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THIRTIETH FAO REGIONAL CONFERENCE FOR ASIA AND THE PACIFIC

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Agenda item 9

FAO'S STRATEGY FOR AND APPROACHES TO DISASTER PREPAREDNESS, RESPONSE AND MITIGATION IN THE REGION

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I. Introduction

1. Agriculture remains the most important pillar of development in many countries of the Asia-Pacific region, but the sector faces a number of severe challenges. Among them: rising demand for food and agricultural products; climate change; ecological degradation; increasing demand for food and non-food crops as feedstock for bioenergy; global financial crises; and natural and human-induced disasters.
2. The Asia-Pacific region is prone to a wide range of natural disasters that threaten farm and rural livelihoods, such as droughts and floods, highly pathogenic avian influenza, cyclones, tsunamis and earthquakes. Episodes of natural and human-induced shocks to food and nutrition security will continue to occur; therefore, reducing the risk of disasters and managing risk will remain a significant and strategic challenge for the region. FAO is responding to this challenge with the launching of a new corporate strategy that is based on the disaster risk management (DRM) conceptual framework. DRM is the systematic process of using administrative directives, organizations and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. FAO's DRM approach incorporates disaster risk reduction (DRR), which is the concept and practice of reducing disaster risk through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.¹
3. This information note presents : (1) an overview of major disaster events and FAO interventions in the region; (2) the link between natural disasters, agriculture and food security; (3) current FAO assistance and interventions; (4) Strategic Objective I (SO I), which is the new FAO corporate strategy based on the DRM conceptual framework; and (5) summary conclusions and recommendations.

II. Overview of major disaster events and FAO interventions in Asia and the Pacific

4. Many major natural and human-induced disasters occur in Asia and the Pacific. The severity and frequency of hydro-meteorological events, such as tropical cyclones, typhoons, torrential rains, floods and landslides, throughout the Asia-Pacific region have increased. Forest and plantation fires as well as plant pests and animal diseases pose additional significant threats to the food and agriculture sectors. Political and economic risks and complex and protracted crises are also present in the region. However, the scope of this information note is focused on FAO risk reduction, emergency response and rehabilitation interventions related to natural disasters or incidence of plant pests and/or animal diseases in the region.
5. Recent natural disasters in the region, such as the series of tropical storms that swept through Cambodia, Laos, the Philippines and Viet Nam, earthquakes in Indonesia (West Java and West Sumatra) and floods in India and Nepal highlight the growing need to improve disaster preparedness, early warning and other risk reduction strategies. In recent years, the Pacific islands have suffered from severe storms, tsunamis and cyclones, causing loss of life and livelihoods in

¹ See Disaster Risk Management Systems Analysis, FAO (2008). This document provides a set of tools to assess existing structures and capacities of national, district and local institutions with responsibilities for DRM in order to improve the effectiveness of DRM systems and the integration of DRM concerns into development planning, with particular reference to disaster-prone areas and vulnerable sectors and population groups.

the agriculture sector, displacing populations, and disrupting the availability and amount of local food supplies. A summary of major disaster events in the region follows.

6. The Indian Ocean tsunami of 26 December 2004 had a catastrophic impact on rural coastal communities, many of which were already poor, vulnerable and with few livelihood options, highly dependent on severely depleted and over-fished natural resource bases and on badly degraded coastal ecosystems. FAO provided coordinated technical support to affected farmers and fishers in order to rebuild their livelihoods. Support included boat building and repairs, supply of fishing gear, cash-for-work programmes for land reclamation, provision of seeds, fertilizers and small farm machinery, and establishment of small-scale fish processing activities. Helping communities become self-reliant again, while pursuing sustainable management and protection of natural resources and the environment, was the primary focus of the assistance.
7. In Pakistan on 8 October 2005, an earthquake resulted in great loss of human life and devastated the livelihoods of many rural communities in North West Frontier Province and Pakistan Administered Kashmir. The total loss, including direct damages and indirect losses to the farming system, was estimated at 24.5 billion Pak Rupees (US\$409 million). FAO provided assistance in the initial assessment of earthquake damage to the agricultural sector in these regions. FAO also completed an analysis of livestock production systems to assist the Ministry of Food, Agriculture and Livestock line departments and the Earthquake Reconstruction and Rehabilitation Authority to develop programmes to restore livestock production. FAO has also recently worked with municipal governments in several regions in Pakistan to complete hazard baselines and contingency plans, using the FAO-ILO Livelihoods Assessment Toolkit methodology.
8. On 27 May 2006, an earthquake measuring 6.3 on the Richter scale hit Yogyakarta and Central Java Provinces. The most affected districts were Bantul of Yogyakarta and Klaten of Central Java, although other districts of Central Java were also affected. Approximately 6 000 people were reported dead and about 37 000 were injured. A total of 235 000 houses in Yogyakarta were damaged while nearly 26 000 houses of Klaten District in Central Java were completely destroyed. In addition, Merapi Mountain (2 968 m), the most active volcano in Indonesia, erupted in May 2006, causing enormous damage to the land and enclaves of the 30 000 people who live around the top and on the slopes of the volcano. FAO assisted the most affected vulnerable farming communities directly through the provision of agriculture inputs and machinery, and supported the government in the development of a medium-term livelihood recovery strategy to ensure that the farming-related livelihoods of all those affected were rehabilitated and “built back better” – that they are more sustainable and have greater resilience in the face of future potential disasters.
9. In 2006 in a span of ten weeks, from 25 September to 1 December, the Philippines was hit by three extremely destructive typhoons. The typhoon Reming brought 466 mm of rainfall, the highest in 40 years, and damaged 18 786 hectares of planted rice at varying stages of growth causing total production losses to agriculture of about Pesos 2.94 billion (US\$63.1 million), based on the Summary of Damages for the Agriculture (2006) prepared by the Management Information Division of the Department of Agriculture. The government requested FAO’s assistance in developing more preventive, pro-active risk management in the Bicol Region, in particular to improve the early warning system, build the capacity of local government to implement community-based DRM plans and introduce improved cropping systems, fishing practices and water management measures for climate risk mitigation. FAO supported the typhoon-affected farmers with agricultural inputs and technical assistance.
10. In 2007 two monsoon floods (July and September) and Cyclone Sidr (November) led to significant losses in the aman and aus rice crops and panic in the rice market in Bangladesh. Cyclone Aila struck in 2009. FAO implemented agricultural rehabilitation programmes in the aftermath of the cyclones and supported about 1.48 million households by providing farmers with

seeds, fertilizer, farm machinery and improved seed storage facilities, and support in repairing small irrigation structures. FAO also provided improved fishing boats, fishing nets and aquaculture packages, as well as animal feed and vaccines and improved animal sheds through Farmer Field Schools.

11. Cyclone Nargis struck Myanmar on 2 and 3 May 2008 and left almost 140 000 people dead or missing in the Ayeyarwady Delta, most of whom were rice farmers and capture fishers. An estimated 2.4 million people lost, partially or completely, their homes, livelihoods and community infrastructures. Damage was most severe in the Ayeyarwady Delta region, also known as the country's rice bowl, where the cyclone devastated most of the fertile areas, destroyed and damaged flood protection embankments and their "polder" systems and paddy fields, and destroyed much of the livestock population. It was estimated that field crop losses ranged from US\$130.0 million to US\$230.1 million, which FAO translated into a damage-and-loss range of US\$464.7 million to US\$564.8 million. FAO assisted the cyclone-affected farmers and fishers by providing agricultural, livestock, fisheries and forestry inputs. FAO also coordinated the "agriculture cluster" in close collaboration with the government line ministries and chaired/co-chaired technical sub-working groups in agriculture, livestock, fisheries and forestry. FAO is currently supporting the Government of Myanmar on the medium-term recovery of agriculture livelihoods of the cyclone-affected farming households in the Delta.

12. In May 2008, Sichuan province of China was hit by an earthquake with a magnitude of 7.9, which killed at least 68 000 people. Damage caused by the earthquake to rural production was estimated at close to US\$50 billion, and the immediate and medium-term needs of the affected population were considerable: hundreds of thousands of hectares of farmland are dry due to heavily damaged or destroyed irrigation systems, and 330 000 hectares of forestry were ruined; 32 million farm animals perished; and 27 million square metres of animal shelter collapsed.

13. In August 2008 tropical storm Kammuri caused severe damage in North Viet Nam, and in November 2008 further heavy rain and flooding affected 20 provinces in North Viet Nam, resulting in 82 deaths, collapsed houses, damage to almost 209 000 hectares of rice fields and short-term crops, and over 26 000 hectares of aquaculture, as well as irrigation and other infrastructures. FAO provided emergency assistance to the poorest farmers by providing rice seed for immediate recovery of their rice production.

14. Tropical storm Kammuri also struck the Lao People's Democratic Republic (PDR), and was the country's most severe flood in about 100 years. It brought heavy rainfall and rising waters to the Mekong Basin, affecting over 200 000 people. The situation was compounded by the saturation of catchment areas during the monsoon season. Flooding was most severe in northern and central provinces, where up to 250 mm of rain fell within a few days and flash floods claimed nearly a dozen lives. Damage was incurred to homes, infrastructure, schools, wells and sanitation systems, among other vital resources and services. FAO led the emergency response and early recovery of the agriculture sector and provided assistance to recover damaged crops, livestock, aquaculture and agro-forestry. FAO also helped the Government of Lao PDR identify the fundamental areas of intervention to rebuild livelihoods, ensure food security and avoid destitution.

15. Lao PDR, the Philippines and Viet Nam were hit by a series of typhoons in September-October 2009, including the most severe typhoon, Ketsana, which affected crops on thousands of hectares of land and severely disrupted the farming-based livelihoods of millions of farmers. FAO carried out immediate response and early recovery activities supporting thousands of farming families. FAO's recovery efforts continue in these countries.

16. On 30 September 2009, West Sumatra in Indonesia was hit by an earthquake measuring 7.6 on the Richter scale, causing more than 1100 deaths and nearly 3 000 injured. Farming-based livelihoods were affected through the collapse of animal shelters, damage to irrigation

infrastructure and loss of agriculture inputs. FAO responded immediately by providing agriculture inputs to nearly 7 000 farming households to help them revive their farming activities.

17. In Mongolia in the winter of 2010, a spell of intense cold (with temperatures plummeting to minus 40-50°C) followed a very dry and long summer and autumn, which resulted in insufficient fodder to feed livestock during the winter months. As of mid-May 2010, 8.2 million head of livestock had died, threatening the livelihoods of thousands of herder families and putting them at risk of food insecurity. An FAO mission stressed the urgent need to strengthen household food security for the most vulnerable families to prevent further loss of their assets, and provided immediate livestock input support for the most vulnerable herders as a top priority. In parallel, fodder, supplementary feed and veterinary care were urgently recommended for weak and stressed animals until mid-April, with funding requirements of about US\$6 million through the Appeal. Additionally, assistance of about US\$0.9 million was provided by FAO through projects funded by the Central Emergency Response Fund (CERF) to provide emergency livestock inputs and by Austria to support the population affected by DZUD.

III. The link between natural disasters, agriculture and food security in the region

18. Disasters can disrupt the life of a community or society and set back development gains. Often the people most severely affected live in rural areas and tend to be mostly dependent on agriculture-based livelihoods, livestock and fishing. Typically those people with the fewest resources and weakest coping strategies are the most vulnerable. Improving capacity to prepare for disasters, prevent or mitigate the loss due to disasters, and respond to food and agricultural threats and emergencies will help stabilize food availability and access. DRR and DRM need to be considered integral components of hunger and poverty alleviation efforts in the region.

Types of natural disasters and their impacts

19. Natural disasters include disasters originating from hydrometeorological hazards (floods, waves and surges, storms, droughts, etc.), geological hazards (earthquakes, landslides, volcanic eruptions, etc.) and biological hazards (epidemics, insect infestations, etc.).

20. Drought causes crop failures, undernourishment, land degradation and a decline in water resources. Further consequences are depletion of forage, overgrazing, indiscriminate cutting of vegetation and large-scale mortality of livestock. The consequent unemployment, desperate sale of productive assets and out-migration strain the agricultural sector's capacity for sustainable agriculture and rural development. Consecutive multiyear droughts have occurred in Central and East Asia over the past decade and more recently in Southeast Asian countries, including Myanmar, Thailand and Viet Nam.

21. Riverine, flash and coastal floods are a major cause of upheavals in the region. There are about 31 million hectares of flood-prone areas in South and Southeast Asia. Of these, 13 million are cultivated and benefit from moderate flooding. Floods recur during the monsoon and rainy seasons, often with disastrous results: loss of human lives, homes, harvests, livestock and vital cropland. Frequent and devastating floods often swamp densely populated floodplains. Inundation of large river basins, in the Ganges, Mekong and Yangtze, is usually seasonal and can last for weeks.

22. Storms, from typhoons to cyclones, often combine with floods to exacerbate suffering and chaos. They damage crops, livestock, property, forests and physical infrastructure. They also disrupt the livelihoods of fishers. Storms as such cannot be prevented, but appropriate interventions can mitigate their impact and help hasten recovery.

23. Earthquakes, tsunamis, volcano eruptions, and landslides and mudslides may occur less frequently. But their impact on local populations in terms of death and injury, livelihood

disruption, unemployment, asset loss and out-migration is extremely severe. Unfortunately, Asia and the Pacific have recently been experiencing most of the world's major geological disasters.

24. Fire is employed as a management tool in forestry and plantation agriculture. If uncontrolled, it can wreak significant damage to forests, agriculture production, infrastructure, farm assets and public health. The transboundary health hazards of smoke from forest and agriculture-generated fires have been much in evidence in Southeast Asia in recent years.

25. Animal and plant diseases are of growing concern, as disease-related disasters are occurring with increasing frequency. Industrial livestock production and high animal densities in peri-urban areas are emerging as "flash points" and the source of new zoonotic diseases. Outbreaks of disease cause direct economic losses to farmers and affect production, consumption and international trade. Heightened vigilance is necessary if large-scale outbreaks are to be prevented and measures adopted to address dangers posed by newly emerging diseases. Cases in point are the economic slowdown caused by the recent outbreak of Severe Acute Respiratory Syndrome (SARS), and the threats posed by Highly Pathogenic Avian Influenza (H5N1) and Influenza Type A (H1N1). Other threats are on the horizon such as bovine spongiform encephalopathy, rabies, brucellosis, Foot and Mouth Disease and the nipah virus. Also worth noting are the parasitological spread of cystercercosis, schistosomiasis and taenia.

26. Many factors come into play in these natural disasters. The more important of these interrelated determinants are poverty, settlement on fragile ecosystems, exploitative agricultural systems and practices, and land degradation and water scarcity, leading to even more food insecurity. This vicious cycle is exacerbated by widespread adoption of industrial farming methods, especially in livestock and fisheries enterprises, sometimes leading to pest and disease epidemics. Moreover, global warming and climate change will shift their destructive potential to a higher scale.

Gender and natural disasters

27. Gender analysis should also be considered an integral component of effective DRM in the Asia-Pacific region. Gender is certainly not an automatic indicator of disadvantage and a factor of disaster vulnerability. However, it can be a root cause of social vulnerability to disasters.² Gender differences in certain situations can make women more vulnerable than men. For example, almost 80 percent of those affected by the 2004 tsunami in Indonesia and Sri Lanka were women.³

28. Men are likely to receive preferential treatment in rescue efforts, and women suffer more from shortages of food and other resources in the aftermath of disasters in societies that are considered more inequitable. Many FAO projects and programmes taking up DRR and DRM, and operating in conflict and transition situations may sometimes address gender concerns, particularly at the community level, but there is great need for deeper analysis and assessment, including sex- and age-disaggregated targeting.⁴

29. FAO needs to place greater focus on improving assessments and analyses of gender-differentiated needs in Asia and the Pacific. Current approaches could be strengthened by more thoroughly compiling lessons learned and developing guidance on good practice that could be

² FAO DRM Baseline Assessment: Focus on Gender, 2009.

³ A 2006 study by the Center for Research in the Epidemiology of Disasters found that women's mortality was higher following the 2004 Indian Ocean tsunami due to several factors, including the fact that many women were unable to swim or were constrained by their clothes.

⁴ FAO designed and led a Gender and DRM training workshop for the UN Country Team in Viet Nam in October 2009, using good practice examples from DRM assessments, as well as the FAO-WFP Socio-Economic and Gender Analysis (SEAGA) Guidelines.

useful for future programming in emergency response and rehabilitation.⁵ The involvement of women in all phases of formulating and implementing DRM interventions provides an opportunity for women's empowerment as well as for increasing the resilience of communities faced with recurring natural hazards and crises in food and agriculture. The UN International Strategy for Risk Reduction has noted that a gender-inclusive approach to DRM can achieve win-win results for families and communities, and that women, if given equal opportunities, can perform multifunctional roles effectively, as participants, managers, decision makers and leaders in reducing and managing the risk of disasters.

Climate variability and change

30. In the coming decades, climate change is likely to exacerbate the risks of disasters, not only from more frequent and intense hazard events but also through greater vulnerability to the existing hazards. More frequent and intense storms and floods and long-lasting droughts can drastically reduce existing community coping capacity to prepare for, respond to and rebuild after consecutive hazard events. The adverse impacts of climate change on food security and on the situation of particularly vulnerable groups such as children, the elderly and women, will increase the vulnerability of communities to natural hazards of all types. Many of the countries that are already disaster-prone and highly vulnerable will face even greater risk owing to the impact of climate variability and change.

31. Deforestation, forest degradation and exploitative agricultural practices relating to cattle feedlots and excessive fertilizer use currently account for about 30 percent of greenhouse gas emissions. Crop, livestock and aquaculture production cause water pollution by introducing nitrates, phosphates and pesticides. They are major anthropogenic sources of greenhouse gases (e.g. methane, nitrous oxide). They also contribute to other types of air and water pollution. Reducing emissions arising from deforestation and forest degradation has recently been receiving increasing attention and resources. But reducing emissions from agricultural lands has yet to attract such attention and resources.

32. In turn, climate change will impact agriculture through drought and desertification and shifts in agro-ecological zones. Changing farming patterns may threaten in situ agricultural biodiversity; and increased seasonal weather variations will affect agricultural production and food supplies. Rising sea levels and storm surges have huge implications for coastal fishing communities, particularly in low-lying small Pacific island developing countries and the tropical deltas. In these areas, climate change adaptation and mitigation clearly constitute a high priority.

33. The large and growing population and its concentration in resource-rich areas in the Asia-Pacific region make climate change preparedness and mitigation tasks increasingly difficult. Moreover, climate change will have a tremendous impact in the Pacific region and among some Asian archipelagic nations such as Maldives where, for example, there is a risk of small islands literally disappearing. It is hoped that increased government awareness of the gravity of climate change will create the necessary political will to mobilize resources for comprehensive and concerted action plans. These should be designed to, among other results, minimize agriculture's greenhouse gas emissions, reduce fossil-fuel use, increase carbon sequestration and improve capacity for adaptation to climate change.

IV. New corporate strategy with a DRM framework

34. The FAO Strategic Framework includes SO I, a new corporate strategy focused on *improved preparedness for, and effective response to, food and agricultural threats and*

⁵ As such, once identified, it is essential to further build the competence and skills of emergency and technical staff, as well as local partners, in gender analysis and approaches to the meet gender-based needs of FAO emergency and rehabilitation interventions.

emergencies. This approach is based on the major pillars of DRM: (i) disaster risk reduction (preparedness, prevention and mitigation); (ii) response and rehabilitation; and (iii) support to the transition from emergency response to rehabilitation and development programming.

35. In this regard, FAO aims to increase the resilience of households and communities in the pre-disaster phase by avoiding (prevention) or limiting (mitigation) the adverse effects of hazards and providing timely and reliable forecasts (preparedness) and policy advice. FAO support to member countries during an emergency response phase is focused on the rapid restoration of agriculture-based livelihoods through time-critical support to communities and governments. Post-disaster, the focus is on rehabilitation and long-term recovery, based on the principle of *building back better*: increased resilience to future hazards can be achieved through longer-term interventions that facilitate the transition from relief to development. The linkages between prevention, preparedness, mitigation, emergency response, recovery, rehabilitation and transition to development are dynamic and fluid. Thus, an integrated response plays a key role in boosting community resilience to threats, mitigating the impact of crisis and helping vulnerable people adapt to new situations.

36. Generally, FAO DRM work promotes sectoral policy framework and institution building for risk management; sustainable natural resource management practices; and the use of agriculture, forestry, fisheries and aquaculture mitigation measures. FAO is also integrating DRM practices in sectoral development and post-disaster rehabilitation plans in order to significantly reduce disaster losses, vulnerability and risk by strengthening institutions and mechanisms for DRM. This work focuses on helping vulnerable groups to strengthen their livelihoods as well as their community-based institutions. The aim is to assist countries in their efforts to integrate emergency relief operations with long-term DRR strategies and transitions to development interventions.

37. The medium-term organizational results (outcomes) of SO I include:

- Result 1: Countries' vulnerability to crisis, threats and emergencies is reduced through better preparedness and integration of risk prevention and mitigation into policies, programmes and interventions.
- Result 2: Countries and partners respond more effectively to crises and emergencies with food- and agriculture-related interventions.
- Result 3: Countries and partners have improved transition and linkages between emergency, rehabilitation and development.

38. All elements of DRM are taken into account in this approach, including early warning, contingency planning, prevention and mitigation, needs assessment, timely response and support to national DRM planning. For the Asia-Pacific region, a DRR and DRM approach provides a set of interventions that will help equip communities and local and national governments to improve their own responses to and preparation for threats and crises.

39. DRR builds on the need for a sound understanding of vulnerabilities and on the promotion of resilience. There are two distinct modes of risk reduction: (i) aimed primarily at the physical environment; and (ii) aimed at human processes, primarily socio-economic. In most cases the two are interdependent and the integration of DRR into sustainable development and sectoral policies and planning is recognized as the first priority.

40. The main international framework for DRR is the internationally negotiated Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. There are five HFA priorities: 1) ensure that DRR is a national and a local priority with strong institutional basis for implementation; 2) identify, assess and monitor disaster risks and enhance early warning; 3) use knowledge, innovation and education to build a culture of safety and resilience at all levels; 4) reduce the underlying risk factors; and 5) strengthen disaster preparedness for effective response at all levels. The UN-ISDR Global Assessment Report (2009) on the implementation of the Hyogo Framework for Action noted that despite significant progress

in the Asia and the Pacific region, HFA implementation needs to be accelerated to reduce disaster risk, given the growing challenges facing countries in the region due to weather and climate-related natural hazards.⁶

Emergency response and rehabilitation

41. In responding to food and agricultural emergencies, FAO provides leadership and timely assistance through broad technical expertise. Firstly, FAO assesses emergency needs, monitors the food security situation, formulates rehabilitation strategies and implements recovery programmes. As the lead UN agency in agriculture, FAO coordinates agriculture clusters or co-chairs food security or livelihood clusters and provides technical advice and coordination for agricultural interventions undertaken by all development stakeholders and partners, including NGOs, civil society and other UN agencies. FAO, along with WFP, are actively pursuing establishment of a Global Food Security Cluster (GFSC) to more effectively coordinate responses to emergencies and advocate for food security.

42. In the case of protracted crises, FAO responses go beyond mobilizing emergency support and build upon the natural resilience of communities. This approach leads to more effective and longer-term recovery. Priorities are given to strengthening diversity, supporting local institutions and building upon local knowledge and skills.

Transition and linkages between emergency, rehabilitation and development

43. Emergency response is important in the region, but merely responding to disaster-related emergencies after they occur is not adequate. Responses should give way to a strategy for reducing and preventing disaster risks and threats. Provision of early warning on impending food emergencies and rehabilitation of food and agricultural production systems are the centerpieces of this strategy. So are the implementation and strengthening of regulatory frameworks and standards for plant protection, food safety, transboundary pest/parasites and diseases, invasive species and genetic resources conservation.

44. FAO's DRM interventions assist countries in their efforts towards better planned, long-term risk prevention and preparedness strategies. Modern information and communications technologies applications can support these tasks with intelligent information and data bases on disaster vulnerability and epidemiology in sub-regions. In a nutshell, disaster-affected areas need to 'build back better.' Improved resilience and preparedness after the calamity will be indicative of progress in this endeavor.

V. Conclusions and recommendations

45. In the Asia-Pacific region, significant drops in hunger and poverty over the past years have been associated with strong and consistent agricultural growth, appropriate policy and institutional reforms, and improved access to affordable food. At the same time, natural resources in the region have been subject to increasing degradation due to various factors, including disasters. The pressure on land, forest, water and aquatic resources as well as coastal ecosystems has been severe in many areas. In coping with economic and other external shocks, government policy responses must protect and promote those investments in public goods and services that build long-term capacity and resilience of the agricultural and rural sectors. To avoid recurrence of food crises, vulnerable countries need to increase their investment in research, development and extension services that are essential for future food security.

⁶ The urgent and critical need to integrate climate change adaptation and disaster risk reduction (DRR) in the region will be explored at the 4th Asian Ministerial Conference on Disaster Risk Reduction in Incheon, Republic of Korea (25-28 October 2010).

46. Member countries in the region, with FAO support, should seek ways to strengthen the capacity to prepare for and respond to natural disasters, particularly at the local and community levels, and with a special focus on community-based DRM. Efforts to reduce disaster risk through mitigation measures (such as land-use planning), prevention and preparedness (such as early warning and contingency planning) need to be complemented by food and nutrition security strategies to help build community resilience. The recurrent natural disasters in the region also highlight the need to strengthen the rapid response mechanisms and contingency planning of countries in the region, but also the growing need to improve disaster preparedness, early warning and other risk reduction strategies. A more proactive approach to DRR would help reduce the loss of life and livelihoods in the agriculture sector, reduce the displacement of rural populations, and help ensure that food is accessible and available. Moreover, it would help reduce dependence on external aid, including food aid. More focus on strengthening the resilience of communities and enhancing the capacities of rural populations and government authorities would help countries in the region *build back better*.

47. The DRM Strategy, in addition to acknowledging the linkages between climate change adaptation and DRR, should also be focused on strengthening sub-regional cooperation to reduce risk, particularly with the Association of South-East Asian Nations (ASEAN) and the South Asian Association for Regional Cooperation (SAARC). FAO's regional strategy should be further informed by the ASEAN Agreement on Disaster Management and Response (AADMER), effective December 2009, which is the first HFA-related binding instrument in the world that will strengthen regional policy on DRM by prioritizing DRR and enabling a more proactive regional framework for cooperation, coordination, technical assistance and resource mobilization.

48. Improved capacity to respond to food and agricultural threats and emergencies will help make the transition towards medium- and long-term recovery. In this regard, broad-based and concerted disaster risk reduction, preparedness and prevention programmes will help mitigate the long-term impact of disasters on food security and balanced nutrition. Emphasis also should be on sub-regional capacity improvement for disaster and risk reduction, preparedness for natural disasters and effective emergency responses, consistent with the transition to rehabilitation for long-term sustainable growth.

49. To strengthen support to FAO Representatives and provide the required assistance in a more effective and efficient manner, establishing an emergency operations hub and a resource mobilization hub in the regional office was recommended by the FAO Representatives in Asia-Pacific region. Operations and emergency officers in such a hub could work closely with the technical officers in the multidisciplinary team in the regional and sub-regional offices.