PREPCOM/ICN/92/INF/5

INTERNATIONAL CONFERENCE ON NUTRITION

Major issues for nutrition strategies

Summary

1992

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
WORLD HEALTH ORGANIZATION

Printed in Italy

FOREWORD

The following summaries have been prepared by FAO and WHO for the papers on the eight general themes identified for the ICN technical preparations. These themes are meant to stimulate and focus ICN preparatory activities and follow-up by governments and international agencies.

The development of these themes results from numerous discussions between FAO and WHO, among the sister UN agencies and with the Advisory Group of Experts for the ICN. A number of individuals and organizations outside the UN system have also participated in their formulation.

In particular, FAO and WHO would like to thank the following people for their substantive contributions to the various themes - Improving household food security: Drs Joachim von Braun, Howarth Bouis, Shubh Kumar and Rajul Pandya-Lorch, IFPRI; Protecting consumers through improved food quality and safety: Dr F. Ed Scarbrough, USFDA; Caring for the socio-economically deprived and nutritionally vulnerable: Dr Patrice Engle and Dr Urban Jonsson, UNICEF; Preventing and managing infectious diseases: Dr Andrew Tomkins, Institute of Child Health, London; PromotinG? appropriate diets and healthy lifestyles: Dr Benjamin Torun, INCAP; Preventing specific micronutrient deficiencies: Dr Vinodini Reddy and Dr K. Vijayaraghavan, National Institute of Nutrition, Hyderabad; Assessing. analysing and monitoring nutrition situations: Dr John Mason, ACC/SCN; Incorporating nutrition objiectives into development policies and programmes: Dr Beatrice Rogers, Tufts University, School of Nutrition.

CONTENTS

IMPROVING HOUSEHOLD FOOD SECURITY

1. Food security is of supreme importance in improving the nutritional status of many millions of people who suffer from persistent hunger and undernutrition and many others who are at the risk of facing the same situation. There is a need to clarify the issues involved in achieving food security and to help formulate appropriate policies and measures to strengthen it. This paper focuses on the conditions necessary for ensuring access to adequate and safe food by the household and in general leaves the other issues related to nutrition for consideration under other ICN theme papers. However, while considering each of these themes, the linkages between them should be kept in mind.

2. Food security means access by all people at all times to the food needed for an active and healthy life. At the household level, food security refers to the ability of the household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of its members.

3. Ensuring household food security is a necessary condition for improving nutritional status, but, by itself, it is not sufficient. The nutritional status of each member of the household depends on three conditions being met: the food available to the household must be shared according to individual needs; the food must be of sufficient variety, quality and safety; and each family member must have good health status in order to benefit nutritionally from the food consumed.

4. Food insecurity leads to much human suffering. In addition, it results in substantial productivity losses due to reduced work performance, lower cognitive ability and school performance and reduced income earnings. Food security and adequate nutrition are beneficial outcomes in themselves as well as important inputs to economic development.

5. Food security has three dimensions. First, it is necessary to ensure sufficient food supply both at the national and local level. Secondly, it is necessary to have a reasonable degree of stability in the supply of food both from one year to the other and within the year. Thirdly, and perhaps the most critical, is to ensure that each household has the physical and economic access to food it needs.

6. An adequate food supply at the national level is necessary to achieve household food security. Adequacy of national food supply depends on domestic food production in relation to demand, trade policies, world food prices, foreign exchange availability to import food from the international market and availability of food aid. However, having an adequate food supply at the national level does not automatically lead to food security for all households; there may still be poor households which do not have the means to produce or the purchasing power to procure the food they need.

7. Inadequate access to food by the household can be either chronic or transitory. Chronic food insecurity describes a situation in which households constantly lack adequate access to food. Transitory food insecurity is a condition in which households do not have

access to food at certain times; it arises from failure of livestock and crop production, loss of employment, import difficulties, man-made and natural disasters and other adverse circumstances.

8. Household food security issues differ in rural and urban settings. In urban arm, household food security depends primarily on the level of income, often in the form of paid wages, in relation to prices of food and other consumer goods. In rural areas, household food security is most often determined by food availability and prices, which are commonly related to agricultural productions, and by incomes which are determined by both on-farm and off-farm employment opportunities. The number of the food insecure people is at present higher in rural areas, but the number of the urban food insecure is growing. With urbanization growing rapidly in most developing countries, chronic food insecurity among the urban poor is likely to become an increasingly important problem in the future.

9. National, regional and local availability of food depends primarily on production, stockholding and trade. Shortfalls in food production and/or in food availability through trade lead to food insecurity due to price rises or breakdown in distribution channels. At the household level, inadequate access to food is primarily due to poverty; poor households do not have sufficient means to secure the food they need. These are the households which suffer first and most when food supplies fall or food prices rise.

10. An array of policy measures, suited to the problems and conditions prevailing in each country, can be adopted to achieve food security at the household level. The choice of policies have to be attuned to the characteristics of a country's food security problem, the nature of the food-insecure population, resource availability and institutional capabilities. However, the aim of the selected policies should be to ensure that all households have the means to secure the food that they need on a sustainable basis, and that they are not subjected to excessive risks of fluctuations in obtaining the necessary food.

Selected Policy Measures

11. **Overall development strategy and macro-economic policies.** These should create conditions for economic growth with equity. Alternative development strategies can have strikingly different impacts on poverty alleviation and on food security. Country experiences show that much can be done to reduce food insecurity through public action even when national per capita income is low. In order for policies which aim at attaining poverty alleviation and food security to be sustainable in the long run, they need to be accompanied with policies of growth with equity.

12. The effects on the poor of structural economic imbalances, particularly in low-income countries in the 1980s, have stressed the relevance of macro-economic policies for food security. Macro-economic variables, such as the exchange rate, import/export policies, inflation and budget deficits, can have significant implications for prices, incomes, and employment, especially for the poor. Therefore, to be effective and sustainable, food security policies must be set in a growth-conducive macro-economic framework. Striking an optimal balance between fiscal policy requirements and food security needs presents a difficult policy choice for developing countries implementing structural adjustments programmes.

13. **Policies and programmes to accelerate growth in the food and agriculture sector and promote rural development.** Growth in the food and agriculture sector is vital for food security, in addition to ensuring an adequate and stable food supply, in most developing countries the food and agriculture sector also provides the livelihood for a majority of the population. Producer incentives and new technologies that increase production and employment in the agriculture sector can help augment incomes, alleviate poverty and improve food security.

14. Improving access to land and other natural resources can also make a significant contribution in increasing the production and incomes of food insecure households. Macroeconomic policies should complement agriculture sector policies in fostering growth. To ensure that production growth is sustainable in the long run, soil fertility and soil and water conservation need to be promoted.

15. Policies to increase food production and/or production of crops for sale can have a favourable impact on food security, especially when they increase and/or stabilize production or real incomes of food insecure households. However, policies for food self-sufficiency at any cost, or "food first" policies that prefer food crops to the exclusion or neglect of cash crops, are not necessarily the best way to achieve food security or to alleviate hunger and undernutrition either at the national level or at the household level. This is especially so when market infrastructure and policies do not inhibit trade.

16. Agricultural growth stimulates, through multiplier effects, employment and income in the non-agriculture sector as well, which in its turn further enhances food security. At the same time, agricultural growth permits the household to expand household assets, which increases its resilience to adverse impact of falls in production and incomes on food security. Sale of cash crops on the market increases household income and is thus likely to increase food consumption, provided the switch to cash crops does not lead to a change in income control within the household or to decisions for its disposal that could reduce expenditure on food.

17. **Stabilization of food supplies.** These policies often include stockholding by governments to meet requirements in periods of crop shortfalls and/or during the period before the harvest. Limited stockholding, especially in the form of strategic food security reserves, as a first line of defence in emergencies is useful. However, stockholding is costly and a cost-benefit balance of such policies is required. Price stabilization can be costly and evidence increasingly suggests a "minimalist" approach. One alternative is to rely on trade-oriented policies which enable the country to obtain food supplies from the world makets either on commercial terms or as food aid. In practice, an appropriate policy mix involving some stockholding and some reliance on world markets would need to be adopted in' the light of the circumstances of the individual countries. Investments in agriculture are also often needed to improve post-harvest handling, storage, preservation and distribution to reduce losses at all stages. Incentives to promote food processing at the local level and to better utilize arid preserve indigenous foods would contribute to security particularly during times of seasonal shortages.

18. **Credit to the poor households.** Promoting self-employment through private investment can be a useful policy instrument for strengthening food security. Credit programmes that have been found to be most successful for these purposes are those that combine small-scale credit with group motivation, technical advice and assistance. Credit programmes aimed at women have been particularly beneficial to food security.

19. **Increasing employment opportunities.** This is another key area for action for alleviating rural and urban poverty. The private sector can play a very important role in augmenting employment opportunities in both agriculture and industry. Labour-intensive public works can increase the incomes of poor households and can also be an effective instrument in food security strategy. Such policies can be doubly beneficial. In the short run they can increase the incomes of poor households and thus improve their food security. At the same time they can increase their income earning capacity in the long run by creating productive assets such as irrigation facilities and roads. Public works programmes can reach the food insecure by concentrating on disadvantaged regions where poverty predominates. Self-targeting can also be incorporated in properly designed labour intensive public works, as in employment guarantee schemes.

20. **Income transfer schemes.** Increasing the food consumption of poor households can be accomplished through targeted feeding programmes, food stamps and targeted food subsidies. However, country experiences illustrate the difficulties of achieving universal food security on a sustainable basis through generalized food subsidy programmes. Such programmes involve considerable strain on the resources and administrative capabilities of developing countries. One policy alternative would be to introduce targeted food subsidies instead of general food subsidies. Targeted food subsidies require identification of vulnerable groups and introduction of food distribution schemes which cater to the needs of these groups only. However, these involve costs and administrative infrastructure which are often out of reach of many developing countries. An alternative is to introduce self-targeting schemes, which, for example, select for distribution only those food items which are consumed primarily by the poor or to locate food distribution centres where the poor live.

21. **National PreparednessPlanning and Emergency Relief Programmes.** Programmes involving food distribution and/or public works programmes are of particular importance in these circumstances. National and local level administrative capacities and infrastructure for storage and distribution are important determinants of the effectiveness of relief programmes in coping with food insecurity resulting from emergencies.

22. The formulation of national preparedness plans and an effective early warning system is essential for prompt and timely response to emergencies. These can benefit from the involvement of local communities and non-governmental organizations, particularly in emergency relief programmes. A strengthened mechanism at the international level such as the International Emergency Food Reserve (IEFR) can be of great importance to secure effective and timely response from the international community in meeting emergencies.

23. **Coping mechanisms which households adopt in emergencies.** Three basic stages can be identified in the pattern of household coping or the failure thereof loss prevention, crisis damage containment and household collapse. In order to cope with emergencies effectively, it is important to understand the coping behaviour of the households in order to

strengthen their capacity to face emergencies. However, it is obviously not enough to leave the poor households to rely solely on such mechanisms, as they are not adequate to protect them from the life-threatening impact of emergencies. Moreover, when emergencies occur frequently and in quick succession the strength of the coping mechanisms themselves is greatly reduced, thus exposing the households to the most severe effects of adverse situations. Due to lack of resources, inadequate institutional support and other factors, household coping mechanisms are not always efficient or effective in off-setting the adverse impact of emergencies, whether natural or man-made.

24. Achieving food security on a sustainable basis, that is, keeping pace with growing food needs, remains a global challenge. A long-term commitment to formulate and implement appropriate policies and programmes supported by the allocation of sufficient resources is needed. The primary source and strength for tackling the problems of food insecurity have to be indigenous. However, due to budgetary and institutional constraints, many developing countries face very difficult choices in tackling the problem of food insecurity. The country-specific challenge is to adopt appropriate policy mixes of the type discussed above to meet the country's food security needs.

25. A the same time, there is a need for a concerted approach by national governments and the international community, including international organizations. Developed countries can play a very crucial role not only in terms of providing financial, food and technical assistance to support the national efforts but also through widening the trade opportunities for the developing countries. A successful outcome of the Uruguay Round of the Multilateral Trade Negotiations in the GATT can contribute significantly to improving food security in many developing countries.

26. Food security policy must evolve as a basic element of a social security policy, and can only be achieved by proper division of labour between various private and public actors at both the national and international level. Cooperation among agencies and ministries, especially agriculture and health is essential. International agencies have a key role to play in fostering incentives for such cooperation at the country level. Achieving food security requires economic development and large-scale public commitment.

PROTECTING CONSUMERS THROUGH IMPROVED FOOD QUALITY AND SAFETY

1. The causes of nutritional problems are broad, and eliminating such problems is not merely a matter of increasing or altering food supplies. A safe and adequate quality food supply is essential for proper nutrition, foods must have appropriate nutrient content and must be available in sufficient variety, they must not endanger consumer health through chemical and biological (i.e. bacterial, parasitical and viral) contamination and they must be presented honestly. Food safety and quality start at the farm and continue throughout the processing and distribution chain to storage and final preparation by the consumer or food service industry. Good agricultural and manufacturing practices, including processing, distribution, and marketing are essential to ensure consumer protection. Any factor that leads to exposure to hazardous chemicals or biological agents, inadequate or excessive nutrient intakes, or impairs their optimal utilization, contributes to malnutrition.

2. An effective food control system improves the nutritional status of the population, directly and indirectly. It operates through: (1) ensuring that nutrient composition of foods is retained during the food chain i.e. production, storage, handling, processing, packaging, and preparation; (2) preventing and controlling biological and chemical contamination of foods; (3) promoting hygienic practices throughout the food industry by establishing appropriate codes and standards and training of food handling personnel; (4) reducing food losses caused by spoilage, contamination or improper storage or distribution; (5) promoting a safe and honestly presented food supply by requiring composition and nutrient information on 'food labels; and (6) protecting consumers against being offered foods that are injurious to health, are unfit for human consumption, or are nutritionally or economically debased. In addition to contributing in improvements of nutritional status, food control system encourages the orderly development of a nation's food industries, creates greater outlets for the farmers produce, stimulates increased foreign exchange earnings through export of foods that comply with acceptable standards, and avoids losses that occur when substandard foods are traded. All these effects help to create jobs, increase incomes, and ultimately improve nutritional status as consumers' diets become more varied and nutritious.

3. Thus, **strengthening food control systems** and **educating consumers** about appropriate food handling practices are both essential to proper nutrition. Governments, the food industry, consumers, and international agencies all have particularly important and interrelated roles to play.

4. Governments have a responsibility to ensure that a safe, nutritious, and varied food supply is available to enable their populations to choose a healthy diet. This requires, in addition to the food supply itself, comprehensive **legislation, regulations, and standards,** together with an organization for effective inspection and compliance monitoring, including laboratory analyses. Given the inevitable shortfall in resources for inspection and compliance monitoring, decisions have to be made on the order of priorities to protect public health and to ensure fair trade, such as microbiological hazards, chemical residues and quality standards. This will vary from country to country. **Publication of compliance and surveillance activities** gives the public confidence in the safety of the food supply, as it also does to

countries importing food. An effective food control system will in many cases be a prerequisite for food exports to some markets; it is therefore important in economic as well as public health terms.

5. **Governments** also have a role in educating consumers and advising the food industry about a variety of topics, including food handling practices, minimizing food spoilage, and avoiding contamination. Both industry and consumers should be made aware of food laws, regulations and standards. Education programmes should especially be directed toward certain target groups, including the economically disadvantaged, the recently or rapidly urbanized, women as the primary household care givers, children, individuals with special nutrition needs, food handlers, farmers, industry supervisors, educators and health professionals. Governments also establish food and nutrition labelling regulations as well as guidelines for advertising to help consumers make better informed decisions.

6. Governments have further roles which include information gathering through general monitoring of the food supply for quality and safety, special surveys when problems are detected or suspected, and the gathering of epidemiological data on the nature and extent of foodborne diseases. Governments should bolster their understanding of food quality and safety by conducting research in public health and in food technology. It is a special responsibility of governments to see that food quality and safety programmes are integrated into other government-sponsored nutrition-related programmes, such as feeding programmes, nutrition education programmes, and other intervention programmes.

7. **The role of industry** in ensuring food quality and safety extends from agricultural production through food service. Good agricultural practices by primary producers include proper pre-harvest use of pesticides, fertilizers, veterinary drugs and post harvest control of storage, chemical use, handling practices, and transport. The food industry also has a role to play in developing alternative cost-effective technologies for food safety. The industry must also play a role in consumer education.

8. Consistently high quality standards are vitally important to the success of any food and beverage manufacturer in the competitive marketplace. Consumers buy products repeatedly only if they prefer them over competitive alternatives and have confidence in their wholesomeness. **Good manufacturing practices (GMPs)** are an important part of a total quality control system. They include product design using ingredients meeting established standards, compliance with codes of hygienic practice and the use of suitable technologies and distribution systems that ensure that the product reaches the consumer in satisfactory condition. While GMPs alone are not a guarantee of safety at the point of consumption, modem food handling and processing technology and quality assurance techniques are having a major impact on food safety. Good manufacturing practices may be more difficult to achieve in developing countries, although they are crucial for promoting food export.

9. **Consumers,** individually or through organizations, can do much to discourage food adulteration and fraudulent practices. A major influence by consumers on food quality and safety can be achieved through the exercise of discrimination in the marketplace. Consumers and consumer groups can be invaluable in connection with consumer education about improved sanitation and safe food handling, better nutrition, and improved general health. Community participation should be encouraged and used to the fullest extent.

10. **International organizations** have a role in assisting developing Member Nations in establishing or strengthening their national control systems and in developing suitable guidelines, educational and reference materials which can be adapted to local conditions of different countries. International organizations advise governments on food quality and safety, including the safe use of food additives and their permitted levels in various foods, and the recommended maximum levels of different contaminants in food. On a global basis, international organizations play an important role in the assessment of both the scope and magnitude of food contamination problems through the monitoring of selected contaminants in major food items, and occurance of foodborne diseases.

11. In addition, international organizations have a unique role to play in developing standards and guidelines for food quality, safety and labelling, such as those standards developed by the **Codex Alimentarius Commission (Codex),** a subsidiary body of FAO and WHO. These international standards protect the health of consumers while ensuring fair trade practices. Food standards are important in the international and national trade of foods. Standards and codes of practice are an integral part of national and international food security systems, ensuring the quality and safety of food.

CARING FOR THE SOCIO-ECONOMICALLYDEPRIVED AND NUTRITIONALLY VULNERABLE

1. Every year millions of children falter in their growth, fail to develop their intellectual potential, or die because of malnutrition. While the immediate causes of malnutrition may be inadequate dietary intake in relation to needs and disease, the underlying causes of malnutrition are more complex. In general, the underlying causes may be related to problems of household food security; access to health services, combined with an unhealthy environment; and care of nutritionally vulnerable household members, particularly women and children. Adequate food, health and care are all necessary for nutritional well-being.

2. Care refers to the provision in the household and community of time, attention, support and skills to meet the physical, mental and social needs of nutritionally vulnerable groups. Care can be provided within families, communities or by external institutions. Among the nutritionally vulnerable groups, attention is often focused on the growing child, but other vulnerable groups include mothers, refugees, the elderly, the disabled, the landless and the unemployed.

3. Caring capacity relates to the ability to use human, economic and organizational resources for the benefit of the household. It therefore involves issues of knowledge, time and control over resources. In the context of nutrition, it facilitates the optimal use of household food resources for child feeding, and of parental resources to protect from infection and care for the sick child or other vulnerable members of the society. More generally, it includes responding promptly to nutrition needs and nurturing physical, psychological and emotional well-being, which, in turn, will benefit nutrition and health.

4. The provision of adequate care for children has, above all, to do with parents, and particularly, the roles of and resources available to women as the major caregivers. In general, policies to improve care for children should relate most directly to strengthening the family as a social and economic unit. However, caring capacity exits not only at the family level, but also at the level of the community, and to a lesser extent, at the level of the State. In most communities, traditional institutions exist to support its members during time of stress, and state-based social security systems exist in many countries.

5. Specific caregiving for children includes breast-feeding, providing security and reducing child stress, providing shelter, clothing, feeding, bathing, supervision of toilet, preventing and treating illness, and showing affection, interaction and stimulation, playing and socializing and providing a safe environment for exploration. It also includes the use of resources outside the family, such as curative and preventive health clinics, prenatal care, traditional healers or members of the extended family network. Breast-feeding is a prime example of care, since it combines food security, caring and healthy environment in one action. The way in which these activities are performed is an important aspect of care: the motivation, skill, physical capacity, consistency, and the responsiveness of the caregiver to the child’s needs, are all related to child survival, health and development.

6. The responsibility for providing care often falls disproportionately on women. Care of the mother, either by herself, her family, through social support in the community or the social service networks, will have direct effects on her ability to care for children. However, efforts to improve women's health and well-being should recognize the rights and needs of women to develop as individuals in their own right.

7. Common constraints to providing care, and how they may be addressed, include:

a. Poor physical and mental health. Physical health includes nutrition, medical care services, prenatal care and care for the girl child. Mental health needs of the woman include self-confidence, absence of depression, and reasonable levels of stress. Programmes can be designed which empower her to use her own skills, and to learn new ones that allow her to feel confident in a larger sphere. Access to publicly-provided health and related services is essential, including general health, pre-natal, obstetric and family planning services. Improved birth spacing and weaning practices will improve the health of women and children. Education on the value of family planning also needs to be targeted towards men.

b. Low levels of education, lack of support for traditional wisdom, and beliefs about care. The demand for care, or the perception of the importance of early and intense investment in the child, varies from culture to culture and between individuals, as will the understanding of the meaning of mothering, of fathering, and of care. Education and literacy are fundamental to achieving benefits from other policies. Adult education and literacy classes are important, as are carefully tailored education on child care, including communicating the importance of exclusive breast-feeding in the early months of life, increasing the energy density and quality of complementary foods, decreasing contamination and maintaining frequent feedings.

c. Lack of support from family or community. Such support can increase the care for children and women through a reduction of workload, economic assistance, knowledge, or emotional support. Many societies have traditional mother's helpers who provide assistance during childbirth and postpartum period, including advice and emotional support. Community groups can also provide support for children and women. Programmes can increase support by forming women's organizations, increasing the support provided by older siblings, or encouraging the father's support in child care. Social security systems for women can be expanded in those countries that can afford them.

d. Heavy workload in income generation and household production tasks. Often the very heavy workloads of women, particularly during the agricultural season, place a physical and emotional burden on them and consequently reduce their ability to provide care for themselves and their families. Technology and infrastructure can relieve demands on women's time and efforts. These include water collection and fuel gathering, access to health services, and technologies for improving hygiene and sanitation.

e. Household resources and the woman's control of resources Increasing household income will enhance child nutrition to some degree, but the effects on children's nutritional status may be greater if the woman has some control over the household

resources. Women's property and income rights can be strengthened through legislation and access to credit and household income, through both increased involvement in household decision-making and increased wage employment.

8. The elderly are rapidly becoming a substantial proportion of the population in both developed and developing countries. Proper nutrition plays an important role in preventing or postponing the development of chronic diseases in later life, and systems of care should encourage the elderly to follow sound nutritional practices. Food intake usually declines with age. This is usually associated with decreased needs due tolowered basal metabolic rates, reduced physical activity and a lowered lean body mass. Other factors such as apathy and depression can contribute to decreased appetite, as can the use of some medication and alcohol. Increasing poverty among the elderly also increases the risk of nutritional deficiencies among this group.

9. In some societies, the elderly can become socially isolated, and programmes to address this problem may be needed. Community-based care services for the elderly should be fully integrated into systems of primary health care. Programmes providing food commodities or prepared meals can help to ensure proper diets. The traditional family care structures found in all societies are generally supportive of the elderly; however, many of these structures weaken as countries become more urbanized.

10. Caring strategies also operate at national and international levels. When refugees cross international borders, international agencies are compelled to protect their welfare. At least 35 million people in the world today have either fled their country as refugees or have been displaced internally, usually by civil war. Refugees suffer from the same type of diseases as other vulnerable groups and often, more so, due to their increased destitution. Malnutrition, infectious diseases and mental/emotional illness are some of the more common consequences of being displaced.

11. Refugees need resources to help them to sustain their livelihoods as well as to meet their immediate needs. The resources they receive as assistance, including food, should be viewed as economic goods or support, and such "informal monetization" should be taken into account in the design of appropriate caring strategies. Where food rations are provided, allocation should be based on need rather than the immediately available resources of donors.

12. Strategies to care for the disabled, such as the blind, should aim to support livelihoods rather than increase their dependence on external assistance. The family and community organizations which help people to cope with their disabilities should be promoted along with jobs and skills training.

13. Actions to improve care by addressing the basic causes of malnutrition include:

a. Improving the technical/material means of production. Programmes to increase agricultural productivity, improve conditions of informal work, or mitigate problems of seasonality will indirectly improve the conditions of care by releasing time for caregiving.

b. Determining whether the social conditions of production influence the availability of care. Gender division of labour, which results in more equitable labour burdens for father and mother, or increased control of the means of production by the mother, may result in improved nutrition for children through greater availability of care. More broadly, the status of women, or a more equitable distribution of resources within a country may have positive effects on child nutrition through increased household food security, health services, or care.

c. Developing legislative and political initiatives to relieve constraints on care. Nutrition programmes can be tied to the Convention on the Rights of the Child, the World Summit for Children, and the Convention on the Elimination of All Forms of Discrimination against Women. Policies on maternity leave, breast-feeding breaks, and child care facilities at the workplace could be adopted. Legislation to insure women equal access to higher-level employment, to child support in cases of divorce, and to father recognition of children could be recommended.

d. Determining whether cultural/ideological factors are increasing the availability of care. Traditional beliefs which support child nutrition should be enhanced. However, many of the caregiving environments are undergoing rapid change through urbanization, migration: family disruption, and environmental degradation, and creative strategies are needed to reverse the negative impact of these trends on family support systems.

e. Including care in nutrition training programmes. Training and texts about infant and child feeding should include a recognition of the social nature of feeding, the process of child development, and the interaction between child characteristics and health and nutritional status. Medical personnel could be trained in the importance of behavioural aspects of health and in the relations between children's characteristics and care. Finally, training should also focus on the significance of the mother's health and mental well-being for nutrition.

PREVENTING AND MANAGING INFECTIOUS DISEASES

1. The interaction between nutrition and infection, often called the "malnutrition-infection complex" (MIC), remains the most prevalent public health problem in the world today. Of the 13 million infants and children who die each year in developing countries, most deaths are due to infection and/or parasitic diseases, and many, if not most, of the children die malnourished. The relationship between malnutrition and infection accounts for much of the high morbidity and mortality under circumstances of high exposure to infectious diseases and inadequate diet characterizing many poor communities.

2. This malnutrition/infection complex refers to a situation in which nutritional status influences the outcome of exposure to infection at the same time as infection contributes to a deterioration in nutritional status. Inadequate dietary intake leads to low nutritional reserves, which are manifested as weight loss or failure of growth in children. Depleted nutritional reserves are associated with a lowering of immunity. Control of infectious diseases and dietary/nutrition interventions are of major importance in breaking the cycle of malnutrition and infection.

3. In protein-energy malnutrition and vitamin A deficiencies, there may be progressive damage to mucosa, lowering resistance to colonization and invasion by pathogens. Lowered immunity and mucosal damage are the major mechanisms by which defences are compromised. Under these circumstances, the incidence, severity, and duration of diseases may be increased. The diseases themselves exacerbate loss of nutrients, both by the physical loss from the intestine and by the host's metabolic response. These factors worsen malnutrition, leading to further damage to defence mechanisms. At the same time. many diseases are associated with a loss of appetite and other possible disabilities, further lowering the dietary intake.

4. Infections and parasitic diseases also have an impact on adult physical performance, work capacity and consequently on food security and nutritional status. This is well documented for malaria, onchocerciasis, schistosomiasis and various intestinal parasites. However, there are few infections with the potential for as profound an effect on food production capacities and nutritional status as HIV (human immunodeficiency virus) which causes AIDS. In households and severely affected communities, AIDS is likely to have a significant impact on the ability of people to produce, market, procure and prepare food.

5. Both the traditional and the modern health sector, through primary health care, have a role to play in controlling infectious disease. Immunization, early recognition and intervention in growth faltering, breast-feeding promotion, emphasis on adequate dietary intake, especially during infancy, as well as family planning, are public health measures that contribute to preventing infections. Controlling infectious diseases also involves improving the health environment.

6. Dietary management during illness seeks to modify the course and outcome of infection by the improvement of food intake during disease and recovery, particularly in young chiildren. This includes: continuation of breast-feeding during infections; use of

rehydration therapy in treatment of acute diarrhoea; maintenance of diet during persistent diarrhoea: administration of vitamin A in the management of measles, acute diarrhoea and respiratory infections; administration of iron during the treatment of malaria and parasite control where intestinal parasite infestation is prevalent.

7. The prevention and control of malnutrition/infection requires substantial inputs from other sectors, in addition to health. Improvements relating to food safety, housing, water supply and sanitation are important steps towards preventing infection. Primary education has an important role to play by stressing rudimentary nutrition principles and health. At the same time, nutrition and health improvements are unlikely to be sustained if socio-economic status does not improve concurrently.

PROMOTING APPROPRIATE DIETS AND HEALTHY LIFESTYLES

1. Promoting better eating habits and positive health behaviour is one of the most challenging tasks in the overall effort to improve nutrition. Nutritional problems broadly fall into two categories: those due to insufficient intake relative to needs and infections, and those due to an excessive or unbalanced intake of food or particular dietary components. In both instances, improvements in nutritional well-being will depend on people having access to a variety of safe and affordable foods, understanding what constitutes an appropriate diet and knowing how they can best meet their nutritional needs from available resources. Strategies to promote healthy diets, in addition to education, should include motivating people and creating opportunities for them to change their behaviour, taking into account economic factors, individual preference, lifestyles and time constraints.

2. In terms of nutrition and its relation to health, the first concern of national authorities must be securing for all sectors of the population adequate supplies of good quality and safe food in order to prevent deficiencies of macro- and micronutrients. This is the highest nutritional priority in most developing countries, where nutritional deficiencies such as protein-energy malnutrition, anaemia, iodine deficiency disorders, and deficiencies of vitamin A and other micronutrients are among the most pressing public health and social problems. Some of these same deficiencies are also found among vulnerable groups in developed countries.

3. However, excessive and unbalanced intakes of food or certain dietary components, in association with changes in lifestyle, are related to a range of chronic non-communicable diseases such as coronary heart disease, cerebrovascular disease, various cancers, diabetes, dental caries, and osteoporosis. These are now among the main causes of morbidity and mortality in most developed countries, and they are emerging as significant public health problems in many developing countries. Modifications in diet and life-styles can be expected to reduce the incidence of these diseases. The functional and financial burden of these emerging diet-related diseases on theindividual on health services and on social security systems are considerable, and must be addressed.

4. Numerous economic, social, cultural and educational factors are inexorably linked to people's diets and lifestyles. Poverty and social inequity are the major underlying causes of many of these problems, but others are due to unhealthy habits, ironically in pursuit of a better or more comfortable life. Although education and information play an important role, the way people eat and live is not always a matter of choice for vast segments of the world's population. An overall objective should be to improve the social, cultural, environmental and economic conditions that influence people's behaviour in relation to diet and other aspects of their lifestyle.

5. Current scientific evidence of the relationship between diet and health indicates that diets most clearly associated with a reduced risk of chronic diseases, including heart diseases and some forms of cancer, are those that are moderate in energy, low in fat (especially saturated fat and cholesterol), contain adequate amounts of complex carbohydrates and dietary fibre, are moderate in their salt content, and contain adequate vitamins and minerals.

Diets rich in plant foods, including fruits, vegetables, legumes, and whole grain cereals, are associated with a lower incidence of coronary heart diseases and some cancers. Specifically, diets rich in green and yellow vegetables, citrus fruits, and low in salt-pickled, smoked and salt-preserved foods, are related to a lower risk of cancer, including cancer of the colon, prostate, breast, stomach, lung and oesophagus.

6. When the general policy objectives to improve nutrition have been determined, strategies and actions to reach them include:

- nutrition education and dietary guidance for the general public;
- training of professionals in health care, agriculture extension, and related services;
- development of food-service guidelines;
- involvement of consumer groups and the food industry;
- ensuring food quality and safety;
- monitoring and evaluating national food and nutrition situations;
- encouraging the availability of the variety of foods needed to meet consumer demand.

7. To encourage and promote overall health, official nutrition goals and dietary recommendations have been issued by government agencies in different countries and by various national and international panels of experts. Traditionally, recommended dietary allowances have focused on adequate and safe intakes to avoid deficiencies and to ensure that energy is adequate for the needs of nearly all adults, and for the growth development and activity of children. More recently, however, dietary recornmendations and guidelines reflect growing concern about diet-related non-communicable diseases, and recommendations now frequently include recommendations for intake of those dietary components that are associated with risk of these diseases. These guidelines provide advice, appropriate for the populations concerned, on selecting a balanced diet that promotes health. Appropriate advice on food purchasing and preparation should be provided. The basic guidelines adopted in many developed countries are quite similar and they include the following principles:

- adjust energy intake to energy expenditure to maintain desirable body weight;
- avoid excessive fat intake and, especially, intake of saturated fat and cholesterol;
- increase intake of complex carbohydrates and dietary fibre and limit sugar intake to moderate levels;
- limit salt intake to a moderate level;
- limit alcohol intake.

8. In addition to qualitative dietary guidelines, quantitative nutrient goals have been proyosed in some countries. The WHO Study Group (1990) has recommended population nutrient goals which provide upper and lower limits within which average intakes should fall for good health and nutrition. The group envisaged that the population nutrient gods would be useful as general planning tools to evaluate the adequacy of a given food supply and the effectiveness of social communication efforts.

9. The use and interpretation of food labelling plays an important role in education and information strategies for promoting healthy diets. The recommendations of the FAO/WHO Codex Alimentarius Commission, and legislation that has been approved in several countries on this basis, are designed to provide this basic information to consumers, while ensuring that foods are presented honestly by food manufacturers and vendors. Information provided on food labels needs to be supported by coexisting nutrition education programmes.

10. Evidence from a number of countries indicates that well-executed nutrition communication campaigns can change knowledge and attitudes and alter behaviour, resulting in improvements in nutritional status. For example, in the United States mortality from cardiovascular disease in men aged 30-69 years decreased by 49% between 1970 and 1985. It was estimated that a reduction in average blood cholesterol levels, which are directly linked to decreased intakes of saturated fat, accounted for 30% of this decline. Taken as a whole, the evidence from comparisons among and within developed countries supports the view that many chronic diseases can be prevented, or their onset at least considerably postponed, through changes in lifestyle and diet.

11. Many sectors play a major role in the promotion of healthy diets. The public sector, including health professionals, can work to educate the general public about diet and health. The food industry plays an essential role by responding to consumer demand to produce and market the variety of foods that contribute to a healthy diet. Formal and non-formal education play a central role. Incorporating nutrition into education in general, within the context of local culture, is recommended. In addition to school systems, the health and agriculture sectors, public: information channels, worker organizations and management, youth groups and community leaders should take an active role in education and promotion of nutrition and healthy lifestyles.

12. The mass media can make major contributions, and should work along side government and technical experts from the early planning stages of campaigns to promote nutrition and health. The private and commercial sector can cooperate by promoting scientifically sound information and advertising. The influences of consumer groups and community leaders on private sector and government actions sensitive to public opinion, are also important.

13. All recommendations to encourage and sustain appropriate diets and healthy lifestyles should be culturally acceptable and economically feasible. The quality of traditional foods should be emphasized, when appropriate. Promotion of dietary guidelines should be widely promoted through government, health services, schools, feeding Programmes, the mass media, food industry, advertising and by consumer and community groups.

PREVENTING SPECIFIC MICRONUTRIENT DEFICIENCIES

1. Micronutrient malnutrition is the term now commonly used when referring to the three main vitamin or mineral nutritional deficiencies of public health significance - iodine deficiency disorders (IDD), vitamin A deficiency and iron deficiency anaemia. Micronutrient deficiencies substantially affect the nutritional status, health and development of a significant percentage of the population in many countries, both developed and developing. Deficiencies in these micronutrients contribute to growth retardation, morbidity, mortality, brain damage, and reduced cognitive and working capacities among both children and adults.

2. The main causes of micronutrient malnutrition are inadequate intake of foods providing these micronutrients and their impaired absorption or utilization. For iodine, this is largely due to environmental iodine deficiency. For vitamin A and iron, this is often associated with infections that can increase the metabolic consumption of micronutrients or that can reduce their absorption.

3. Iodine deficiency is a major risk factor for both the physical and mental development of at least 1 000 million people living in iodine deficient environments around the world. Goitre is the most common manifestation of IDD, affecting 200 million people. Individuals of all ages living in iodine deficient areas are at risk of IDD. In pregnancy, iodine deficiency causes spontaneous abortions, stillbirths, impaired foetal brain development and infant deaths. In childhood, iodine deficiency can also cause mental retardation, neurological complications such as speech and hearing defects, squint, paralysis, and other physical disorders. Worldwide, it is estimated that some 20 million people have some degree of brain damage due to iodine deficiency, including 6 million afflicted by the severest form, cretinism. While the more severe effects of IDD are not reversible, they are preventable.

4. Vitamin A deficiency is the most common cause of preventable childhood blindness. As a result of insufficient dietary intake and absorption of vitamin A, or its impaired utilization, nearly 13 million pre-school age children suffer severe form of eye damage. At least 500 000 of these children become either partially or totally blind each year, and of these, approximately two-thirds die a few months after becoming blind. Currently, vitamin A deficiency is a serious public health problem in Africa, Southeast Asia and the Western Pacific. Vitamin A deficiency can also contribute to decreased physical growth and impaired resistance to infection and lead to increased mortality in children.

5. Iron and folate deficiency are responsible for anaemia in approximately 1 000 million people worldwide while another 1 000 million are iron deficient, having deficient body iron stores but without frank anaemia. This is due not only to diets with insufficient iron content, but also to reduced bio-availability of dietary iron, increased requirements and losses due to parasitic infections. Africa and Asia are the regions with the highest prevalence, followed by Latin America and East Asia. The prevalence of iron deficiency anaemia reaches approximately 40%-60% among many population groups with pregnant women and pre-school children being the most affected. Anaemia has serious effects on women's health and contributes to intrauterine growth retardation, low birth weight and increased maternal and

perinatal mortality. Iron deficiency in infancy and childhood is associated with significant loss of cognitive abilities, and also impairs ability to resist disease. Iron deficiency anaemia also reduces work capacity, with adverse effects on productivity and earnings.

6. Various strategies and interventions are feasible to address micronutrient deficiencies. These include dietary diversification, food fortification, supplementation and public health and other general control measures. Each of these strategies is likely to play some role in most countries, but the appropriateness of each needs to be determined at country level. Successful programmes for prevention have to date been most notable for IDD, and to a lesser extent for vitamin A deficiency and anaemia. Better planning and targeting of interventions could generally be possible following an assessment of the magnitude and severity of the problems. This assessment should identify the population groups and the geographical zones within each country that are affected by or at risk of each deficiency.

7. The basic strategy for preventing micronutrient deficiencies centres on increasing the availability and consumption of micronutrient-rich foods. Food production, processing and preservation activities are part of this strategy. The main advantages to this coupled with nutrition education are its long-term sustainability and cost effectiveness, its ability to correct multiple micronutrient deficiencies simultaneously, and its contribution to people's self-reliance. This approach is relatively less applicable for IDD, but more feasible for iron and especially valuable for vitamin A.

8. Food fortification is another successful method for reducing micronutrient deficiencies. Fortification of salt with iodine has proved, in many countries, to be the best solution for reducing IDD. As a result of salt fortification, iodine deficiency has already been eliminated in 18 countries, one of the best records of success for addressing any of the micronutrient deficiencies. Fortification of salt with iron has been successfully implemented in the control of anaemia, and fortification of sugar with vitamin A has obtained positive results in Latin America. Many other vehicles have been identified as suitable carriers for micronutrients, including water for iodine, milk and margarine for vitamin A, monosodium glutamate for vitamin A and iron, and wheat and rice for iron. The main difficulties with food fortification activities, although cost-effective, are related to technical and distribution problems, the necessity of adequate legislation and the need for an effective system for controlling and fortification process. Governments and the food industry need to work together to reduce costs and ensure product quality.

9. Micronutrient supplementation should, in general, be regarded as a short-term measure to be used until more sustainable food-based approaches are implemented and become effective. Supplementation efforts have met with varying degrees of success. Distribution of vitamin A capsules can be effective in preventing eye damage and may be relatively inexpensive to undertake in countries with well-established health care systems. Iron tablets frequently are distributed to women through health centres and maternity clinics, but often with limited success due to problems of compliance. Iodine oil distribution campaigns in high at-risk areas which are difficult to reach by other methods have been successfully attempted in various countries, but often at a higher cost than if iodized salt is used. The disadvantages of these interventions, in addition to their unsustainability over the medium and long term, are the low percentage of population covered, the lack of capsules, tablets and injectable oils in the areas at risk, the monitoring of such programmes, the

difficulty of reaching the populations most in need, the insufficient training of health workers and in the case of injectable iodine, the risk of HIV and hepatitis infections due to the use of non-sterilized syringes.

10. Public health measures provide necessary support for the above approaches. These include the prevention of infections through environmental health programmes, such as water quality, sanitation, and food hygiene, and others such as immunization, control of endemic diseases, MCH, essential drugs and all primary health care programmes.

11. Reaching these goals will require action at several levels, and cooperation among governments, non-governmental organizations, the private sector, international organizations and communities.

ASSESSING, ANALYSING AND MONITORING NUTRITION SITUATIONS

1. Nutritional status is an outcome of a wide range of social and economic conditions and is a sensitive indicator of the overall level of development. Nutrition-related information is essential for selecting and implementing effective policies and programmes to improve nutritional well-being. To be useful, information must be provided to the appropriate decision-makers in a timely manner and in an easily understood format. Information related to nutrition is needed for a variety of purposes, such as: identifying chronic nutritional problems and causes; predicting and detecting short-term or acute nutritional problems; targeting population groups for both short-term relief efforts and longer-term policy and programme development; monitoring changes and evaluating the impact of interventions and development programmes.

2. Efforts to collect and analyse nutritional information must be cost-effective, timely and directed toward specific goals such as preparation of development plans, programme design and management and budget decisions. Two fundamental principles in choosing assessment and monitoring methods are: 1) information is useful only if it is used, and 2) the resources used for data gathering and analysis must be balanced against the even greater resources required for intervention. Clearly, only relatively minor resources for information are justified in an exploratory phase. While the cost of information is low compared with ineffective expenditure, continued expenditure on information in the absence of action is clearly inappropriate. However, interventions likely to have a significant effect on nutrition can be expensive, and the cost of obtaining relevant information, including through special surveys, is likely to be readily justifiable in terms of assuring effective use of public funds.

3. Governments considering increased commitment to solving nutrition problems will need, early in the process, to assemble some information as a basis for deciding priority problems and possible action. Generally, this assessment will include indicators of nutritional problems by various population groups, possibly with trends in these; indicators for subsequent monitoring will often be the same.

4. Particularly when resources are very constrained, emphasis should be on drawing on existing sources of data. In many countries, growth monitoring programmes accumulate much data which can be tapped. Similarly, birth weights, when available may be compiled. Price monitoring is part of many routine statistical systems, and may be used for monitoring trends in household food security. When resources are very limited, and/or rapid reporting and improved quality are important, a few reporting points (sentinel sites), often in the most vulnerable areas, can be selected. Rapid assessment procedures have a potentially important role in obtaining detailed information on programme delivery and in following-up indications from reporting systems that further investigation is required.

5. Defining information needs first depends on deciding on the problems of concern. An initial distinction is between priority for malnutrition due to underconsumption and infection, for which poverty is a major cause, and diet-related non-communicable chronic diseases (NCCDs). In most developing countries malnutrition/infection remains the major problem. Acute food crises now mainly experienced in Africa should be distinguished from

endemic (chronic) undernutrition - usually the most serious problem - and from micronutrient deficiencies. If not already done, an initial assessment of priority problems, including identifying people most affected is required. This can usually be based on compilation and analysis of existing information.

6. Generally, the most practical approach to nutrition monitoring is to use a minimum number of indicators and to focus on those that lend themselves to regular assessment. The prevalence of underweight status in pre-school children is the most commonly used indicator of undernutrition. Some analysis by criteria such as administrative areas, urban/rural areas, ecological zones and possibly selected socio-economic factors, such as income source, access to services and programmes is useful.

7. Ideally, information should be provided on the number of people who are currently affected by specific types of malnutrition, as well as those who are likely to become malnourished. Additional information about the location of malnourished groups and changes in their nutritional status over time should also be provided. Gathering information on the factors affecting nutritional well-being is also important for cost-effective programme development and monitoring.

8. In the case of **food crises** timely commitment of resources for public works and food distribution is required. Often, the most important early warning indicators are based on forecasts of food availability and price indicators. In drought-prone countries, it is useful to combine data on rainfall and food crop and livestock conditions with other information on food stocks and reserves, market conditions and various socio-economic indicators to predict food crises. Experience from Botswana, India and Indonesia shows that food crises can be successfully resolved with the help of appropriate and timely information.

9. Addressing **endemic undernutrition** needs assessment and monitoring of general nutritional status, usually by anthropometry (birth weight, infant and child; women's weight and height) sometimes mortality rates. While assessing the food security status of specific households may be difficult, monitoring changes in food prices is relatively simple and can be reported in some national early warning systems. These should be based as far as possible on existing survey data, including reanalysis and regular information such as prices and local production changes. Health data may be more directly related to intervention - detecting a specific disease leads to defining action.

10. Monitoring of **infectious diseases** can be conducted at the community level through the health system or the PHC service. Monitoring of breast-feeding practices and their determinants should be undertaken, given their importance for nutrition in early life and their influence on maternal health. Infant feeding and weaning practices should also be assessed.

11. Assessment and monitoring of **caring capacity** needs development. A central issue concerns women's constraints. such as lack of knowledge, time and access to and control over resources, and improving their position. A situation analysis could provide information on aspects such as education, access to services and technology, property and income rights and social security, as well as women's nutritional status.

12. **Micronutrientdeficiencies** - primarily of iodine, iron, and vitamin A - can be assessed and monitored in terms of: dietary availability, clinical signs of deficiencies and biochemical tests. Combinations of surveys and data from the health system can provide information as can deficiency control programme monitoring. For **iodine,** vulnerable areas can be identified from knowledge of the iodine content of foods and soils, often in mountainous areas and flood prone regions where the soil has been leached, which can be mapped. Where salt is iodized, salt supplies should be monitored. Iodine deficiency can be assessed clinically by goitre rates, as well as by more severe manifestations such as cretinism. Such data may be obtained by surveys, or by reports from health centres.

13. **Iron** availability in the diet can be assessed from consumption survey results or from clinical and biochemical assessment, focusing on the most vulnerable groups (women and young children). **Anaemia** resulting from iron deficiency is most commonly assessed. **VitaminA** intakes vary widely with availability of fruits and dark green leafy vegetables and changes in their prices, so that assessments of consumption need to take account of such effects. Clinical assessment, by survey or through clinic reports, primarily uses observation of eye changes based on established diagnostic criteria.

14. Following dietary patterns and disease trends may be useful for monitoring **diet-related chronic diseases.** Trends often assessed at the national level from food balance sheet data relate to total energy intake, percentage of energy from fat and from fat of animal origin. Disease outcomes can be tracked using both morbidity arid mortality data. The latter can be compiled from death registrations, and in many countries improving the coverage of vital registration, including causes of death, would be useful far this and other purposes. Morbidity data are scarcer still; possibly sentinel site reporting from selected hospitals and health centres should be considered while systematic coverage through the health system is built up.

15. Information is also needed on the implementation and cost-effectiveness of programmes aimed at resolving particular nutritional problems or targeted at a particular group or geographic area. Appropriate institutional capacity is central to nutrition monitoring. Many countries are still at the stage of establishing nutrition information systems, generally starting with data on childhood undernutrition. Often, with the use of established data sources and information systems, a more multifaceted system can be developed in accordance with a country's priorities and resources.

16. Global-level assessments of food security have two types of objectives: to advocate the allocation of resources to address hunger and malnutrition; and to alert donors to impending food crises. These are based on various sources, two of which are FAO's food balance sheet procedures, and the Global Information and Early Warning System (GIEWS).

17. The GIEWS monitors continuously the world supply/demand outlook for basic foods in order to assist governments to take action in quickly changing situations, identifies countries and regions where serious food shortages and worsening nutritional conditions are imminent and to assess possible emergency food requirements; and to support the efforts of governments to establish and strengthen national and regional food information and early warning systems.

18. International health monitoring projects are underway through WHO involving a number of countries. This project is being extended to include some developing countries through the Global Cardiovascular Disease Monitoring and Prevention Network (GCMP Network). WHO has also established the global nutritional anthropometry data bank and the Global Data Base for Nutritional Trend Analysis.

INCORPORATING NUTRITION OBJECTIVES INTO DEVELOPMENT POLICIES AND PROGRAMMES

1. The nutritional well-being of a population is an indicator of national development, and as such reflects the combined performance of social, economic, agriculture and health sectors. Nutrition is also an essential input for national development, with a healthy, well-nourished and educated population being the best foundation forpromoting national economic growth. Development aims to provide all people with the social and economic environment necessary for them to lead active, healthy lives. For achieving this objective, development policies and programmes need to be directed toward improving human development, including improving nutritional well-being.

2. Nutrition-focused interventions are needed primarily to compensate for the failure of the development process to reach and benefit vulnerable individuals. Factors influencing nutritional outcomes fall under the responsibility of many sectors and all of these factors must be addressed in order to achieve good nutrition and health outcomes. A policy or programme which deals with one determinant of nutrition may be successful but still not show measurable improvement in nutrition or health if other factors continue to have negative nutritional effects. Consequently, policy-makers concerned with protecting and improving nutritional status must be aware of the potential effects that various development policies and programmes can have, either directly or indirectly, on the poor and the malnourished.

3. A methodology for introducing nutrition considerations into agricultural and rural development projects has been developed by FAO. Its premise is that undernutrition is related to poverty, and is therefore largely dependant on how the benefits of economic and social development are distributed. Since agriculture is the major source of income and livelihood for many of the world's poor, this sector presents the greatest opportunity for socio-economic development and consequently offers the greatest potential for achieving sustained improvements in the nutritional status of the rural poor. By taking a more comprehensive approach to development, planners are able to encourage a more equitable distribution and consumption of food, as well as to increase the purchasing power of the nutritionally deprived, poor and disadvantaged groups of the population.

4. To safeguard the nutritional well-being of the poor, it is essential that macro-economic policies do not discriminate against the food and agriculture sector and rural areas, where often most of the poor live. Unbalanced economic growth, employment and income distribution, compounded by structural adjustment, as well as reduced government expenditure on social services, such as health or subsidized food distribution, may have indirect nutritional effects. A more direct effect would be the decrease in food consumption due to higher food prices resulting either from a rise in producer prices or a removal of food subsidies. Cuts in government health services may also have a direct impact on nutrition. Public investment in health care services, including prenatal care and immunization, pay off significantly in improved health and nutrition. In most cases, the burden of adjustment falls disproportionately on the poor and nutritionally vulnerable.

5. A growth-promoting external economic environment also has an essential role to play in improving the nutritional status of the poor. Policies in this domain encompass improving the international trade environment, alleviating the external debt problem and increasing the flow of external resources. At the national level, rapid population growth is a serious barrier to achieving a sustainable improvement in living standards. Consequently, the implications of population policies on nutrition are significant, particularly in food deficit countries where rapid population growth continues and where urbanization is increasing. Addressing population concerns is fundamental if sustainable improvements in nutrition are to be achieved.

6. Education provides better opportunities and better living conditions which can result in improved health and nutrition. The direct effects of education include improved dietary intakes and health status of children participating in school feeding and school-based health programmes, and the improved eating habits resulting from a better Understanding of food and health. Maternal education and literacy have a significant impact on children's nutritional well-being. Indirectly, education and literacy affect development and income, which, in turn, contribute to improved nutrition. Education and training of people to address food and nutrition concerns at the community and regional level will have a potentially great impact in those areas where such skilled personnel are lacking.

7. Environmental policies can also have a major role in influencing the nutritional status of the poor, especially those who live in environmentally fragile areas. Of particular relevance for nutrition objectives are the policies that can promote sustainable development of agriculture, including forestry and fisheries. Policies should aim at creating an economic environment in which it is more profitable to manage and conserve natural resources rather than to destroy them. The most serious environmental problems that affect the attainment of nutrition objectives in developing countries are desertification and resource degradation of cultivated lands; policy formulation should be based on a thorough understanding of why undesirable land use practices are employed. Policies should induce farmers, especially poor farmers on marginal lands, to adopt improved farming methods which are ecologically sound, socially acceptable and economically beneficial, and should provide sustainable livelihoods for the landless.

8. Intersectoral dialogue based on strong government commitnient and political will is indispensable to encourage actions to improve nutrition that are realistic and complementary, recognizing the benefits and tradeoffs of the short and long-term priorities within the various sectors. At local and regional levels some structure is needed to identify actions to be taken by various sectors that can improve nutrition and to foresee obstacles and better formulate operational objectives for such actions. Time is needed to achieve positive outcomes from development policies, particularly those aimed at beliaviour change and hard-to-reach groups. Feasibility related to financial and resource costs and political costs, as well as institutional and human capacity will determine the appropriateness of various policy interventions.

9. Attention mast be given to targeting the benefits of development preferentially to those mast in need, for example landless labourers, the malnourished and other vulnerable groups. Development activities have different impacts on different population groups, and particular difficulties may arise for some groups when trying to incorporate nutritional objectives into development issues or policies Individual participation and community

involvement in developing policies will ensure better focus and sustainability. Decision-makers need to be encouraged to incorporate nutrition considerations into development programmes and policies and for this data should be presented convincingly to back up the recommendations, made in light of the resources available and the recognition of the trade-offs of adopting alternative policies.