketing translate typically into gains in food consumption and nutritional welfare. Those affected can acquire more food, reduce their workloads and thus improve child care, enhance their household sanitation and housing environments, thereby reducing their exposure to infectious diseases, improving water availability in terms of both quantity and quality, and strengthening the effective demand for both preventive and curative health care. Furthermore, when household resources are less constrained, the household members are in a better position to utilise existing or new knowledge regarding nutritional improvement.

Smallholders often strive to maintain subsistence food production along with new commercial production, despite higher returns to land and labour from cash crops. Given their risky economic circumstances and the lack of insurance markets, maintaining their own food supplies may be a sound economic strategy. Agricultural policy can effectively support this by promoting technological improvements in the production and handling of subsistence foods, for example in improved processing to preserve foods, particularly those which are only seasonally available. This also provides further latitude for specialisation at the farm level and thereby permits smallholders to derive further gains from market integration.
While land-owning households often benefit most from the direct income effects of agricultural growth, land-less and small food-deficit farmers often benefit most from the indirect effects on the generation of off-farm employment. These indirect employment benefits that help the poorest households are further facilitated by infrastructural development. Rural infrastructure development is a priority also from a food security and nutrition perspective as such development is a precondition for effective rural services. Attention should also be devoted to reducing high marketing costs by improving infrastructure in most of sub-Saharan Africa.

**Employment and income generation to enhance buying power:** Malnutrition can be reduced not only by policies and programmes oriented towards improving the quantity and quality of agricultural production, but also by programmes for generating and diversifying employment and income and for alleviating poverty. While these programmes stimulate or stabilise the demand for food, they may not directly expand the food supply. Typically, raising incomes exerts a positive and significant effect on nutrition. In two case studies (Gambia and Rwanda), a 10% increase in income, from a level of US $100 per capita, resulted in a 3.5-4.9% increase in household food-energy consumption and a 1.1-2.5% increase in the weight-for-age ratio of children. Macro-level data from a number of developing countries suggest that a doubling of per-capita income from US $300-600 would be accompanied by an approximate 40% reduction in the proportion of children with substandard weight-for-age.29

Employment programmes for food security can simultaneously address three central problems facing many low-income countries today - food insecurity, growing unemployment, and poor infrastructure. The feeling now is that it is necessary to address the problems of Poverty and

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29 Ibid.
hunger in conjunction with the issue of economic growth and employment in order to bring about a sustainable reduction of Poverty. Priority should be given to public investment that promotes development through employment programmes and thus to the creation of productive assets such as roads and land and water system improvement. Programmes that increase employment could be a viable instrument for famine prevention where "off-the-shelf" public works projects have already been drawn up as a contingency and can be activated quickly in a crisis situation. Such a feature also makes it possible to address local crises that otherwise might seem too minor to trigger government action, an important feature for dealing with the problem of localised food shortages in Africa.

Actions to provide credit for consumption stabilisation and self-employment have shown that facilitating the access of the poor to financial services can substantially contribute to the stabilisation of food consumption (seasonally and over years) and thereby improve nutrition. It also improves nutrition by enhancing the ability of the poor to access other nutritionally relevant inputs, such as health services and medication, in times of need. More work is needed, however, to develop safety-net mechanisms for credit repayment especially for poorer farmers. This is because crop failures due to drought or erratic rainfall are not uncommon in some parts of Africa, with the end result being that poorer farmers are unable to pay back their loans and may find their food security situation even worse than before.

Food Subsidies, Rationing, and Programmes targeting the vulnerable. Food-related income transfers are a widely used means of improving nutrition. Generalised food price subsidies are usually more

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31 Ibid.
costly than limited access subsidies and gives a less equitable distribution of economic benefits. Generally fixed-quantity rations have been successful in reaching the population groups which they targeted.

Over time, however, the initial objectives are frequently diluted as powerful interest groups, primarily the urban middle classes, have bought into the subsidy programmes for their own benefit. Costs of targeted subsidies are lower, but limited access programmes often develop problems with leakage and corruption that require close supervision and management. Self-targeting can be achieved to some extent by using commodities that are considered "inferior" in terms of consumer preference, and thus are more abundant in the expenditure patterns of the poorer populations. Geographical targeting can also be employed through the direction programmes and projects at food-deficit areas with poor populations, including urban neighbourhoods.32

Food programmes may be used for providing incomes to poor households. These programmes are expected to retain the higher food consumption effects of food-based income transfers and to reduce the administrative burden and costs incurred due to food handling and transport.

Direct Nutrition Actions: Direct nutrition actions aimed at addressing immediate nutrition problems, work best when they actively involve those who are directly affected in describing the problem and identifying the solutions. Such actions may include redressing problems associated with access to food (e.g., through supplementary feeding or targeted feeding programmes), combating specific nutrient deficiencies (e.g., micronutrient programmes), providing knowledge about nutrition and behaviour, overcoming detrimental nutrition-health linkages (e.g., health

32 LaMond Tullis, "Food Aid and Political Stability", in Tullis, F. LaMond and Hollist, W. Ladd, ed., Food, the State, and International Political Economy, p. 228.
sanitation programmes), or combinations of these, (e.g., integrated nutrition programmes).

- Targeted supplementary feeding programmes are generally aimed at those especially vulnerable to malnutrition—usually children and women of child-bearing age at low income levels. The targeting of feeding and food distribution programmes is achieved through a variety of means, including the use of health and nutrition criteria. Politically and socially, feeding programmes are often a more acceptable means of operating a targeted income-transfer programme.

Many countries operate school feeding programmes, which are effective when combined with nutrition education and school gardening. In low-income countries (that form the bulk of Sub-Saharan Africa), where school enrolment does not include the entire population of school-age children, school feeding may miss the most needy. But such programmes can be highly effective in terms of increasing school enrolment, promoting school attendance, and reducing dropout rates, thus contributing to long-term nutritional effects through education, while at the same time providing a cost-effective mechanism for food-based targeted transfers.

Micronutrient programmes have had considerable success in overcoming micronutrient deficiencies. However, much remains to be done, and a combination of actions need to be adopted concerning the availability of micronutrient-rich foods. These involve - the promotion of adequate food processing and preservation techniques, education related to food and nutrition to increase the consumer demand for micronutrient-rich and fortified foods, dietary diversification through production and consumption of micronutrient-rich foods, legislation and implementation of food fortification and supplementation, and appropriate public health measures.
Promoting healthy diets and lifestyles through education is one of the most challenging tasks in overall efforts to improve nutrition. In addition to access to a variety of safe and affordable foods, people need accurate information as to what constitutes a healthy diet and how to meet their nutritional needs. Besides education, strategies to promote better eating habits and positive health behaviour must include providing motivation and creating opportunities for people to change their behaviour while recognising individual preferences, lifestyles, and time constraints.

Dietary guidelines have been designed to help educate populations about good dietary practices and have focused on safe and adequate intakes to avoid deficiencies and to cover the needs of nearly all individuals in the population. These allowances have been used widely -to plan and procure food supplies for population sub-groups, to establish standards for feeding programmes, and to serve as the basis for nutrition labelling.

The promotion of breast-feeding and improved weaning practices is of primary importance to good nutrition, and food and nutrition education is essentially needed to achieve this. Food and nutrition education is not just about imparting information, but also about changing behaviour. In some circumstances, malnutrition may be caused by the misallocation of food in the household, inappropriate breast-feeding practices, inappropriate foods for children, insufficient feeding frequencies, diarrhoea or other health-related causes, and child care practices, many of which can be changed through behavioural changes. The limitations of nutritional education must remain in perspective as well. Many desirable behavioural changes require additional resources (including time) from households to enable such changes to take place. Nutritional education may thus be most effective
in combination with other poverty-reducing and nutrition-enhancing actions.

Protecting consumers through improved food quality and safety. A safe food and water supply of adequate quality is essential for proper nutrition. The food supply must have an appropriate nutrient content, and it must be available in sufficient variety and quantity. It must not endanger consumer health through chemical, biological, and other contaminants, and it must be presented honestly. Food safety and quality control ensure that the desirable characteristics of food are retained throughout the production, handling, processing, packaging, distribution, and preparation stages. This promotes healthy diets, reduces food losses, and encourages domestic and international food trade. Food quality encompasses the basic composition of foods and aspects concerning food safety. Consumers have the right to a good quality and safe food supply, and government and food industry actions are needed to ensure this. Effective food quality and safety control programmes are essential and may comprise a variety of measures, such as laws, regulations, and standards, together with systems for effective inspection and compliance monitoring, including laboratory analysis.

Nutritional health and integrated nutrition programmes. Since nutrition is a multifaceted problem, it seems logical to design policies and programmes in a similarly multifaceted way in order to achieve effective nutritional improvement. One of the most effective methods of identifying and targeting nutrition and health interventions is to monitor a child's growth. The International Conference on Nutrition (1992) called on governments to develop and strengthen growth monitoring and promotion and nutrition surveillance within primary health care systems. While such monitoring alone does not necessarily change nutritional status, it does provide important information to be used in actions such as
food supplementation, nutrition education, and medical referral, when needed.

For greater impact, growth monitoring of young children and nutrition counselling for their mothers may be combined with targeted interventions (on-site feeding, health checks, and services) for children found to be nutritionally at risk. Experience suggests that narrow sectoral approaches that focus exclusively on health, agriculture, or education cannot tackle the nutrition problem effectively.

Emergency prevention and relief. Food emergencies are often an indication of a lack of preparedness which entails a public commitment to intervene effectively and on time; an institutional capacity at international, national, regional, and local levels; an ability to detect and diagnose early indicators of distress and to prepare programmes and projects on a continuous basis; and a capacity to execute development and relief undertakings in times of need. Effective international early warning systems such as those supported by FAO are a significant advance.

The stockholding, trade policy actions, and food aid utilisation, including relief employment programmes, are an integral part of preparedness and response to emergencies. Activities with short-term household food security effects (such as targeted feeding programmes, national food distribution, expanded food imports through trade and food aid, expanded employment programmes, and household access to credit) may be elements of the relief action. If ineffectively addressed, food emergencies typically result in health emergencies and nutritional deterioration.

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33 Ibid.
Conclusion

Most of the countries of Sub-Saharan Africa, continue to experience food and nutrition problems on an increasing scale, despite growth in food production and food imports. This signifies that food availability has not kept pace with population growth in the region and that per capita wise food availability has declined. Therefore, to remedy this situation, greater efforts are required to boost food production and diversify the food supply to provide a more balanced and nutritious diet to the population.

However, it has been observed that malnutrition continues to plague Sub-Saharan Africa despite apparently having adequate supplies. This highlights the need to focus on problems of access to food and household level food security. Various factors influence the availability and consumption of food and therefore, nutrition. As discussed earlier, these include purchasing power, education, sanitation, the distribution of food and the quality of food. Therefore in order to alleviate undernutrition, there is a need to understand the multifaceted nature of this problem and work on the parallel improvement of all these at the same time.