

March 2005



منظمة الأغذية  
والزراعة  
للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
and  
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Organisation  
des  
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Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## COMMITTEE ON WORLD FOOD SECURITY

### Thirty-first Session

Rome, 23-26 May 2005

## ASSESSMENT OF THE WORLD FOOD SECURITY SITUATION

### I. INTRODUCTION

1. Since the overall world food security situation has not changed much since the last CFS, some six months ago, the assessment document this year pays special attention to coping with key shocks to food security arising from conflicts, natural disasters, plant and animal pests and diseases, HIV/AIDS, and possible impacts arising out of climate change. This deviation from previous formats is a response to the call for increasing “the analytical and strategic function of the assessment document”. The convening of the other technical committees such as COAG and CCP this year also means that issues relating to food safety, stocks and trade are more adequately covered in those meetings.

2. As we near the halfway mark to the 2015 goal of reducing hunger, set by the World Food Summit in 1996 and reinforced by the Millennium Development Summit (MDG) in 2000, we are almost certain to miss by a wide margin the target for cutting the number of undernourished people in half (by 2015), if current trends persist. MDG 1 - cutting the proportions of hungry and poor - may, however, be achieved in most regions with the exception of Sub-Saharan Africa.

3. Whilst chronic hunger is a consequence of structural deficiencies, transitory hunger is a result mainly of shocks to food security. The nature and inter-relationships of the main sources of shocks to food security are becoming better understood over time. For each of these risks to food security the necessary precautionary and mitigatory measures are discussed. The importance of safety nets for the prevention of the non-poor and the transitory-poor sinking into chronic poverty and food insecurity has become increasingly evident.

4. Poor people do not possess the means to access and/or produce the food necessary for an active and healthy life. They are also more vulnerable to destitution following extreme events, as they are unable to rebuild assets which constitute the basis of their livelihoods.

5. Addressing the urgency and sustainability of the hunger reduction effort requires a twin-track approach which combines (a) direct interventions to address the immediate needs of the poor and hungry by investing in safety nets, conditional or unconditional cash transfers, food and nutrition programmes with (b) long-term development programmes to enhance the performance of

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the productive sectors (especially to promote agriculture and rural development), create employment and increase the value of the assets held by the poor (physical, human, financial). Establishing coherence between economic and social policies improves their effectiveness. The creation of decent work (more and better jobs, including adequate social protection systems) could go a long way towards hunger and poverty reduction. Reducing inequalities in income and access to assets increases the beneficial impact of economic growth on poverty reduction.

## II. CURRENT WORLD FOOD SECURITY SITUATION

### A. TYPES OF HUNGER

6. FAO estimates that 852 million people worldwide were undernourished in 2000–2002: 815 million in developing countries, 28 million in the countries in transition and 9 million in the industrialized countries (see Table 1). South Asia and Sub-Saharan Africa have disproportionate share of the world’s hungry. The number of undernourished people in developing countries decreased by only 9 million during the decade following the World Food Summit baseline period of 1990–1992. During the second half of the decade, the number of chronically hungry in developing countries increased at a rate of almost 4 million per year, wiping out two thirds of the reduction of 27 million achieved during the previous five years.

**Table 1: Percentage of Population Undernourished in the Developing Regions**

Region	Percentage Undernourished				
	1969-71	1979-81	1990-92	1996-98	2002-02
Sub-Saharan Africa	34	37	35	34	33
Near East and North Africa	25	9	8	10	10
East and South East Asia	43	29	17	13	13
South Asia	38	38	26	23	22
Latin America and the Caribbean	19	13	13	11	10
All developing regions	37	29	20	18	17

Source: SOFI2004

7. The estimates presented above refer to chronic undernourishment. However, shocks due to economic failures and human-induced as well as natural disasters create food shortages that affect, temporarily, all or part of the country population. Although there are no direct estimates of the extent of transitory hunger it is assumed that it may affect around 5% to 10% of the developing world population annually.

8. Structural or chronic food insecurity implies a persistent inability on the part of the household to provision itself adequately with food. This can persist for years if not lifetimes. Chronic food insecurity generally arises through inadequate access to resources, and is therefore structural in character. Chronic and transitory food insecurity may both have different causes and require different responses or programme solutions. Often governments are faced with the task of preventing a transitory problem from becoming permanent, as households are unable to replenish their resources.

9. In addition, even in the absence of chronic and transitory hunger the population may suffer from the lack of essential micronutrients. This is often referred to as hidden hunger. As many as a third of the world’s people do not meet their physical and intellectual potential because of vitamin and mineral deficiencies, according to a report released by UNICEF and The

Micronutrient Initiative.<sup>1</sup> Although this issue is beyond the scope of this document, its importance should not be underestimated.

## **B. HUNGER HOTSPOTS<sup>2</sup>**

10. As of March 2005, the number of countries facing serious food shortages throughout the world stood at 36, with 23 in Africa, 7 in Asia/Near East, 5 in Latin America and 1 in Europe. The causes are varied but civil strife and adverse weather predominate. The outbreak of desert locusts in western Africa and the recent tsunami disaster in South and South East Asia have also had serious food security consequences.

11. The earthquake and tsunamis of 26 December 2004 that hit the coastal areas of 12 countries around the Indian Ocean have reportedly killed over 285,000 people, negatively affected the living standards and livelihoods of an estimated five million people and produced extensive damage to infrastructure. The majority of the people affected had agriculture- and fisheries-based livelihoods or were employed in associated enterprises. Fisheries were hit the worst, but crops and livestock also suffered substantial losses.<sup>3</sup>

12. Africa has by far the highest number and proportion of countries facing food emergencies. In eastern Africa, the food situation in Eritrea is of particular concern. Successive years of inadequate rains have seriously undermined crop and livestock production. A below average harvest is also estimated for Sudan, due to conflict and drought, and Kenya's poor second season maize crop will exacerbate food shortages in parts of the country.

13. In western Africa, the food situation remains critical in Mauritania, while in Côte d'Ivoire insecurity continues to disrupt agricultural and marketing activities. Among the eastern African countries, those that have suffered the most devastating and persistent crises are those that have been stricken by conflict. In many of these countries, the HIV/AIDS pandemic is also a major aggravating factor.

14. In east Africa alone, the food security status of over 13 million people was threatened by a combination of erratic rains and ongoing conflicts. The balance of causes of food emergencies has also shifted over time. Since 1992, the proportion of emergencies that can be attributed primarily to human causes, such as conflict or economic failures, has more than doubled, rising from around 15 percent to more than 35 percent.

15. In central America, first and second season maize and bean crops have been damaged by dry weather conditions and food assistance is being provided to the affected families. In Guyana, torrential rains have caused severe flooding and river overflow. Food assistance continues to be provided in Haiti to families affected by recent floods and droughts.

16. The signing in January of a peace accord between the government of Sudan and the southern Sudan People's Liberation Movement/Army, has increased the rates of population return in southern Sudan. Up to 500,000 people are expected to return to various parts of southern Sudan during 2005, which will be a challenge for all as the region lacks the necessary infrastructure to cope with large numbers of returnees.

17. In Afghanistan, a significant number of households remain vulnerable to food insecurity, following years of conflict and drought, which have resulted in war-disabilities, loss of family members, displacement, substantial livestock losses, destruction of productive assets and debt accumulation. Therefore, timely, appropriate and effective food and non-food interventions to assist the poorest of the population in helping them rebuild an asset base for their livelihoods is

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<sup>1</sup> <http://www.micronutrient.org/reports/default.asp>

<sup>2</sup> Visit <http://www.fao.org/docrep/007/J4273e/J4273e02.htm> for updates.

<sup>3</sup> Visit <http://www.fao.org/tsunami> for updates.

essential. A significant number of vulnerable households are largely food insecure and will remain dependent on humanitarian assistance in 2005.

18. Despite the apparent recovery in Iraq's agricultural production, the end of the major military operations, and the lifting of the economic sanctions, millions of Iraqis have no access to food other than through the Public Distribution System (PDS). The effects of 24 years of conflict and economic sanctions compounded with three consecutive years of drought have seriously eroded the purchasing power of the population.

19. With rising poverty and unemployment, the food security situation in Palestine has deteriorated considerably over the past three years, with four out of ten being food insecure. Food insecurity affects 1.4 million people (40 percent of the population) and is a constant cause of worry for an additional 1.1 million people (30 percent) who are under threat of becoming food insecure should current conditions persist. Food is generally available, but access is limited due to physical (curfews, closures) and economic (high unemployment, depletion of resources, exhaustion of coping strategies and strained social support networks) circumstances.

### **III. SPECIAL ISSUE: COPING WITH SHOCKS TO FOOD SECURITY**

20. Hunger hotspots are increasingly a manifestation of the consequences of conflict or economic failures. Natural disasters also undermine people's food security in various regions of the world. In many cases natural and human-induced factors reinforce each other, leading to complex emergencies and protracted crises. Pests and diseases add to the complexity of providing sufficient and safe food to all populations and test the ability of countries and the international community to cope with crisis. In the long run, all countries are likely to be affected by the climate changes as a result of the global warming phenomenon. The nature and severity of these shocks are being better understood over time, and some essential policy imperatives are emerging.

21. Responding to increasingly complex risks to food security requires more and better targeted investments, programmes, innovations and policy actions that are driven by a better understanding of the dynamics of risks and factors that affect people's access to food and the links to nutrition. A significant problem for agencies and governments alike is whether to respond to perceived local food insecurity as a structural or transitory phenomenon. A response to structural insecurity should attempt to facilitate the provision of resources through which households can eventually provide for their own food security in a sustainable fashion. Addressing transitory food insecurity, on the other hand, implies greater emphasis on making food available at affordable prices and having the appropriate safety nets in place well ahead of the crisis. The situation becomes more obscure when the source of the "temporary" insecurity becomes persistent and difficult to anticipate: for example, as a result of persistent drought or civil unrest.

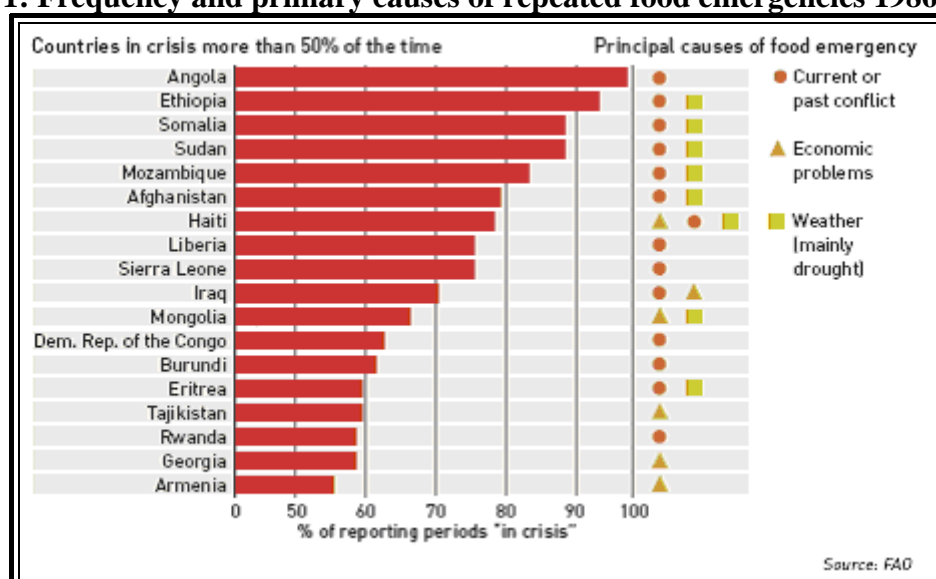
22. It is becoming increasingly evident that the twin-track approach is essential if we are to sufficiently address new and old risks to food security through proactive and progressive policies and investments. In the absence of both rural and agricultural productivity enhancement measures, complemented by innovative safety nets that ensure minimum access to food, the reduction in the number of hungry will not be achieved.

#### **A. CONFLICTS**

23. Conflict is now the most common cause of food insecurity. The number and scale of conflict-related, food security emergencies is increasing, and the role of human-induced disaster in escalating a natural crisis, such as drought, to a food security emergency has grown in importance over the last decade. The proportion of food emergencies that can be considered human-made has increased over time. Conflict and economic problems were cited as the main cause of more than 35 percent of food emergencies between 1992 and 2003, compared to around

15 percent in the period from 1986 to 1991. More than half of the countries where under-nourishment is most prevalent (more than 35%) experienced conflict during the 1990s.

**Figure 1: Frequency and primary causes of repeated food emergencies 1986-2004**



24. Civil wars in many developing countries today, particularly in sub-Saharan Africa, pose the main threat to long-term food security and economic progress. Repeated food emergencies are concentrated in sub-Saharan Africa, where the majority of the affected countries (61 percent) are hosts to civil wars.

25. The effect of conflict on agriculture depends on the nature of the conflict itself. If it is confined to a specific geographic region, then agricultural losses are to some extent minimized. This was true for developing countries where conflict was localized enough so that the decline in production (and exports) could be contained. The conflict afflicted area, by contrast, suffers serious economic decline. Production ceases almost immediately but the loss in output may be hampered in the long-term if economic structures are specifically targeted with the intention of reducing the economic capabilities of the opponent. Moreover, in order to secure food, farmers and agricultural labourers are forced to move away from the fighting.

### *Relief and Development*

26. Conflict is disruptive and has strong implications for rural and agricultural development and growth. The short term emergency responses to address the needs of people suffering the consequences of conflict need to be located in a broader long term perspective of food policy framework aimed at improving people's and food system resilience.

27. There is increasing recognition that responses to chronic and protracted crisis must go beyond the repeated mobilization of emergency support when humanitarian conditions deteriorate. Relief and rehabilitation efforts are far more effective if they build on the foundations of resilience rather than relying exclusively on injections of external inputs, technology and institutions<sup>4</sup>. A growing body of experience confirms the importance of strengthening the resilience of societies and food systems before crises erupt and of factoring resilience into responses.

28. Breaking the links between hunger and conflict must become a goal of food, agricultural, environmental, and economic development policy. For the international community this will

<sup>4</sup> See SOFI 2004, pp. 26-27.

entail paying closer attention to relief of food insecurity that can lead to conflict; delivery of development aid in ways that prevent competition leading to conflict; distribution of essential food aid in ways that do not prolong conflict; and special attention to reconstruction assistance.

### *Prevention*

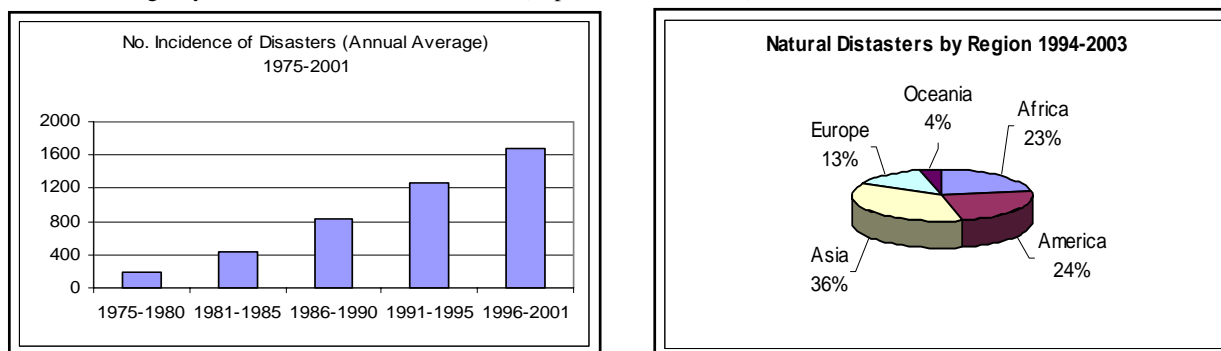
29. It is essential to include conflict prevention in food security and development efforts, and to link food security and economic development to relief. Savings from conflict avoidance should be calculated as “returns” to aid. Humanitarian assistance must include agricultural and rural development components that lead to secure livelihoods and build sustainable social and agricultural systems, such as efficient water management, sustainable genetic diversity, and community participation.

## **B. NATURAL DISASTERS**

30. Natural disasters can have significant economic and food security impacts, especially on the poorest households. In the last three decades, there has been a clear increase in the number of natural hazard events, the size of affected populations and the extent of economic losses. As a result of increasingly effective preventative measures, while the number of disasters has more than tripled since the 1970s, the reported death toll has almost halved<sup>5</sup>. The incidence of hazards demonstrates considerable geographic distribution (see Figure 2). During the period 1994-2003, Asia was disproportionately affected by natural disasters. Approximately half of the 650 natural catastrophes recorded in 2004 were windstorms and severe weather events whilst 80 were due to geological hazards (70 damaging earthquakes and 10 volcanic eruptions)<sup>6</sup>.

**Figure 2: Number of natural disasters**

Source: Emergency Disasters Data Base, EM-DAT. (<http://www.em-dat.net>)



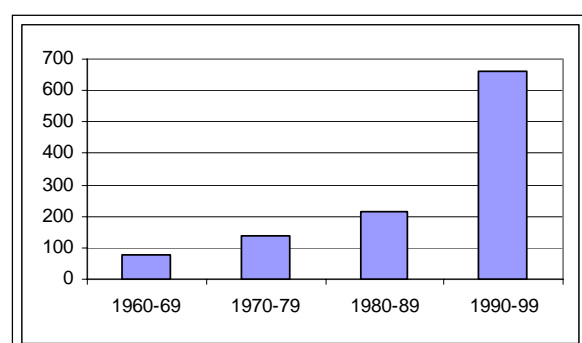
31. Around 75 percent of the world’s population lives in areas affected at least once by earthquake, tropical cyclone, flood or drought between 1980 and 2000. Billions of people in more than 100 countries are periodically exposed to at least one event of earthquake, tropical cyclone, flood or drought. As a result of disasters triggered by these natural hazards, more than 184 deaths per day are recorded in different parts of the world, 11 percent of the people exposed to natural hazards live in countries classified as having low human development, and they account for more than 53 percent of total recorded deaths<sup>7</sup>. For each hazard type, disaster risk is considerably lower in high-income countries than in medium- and low-income countries.

<sup>5</sup> Living with Risk A global review of disaster reduction initiatives. [www.unisdr.org](http://www.unisdr.org)

<sup>6</sup> [www.munichre.com](http://www.munichre.com)

<sup>7</sup> A Global Report Reducing Disaster Risk A Challenge for Development. [www.undp.org/bcpr](http://www.undp.org/bcpr)

**Figure 3: Economic losses due to natural disasters 1960-2000 (million US\$)**



Source: Emergency Disasters Data Base, EM-DAT (<http://www.em-dat.net>)

32. Direct economic losses increased five times in the 1990s (See figure 3) and are mostly concentrated in the developed countries. Underlying these economic figures is not only the destruction of productive assets and vital infrastructure and the loss of livelihood systems but also their implication to economic development and poverty aggravation. When disasters occur, poor households suffer greater relative losses in terms of physical and social assets, resulting in deepening their poverty further. Such losses of assets can trap households in chronic poverty and food insecurity.

33. The effects of natural disasters need to be examined within a wider context of economic development, poverty and food insecurity, and the analysis should consider the interplay with other factors, and in particular in relation to the institutional capacities that determine how people, communities, and countries are affected, face risks and cope. Impact assessments of natural disasters on food security should be performed at different levels: from global to national, sub-national, community and household levels; and these assessments should provide information on the effects and the causes of natural disasters and ways to share responsibilities and distribute risks. Vulnerability assessments at the community level are one tool for identifying how formal and informal institutions and practices could support risk management activities. For responses to be adequate, crucial investments in information are called for.

34. An important development in disaster management approaches over the past decade has been the recognition of their cyclical nature. Although the response phase captures most of the attention, much of the hard work on disaster risk management is carried out before disasters occur, in the form of risk assessment, prevention, mitigation, and establishing early warning systems. After the crisis has passed, the emphasis is on rehabilitation, reconstruction, and the commencement of a new cycle of assessment, incorporating lessons derived from the previous cycle.

#### *Twin-track approach to managing natural disasters*

35. The twin-track approach can be used as a framework for reducing vulnerability to food insecurity in the face of natural disaster threats. The approach builds on the premise that sustainable reduction in hunger requires two sets of interventions: (a) sustainable agricultural and rural development (example of conservation agriculture on hillsides in Honduras) aimed at supporting and enhancing the livelihoods of the poorest and most vulnerable groups and (b) targeted interventions and programmes to enhance immediate and direct access to food and nutrition by the most needy. The first track addresses mainly the structural, longer term factors causing vulnerability and covers most of the options for reducing vulnerability *ex ante* through risk reduction and risk management enhancement. The second track mainly addresses the most pressing food insecurity needs and the short term factors and includes the *ex post* policy options for coping with risks.

#### *Financial incentives and livelihoods*

36. It is also important to recognize the role of financial incentives and policy instruments in reducing food insecurity caused by natural disasters. These instruments include: schemes for crop insurance; microfinance for re-stocking and re-planting; and, at the national level, structuring development loans or grants in such a way as to encourage governments and communities to build

disaster-reduction and risk mitigation measures into their disaster response programmes and national development plans.

37. Strategies to reduce vulnerability to drought and other disasters should be based on a sound understanding of rural livelihoods and coping strategies, since the impact of a disaster is determined by the underlying vulnerability to such threats. Rural households depend for a large portion of their consumption on income and transfers from the non-farm sector. However, the most vulnerable people in rural areas are those who rely most heavily on agriculture for their livelihood, by producing for themselves and working for others. These livelihood strategies fail when there are frequent natural disasters, leading to heightened vulnerability. In drought-prone areas, consideration could be given to research and extension on the production, processing and storage of drought resilient grains such as sorghum and millet.

### C. PEST AND DISEASES

38. The spread of emergent diseases and invasive species has increased dramatically in recent years. At the same time, numerous developments - such as the rapidly increasing trans-boundary movements of goods and people, trade liberalization, increasing concerns about food safety and the environment - have heightened the need for international cooperation in controlling and managing trans-boundary pests and diseases.

39. Certain basic conditions affect the likelihood of trans-boundary pests and diseases establishing and spreading in regions or countries. These include: climate; geographical isolation; crops and livestock produced; production systems used; hosts and vectors widespread in or native to the country; and control methods used as part of routine agricultural management.

40. Recent food safety issues related to diseases such as bovine spongiform encephalopathy (BSE) and avian flu have become a serious concern for consumers, farmers, food processors, food retailers and governments alike. Furthermore, food contamination with non-authorized food additives, chemicals such as polycyclic aromatic hydrocarbons (PAHs) and acrylamide, microbiological pathogens (*Salmonella*, *E. coli*,) and mycotoxins, among others, have created worldwide concern regarding the safety of food supplies. To better address the existing and emerging challenges, FAO is recommending, as well as applying, a comprehensive approach to food safety and quality issues that shares the responsibility for providing safe food among all players in the food and agricultural sector, from food producers and processors to retailers and consumer households. This is the "**food chain approach**", which was discussed at the Nineteenth Session of the Committee on Agriculture<sup>8</sup>. Such an approach is also strengthened by the development of Good Agricultural Practices (GAP) that can help farmers minimize or remove threats to food safety at source.

41. FAO recommends complementing regulation and control of end products, currently the main focus of many food safety programmes, with preventive measures to control the introduction of hazards. This requires the adoption of good practices - in primary production, post-harvest, processing and handling - that reduce the risk of microbiological and chemical contamination. In-plant controls of food processing operations should be based on Good Hygienic Practices (GHP), Good Manufacturing Practices (GMP) and the Hazard Analysis Critical Control Point (HACCP) system, which identifies and then monitors the most vulnerable points in a food production system.

### D. HIV/AIDS

42. HIV/AIDS has compounded household food insecurity by increasing dependency ratios, orphaning millions of children, dramatically raising medical expenses, rapidly depleting assets, and diverting crucial resources from sustainable investments in household food security.

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<sup>8</sup> Visit <http://www.fao.org/DOCREP/MEETING/006/Y8350E.HTM> to refer to the full document.

Moreover HIV/AIDS has reduced the ability of nations to prevent and mitigate food emergencies by taking the lives of crucial professionals in social services and government. And the pandemic is reinforced by and worsened by other crises - climatic stresses, conflicts, poverty, and resource degradation.

43. There is evidence that HIV/AIDS has led to decreased agricultural production at the household level. HIV/AIDS-affected households suffer from loss of income, loss of assets that must be sold to cover the costs of illness, and the loss of skills as the household members with knowledge of farming and wild products succumb to the disease. A decline in the available household labour due to AIDS mortality and morbidity has a significant impact on household agricultural productivity.

44. The epidemic can also lead to a vicious cycle of malnutrition and HIV. The disease, combined with food and nutrition insecurity can lead to severe malnutrition and deepened poverty, and food insecurity may drive people to livelihood strategies that increase the risk of contracting HIV/AIDS. Adequate income generation, still mostly linked to agriculture, and access to sufficient and healthy food and nutrition are thus essential components in fighting HIV/AIDS and helping victims to live healthier, longer and more productive lives.

45. HIV infection, compounded by inadequate dietary intake, leads to or worsens malnutrition. Creating availability of and access to food and proper nutrition for those at risk of infection or already affected are therefore critical policy actions needed to both reduce the prevalence and slow the onset of the disease. Agricultural policy in Sub-Saharan Africa must be designed to meet the challenges posed by HIV/AIDS in synergy with other policies, in particular labour, health, education and nutrition policies. By enhancing agricultural productivity and food and nutrition security, agricultural policy can make a significant contribution to slowing and mitigating the spread of HIV/AIDS in the region.

46. Agriculture technologies need to help poor households adapt to labour constraints imposed by HIV/AIDS while raising productivity levels, and diversified production and enriched foods can improve the nutrition of affected households. Making agriculture work for those at risk and affected by HIV/AIDS will be crucial for halting and reversing the downward spiral of increasing hunger and malnutrition in the region.

47. In sum, food and nutrition security are of fundamental importance for prevention, care and support, treatment and impact mitigation of HIV/AIDS affected households. With better understanding of the interactions between HIV/AIDS and food security, the responses can be improved through policies and programmes geared to strengthening existing capacities to respond and supplementing them with appropriate safety nets for those who cannot cope otherwise.

## **E. CLIMATE CHANGE**

48. The rate of climate change expected over the next 100 years is unprecedented in human history. Throughout geologic time the average global temperature has usually varied by 5°C over intervals of millions of years. Now scientists believe that the temperature of the Earth's surface – which has already risen by 0.6°C since the late 1800s – is likely to rise by another 1.4 to 5.8°C during the course of the 21st century.

49. Despite the high degree of uncertainty, some consistent conclusions emerge from the various simulations of future climate change impacts on agricultural production. Global agriculture will face many challenges over the coming decades due to degrading soils and water resources, which may be worsened by climate change. This will place enormous strains on achieving food security for growing populations.

### *Agricultural production and food security: winners and losers*

50. Studies suggest that global agricultural production could be maintained relative to expected baseline levels over the next 100 years with moderate climate change (below a 2.5°C

warming). However, regional effects would vary widely, and some countries may experience reduced output even if they take measures to adapt. This conclusion takes into account the beneficial effects of CO<sub>2</sub> fertilization but not other possible effects of climate change, including changes in agricultural pests and soils.

51. Low-income developing countries are more vulnerable to reductions in agricultural production because they have: (i) a high percent of GDP from agriculture; (ii) strong linkages between agricultural production and incomes; (iii) high dependence on native diversity; (iv) limited capacity to adapt or respond to changes. Therefore, low income developing countries are more likely to experience a significant increase in food insecurity and hunger as a consequence of climate change, which may affect: the physical availability of food production, by shifts in temperature and rainfall; people's access to food, by lowering incomes from coastal fishing because of rising sea levels; or a country's foreign exchange earnings by the destruction of its export crops caused by the rising frequency and intensity of tropical cyclones.

52. Some groups are particularly vulnerable to climate change: low-income groups in drought-prone areas with poor infrastructure and market distribution systems; low to medium-income groups in flood-prone areas; farmers who may have their land damaged or submerged by a rise in sea-level; and fishers who may lose their catch to shifted water currents or through flooded spawning areas.

#### *Water*

53. Water quality will also be affected by rising sea levels. More salty water will find its way into coastal aquifers and estuaries, making freshwater brackish and eventually unsafe. This will have severe impacts in some areas, particularly low-lying islands and atolls that rely on underground water for their fresh-water supplies. Seawater intrusion will also affect the surface freshwater supplies, weather patterns and storms over the oceans and coastal regions. With one third of the world's population living in countries that already lack enough water, and with populations and demand set to grow dramatically, freshwater supplies may be one of our greatest vulnerabilities in a climate change world.

#### *Creating adaptive capacity*

54. Food insecurity of the poor is likely to be particularly aggravated by climate change as the likelihood of extreme events increases. Investments in adaptive capacity of developing countries, and particularly the most vulnerable groups, to current climate risks are likely to produce high rates of return by avoiding future damages. The costs of increased food insecurity are a critical consideration in setting climate change policy.

55. The insurance industry can contribute by seeking creative solutions for spreading risks, hence keeping insurance coverage available and affordable. Developing countries will need more extensive access to insurance. Technology transfer and the widespread introduction of micro-financing schemes and development banking could also help ensure that the most vulnerable are protected.

56. Coordinated strategies for land use, landscape values and water supplies can simultaneously promote human needs and conservation goals. Similarly, integrated coastal fisheries management could reduce the pressure on some coastal fisheries. Efforts to enhance sustainable agriculture and rural development could make biodiversity more resilient. Conserving wood-fuel, for example by introducing efficient stoves and biogas and other forms of renewable energy, could reduce pressures on forests and thus protect biodiversity.

57. In temperate regions, initiatives by individual farmers to adapt should suffice to prevent losses to both crops and livestock and could even lead to gains. In the tropics, the efforts of farmers will prevent some losses but not all. Farmers can adapt by making appropriate changes in planting dates, cultivar selection, and pest and disease control strategies. More expensive and organized efforts – such as changing land-use allocations and investing in irrigation infrastructure

– can further prevent climate-induced losses. Monitoring climate and the projected changes would provide greater lead-time for preparing solutions.

## IV. POLICY IMPLICATIONS AND CONCLUSIONS

### A. SHOCKS AND SAFETY NETS

58. The key sources of shocks to food security and the implications for preparedness, responses and mitigation efforts have been summarized in the preceding section. In sum, a natural disaster or other shock that destroys or undermines assets and thereby knocks a household below the poverty level could have permanent effects on food security. In the absence of relief or intervention, a household in this situation would be expected to face further post-shock deterioration in their position as they fall back to a low-level, poverty-trap equilibrium. The implications for the timing, targeting and duration of relief assistance are potentially large. An asset-based approach gives priority to efforts to rectify the mechanisms of financial exclusion that underlie poverty traps.

59. Shocks can have persistent effects only in the presence of poverty traps. Nutrition and health are especially critical for the poor who own little more than their own labour power. The irreversibility of some nutrition-related health problems – for example, blindness related to vitamin A deficiency, brain damage due to iodine deficiency, physical stunting from sustained protein energy malnutrition – makes the insurance of food security especially important. Thus, safety nets with respect to food, nutrition and health are fundamental to blocking vulnerable people's descent into chronic poverty and food insecurity in the wake of shocks, whether specific to the family or general to a region.

60. Safety nets are essential for blocking pathways into chronic poverty and food insecurity for the non-poor and transitory poor. Well designed and implemented pro-rural-poor programmes can enable people to escape from chronic poverty. In order to be effective, agriculture and rural development interventions must target the chronically poor, and safety nets must protect the transitorily poor. This implies a central role for effective assessment and targeting in order that the appropriate policies are applied to the right sub-populations.

#### *Poverty and Relief Traps*

61. The longer individuals remain in poverty, the more vulnerable they become to shocks. As the frequency and magnitude of the various types of shocks increase, official development assistance is likely to be channelled in the form of relief efforts. This diverts scarce resources from addressing the structural causes of chronic poverty. Without effective safety nets, a vicious cycle thereby ensues, with individuals falling into poverty traps. Moreover, as the population ensnared in poverty traps grows, international assistance for long-term development in non-emergency areas such as education, health, agriculture and infrastructure initiatives tends to decline. Reduced investments in productivity enhancement and long term development increases the likelihood of future emergencies, thus creating a vicious circle in which donors increasingly finance mainly relief operations accompanied only occasionally by under-funded structural investments.<sup>9</sup> It is necessary to urgently rescue global development assistance flows and create a virtuous cycle whereby adequate investments in long term development enable many to move out of poverty and even be resilient to temporary shocks to their food security.

#### *Twin-track approach: combining safety nets with long-term development programmes*

62. In addition to addressing shocks through safety net programmes, complementary programmes are essential to lift people who fall below critical thresholds and to help them

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<sup>9</sup> See C.B. Barrett and D.G. Maxwell (2005), *Edging Towards a Recipient-Oriented Food Aid System*, Chapter 6 in forthcoming book on *Food Aid After Fifty Years: Recasting its Role*.

overcome chronic poverty and food insecurity. Familiar and proven examples include land reform, targeted school feeding programmes, education and skills training initiatives, targeted subsidized microfinance or agricultural input subsidization projects.

63. Investments in rural development, health, education and research and development are essential if dramatic reductions in hunger and food insecurity are to be achieved. Given that most of the poor are in rural areas, hunger reduction requires development and dissemination of improved technology, better infrastructure, crop production and yield increases given that most of the poor are in rural areas. Enhanced agricultural productivity for the long term food security of the majority of the world's hungry is critical, due to the links to jobs, income generation, price levels, and nutritional well-being. There is thus a clear need to renew and significantly raise commitments to agricultural technology improvements and natural resource sustainability through augmented investments in agricultural research and development that targets the needs of the vulnerable and impoverished households. The costs, though sizeable, would be far less than the benefits.

#### *Focus policies and investments on rural areas and agriculture*

64. The fight to attain MDG 1 will be won or lost in the rural areas of developing countries, home to 75 percent of the poor and hungry, who derive their livelihoods from agriculture and related activities. Enhancing employment and income growth in the rural areas entails scaling up actions to improve the productivity of smallholder agriculture, promoting sustainable use of natural resources, improving rural infrastructure, research and communications, facilitating the functioning of markets and enhancing rural institutions. Productivity induced agricultural growth has a wider impact on rural areas through the strengthening of off-farm activities and rural employment and wages.

65. The improvement of global food and nutrition security will be contingent on the attainment of several other MDGs. In particular the economic, health, social, environmental, and sanitary situations, in addition to the economic and physical performance of the agricultural and rural sector will determine the attainment of nutrition security at the level of the household. Nevertheless, the most important contribution is expected to come from improvements in agricultural productivity aimed at small farmers. Also it must be recognized that reducing poverty through agricultural and rural development and improving food security and nutrition will play a fundamental role also in achieving several other MDGs.

## **V. VIEWS AND RECOMMENDATIONS OF CFS**

66. In the light of the above the CFS may wish to:
1. call on FAO and its partner agencies to assist governments to put in place the appropriate safety nets to ensure that their citizens have access to adequate food when affected by shocks to food security;
  2. call on states and their partners to incorporate and integrate disaster preparedness and mitigation strategies into national development plans (including in PRSPs);
  3. call on governments and development partners to adopt and implement the twin-track approach, which combines the promotion of broad-based, sustainable agricultural growth and rural development, with targeted programmes to ensure that hungry people who have neither the capacity to produce their own food nor the means to buy it can have access to adequate supplies; and
  4. call for increased allocations and investments in the agriculture and rural sector.