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#### **Thematic cluster for the implementation cycle**

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### **Report on the Capacity Development Workshop for Improving Agricultural Productivity, Water Use Efficiency and Rural Livelihoods**

#### ***Summary***

A Capacity Development Workshop on Improving Agricultural Productivity, Water Use Efficiency and Rural Livelihoods was held at the United Nations Conference Centre (UNCC) in Bangkok, Thailand, from 28-30 January 2009.

The discussions, that brought together senior government policy makers, representatives of major groups, officials from the United Nations system, researchers and experts, and other practitioners, focused on strengthening technical and institutional capacities of key Government institutions and policymakers in developing and implementing sustainable agricultural and rural development and irrigation management policies, with a specific focus on rural poverty reduction.

The outcome of the workshop was *Summary of Recommendations* which emphasized that improving agricultural productivity, promoting integrated management of land and water resources, providing access to social capital, securing access to tenure and adapting to climate change, are prerequisites for sustainable agriculture and food security. The Summary will be presented as a contribution to the seventeenth session of the CSD to be held from 4-15 May 2009 in New York.

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<sup>1</sup> E/CN.17/2009/1.

## **I. OVERVIEW**

1. A Capacity Development Workshop on Improving Agricultural Productivity, Water Use Efficiency and Rural Livelihoods was held at the United Nations Conference Centre (UNCC) in Bangkok, Thailand, from 28-30 January 2009. The workshop brought together senior government policy makers, representatives of major groups, officials from the United Nations system, researchers and experts, and other practitioners, to share lessons learned and best practices in combating rural poverty. The workshop began with an opening session, followed by sessions with thematic and country presentations, which were followed by round table discussions.

2. The objective of the workshop was to strengthen technical and institutional capacities of key Government institutions and policymakers in developing and implementing sustainable agricultural and rural development and irrigation management policies, with a specific focus on rural poverty reduction. Analysis and sharing of past experiences against the background of challenges facing agriculture, water and rural development allowed policymakers to have a better understanding of the policy interventions and actions needed to address the challenges of reducing rural poverty. In this regard, the workshop targeted the following specific goals:

- To assess the effectiveness of existing national policies and strategies on rural development, irrigation management and agricultural development in reducing rural poverty – especially with a view to sharing experiences on good and bad practices.
- To identify a range of interventions and adjustments needed in the existing policies and strategies to promote sustainable agriculture, including irrigation management and rural development.
- To raise awareness that agricultural development and water resources management alone will not be sufficient to reduce rural poverty, and that interventions in non-farm sector will be equally important. Lessons learned with regard to non-farm interventions will be shared to promote scaling up of good practices.

3. The workshop was organized by the United Nations Department of Economic and Social Affairs (UNDESA/DSD) in collaboration with the UN-Water Decade Programme on Capacity Development (UNW-DPC) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).

## **II. SUMMARY OF THE WORKSHOP**

### **Opening Session**

4. The Capacity Development Workshop on Improving Agricultural Productivity, Water Use Efficiency and Rural Livelihoods was inaugurated by Dr. Noeleen Heyzer,

Under-Secretary-General of the United Nations and Executive Secretary of ESCAP. She welcomed all to the Workshop and conveyed the message that world poverty and hunger cannot be reduced without improvement in agricultural production and distribution. Even though the Asia-Pacific region has made good progress towards reducing poverty a lot remains to be done, especially for people living in rural areas to have access to clean water and basic sanitation, and to safeguard the rural population against natural disaster. She informed the delegates that ESCAP's Economic and Social Survey launched in March 2008 was one of the first to highlight the neglect of agriculture as a main development challenge faced by the region. It highlighted the need for another agricultural revolution including through increased investment in agriculture research, science and technology, human capital, extension services, irrigation and rural infrastructure. It also identified revamping of land tenure systems and empowerment of the poor, particularly women, with the skills to tap labour market opportunities and to promote rural non-farm activities as important steps to reduce rural poverty and hunger.

5. With thanks to UNW-DPC and UNESCAP for collaborating on the workshop, the Director of UNDESA's Division for Sustainable Development, Mr. Tariq Banuri, welcomed all to the workshop and emphasized the interconnected objectives of sharing experiences and lessons learned for sustainable agricultural water management in order to identify policies and actions to ensure that these lessons are put into practice, and ensuring that commitments already made in this regard are fulfilled. He outlined factors hindering effective implementation of agricultural water management options, including persistence of hunger and malnutrition, propensity for price volatility, the growing gap between the rising demand for food and stagnant yields in food production, growing conflict between alternative uses of land and water, and climate change. He highlighted various issues that should be discussed, such as challenges of addressing unsustainable natural resources use, agriculture and food security in a coherent and integrated manner; resolving conflicts over multiple uses, especially between food and energy; policy measures for enhancing agricultural productivity; and what should be done to make the multilateral trading system as well as regional trading arrangements more supportive of agriculture.

6. UNCCD Executive Secretary Mr. Luc Gnacadja stated that desertification is an under-recognized threat to global well-being that is aggravated by climate change. Desertification refers to land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities. He mentioned that, from the perspective of the UNCCD, agricultural production systems should take into account the sound management of common resources such as water and land that sustain agricultural productivity. Most of the action programs by countries party to UNCCD identify the linkages between land and water utilization and management as a prerequisite for the promotion of sustainable agricultural production systems. He also indicated that combating desertification is synonymous to undertaking sustainable development efforts. The protection of land is not only good for agricultural practices, but is also a response to other major sustainable development challenges, including climate change and the fulfilment of the Millennium Development Goals (MDGs).

7. Dr. Ralf Klingbeil, Senior Programme Officer of the UN-Water Decade Programme on Capacity Building (UNW-DPC), welcomed participants and provided an overview of activities of UNW-DPC, citing the mandate of strengthening the capacity development programs of UN-Water members by supporting the improvement of capacity and competence for national and local stakeholders in water management. He stressed that water use efficiency in agriculture must be one of the highest priorities for sustainable livelihoods. A small reduction of losses in the irrigation systems and in the production-consumption chain makes a substantial volume of fresh water available for human consumption and other productive purposes. It is important not only to address individual capacities or develop knowledge of individual water managers or agricultural engineers, but also to retain individual knowledge in respective institutions, contribute to institutional capacity development, and hence contribute to building competent institutions capable of sustainable land and water management.

8. Finally, Mr. Javad Amin-Mansour, CSD-17 Vice-Chair representing the Asia region, provided an overview of the upcoming CSD-17 session addressing the current thematic cluster of agriculture, rural development, land, drought, desertification, and Africa. He underlined the significance of desertification, severe drought, climate change, loss of biodiversity, global population growth, and management of land and water resources, as well as lack of political will good governance, and the adverse impacts of recent global food and financial crises. He stressed the urgent need for provision of means of implementation including mobilization of financial resources, utilization of new and appropriate technologies and enhancement of capacity building in developing countries, and international cooperation crucial for achieving sustainable development in general, and the MDGs in particular.

## **Session 1: Agricultural Development and Food Security**

### *Thematic presentations*

9. “Food Security: Concept, Framework and Interdependencies” by Amitava Mukherjee, Senior Economic Affairs Officer and Head, UN–Asian and Pacific Center for Agricultural Engineering and Machinery in Beijing, China. The concept of food security as it relates to livelihood is defined as a state when there is enough food for all with adequate nutritional value that is culturally acceptable, and people have economic, social and physical access to food and potable water at all times for a healthy life. The following seven entitlements define access to food: endowment entitlement, production-based entitlement, own labour entitlement, exchange entitlement, trade-based entitlement, inheritance or transfer entitlement, and usufruct entitlement. Policy options for food security include: adequate production of food, measures to enhance general economic growth and expansion of employment, diversification of production, decent rewards for work, enhancement of medical and health care, spread of education and literacy, arrangement for special access to food, creating political incentives to ensure food security, and strengthening of news media and civil society organizations.

10. “Agriculture Development and Adaptation to Climate Change: Issues and Challenges” by Lisa Schipper of the Stockholm Environmental Institute (SEI) introduced the concept of adaptation to climate change as a process of adjusting to changes in climatic variables as well as the adaptation that takes place at different levels. Vulnerability implies how sensitive and exposed an individual or system is to a specific natural hazard. Agriculture is one of the most sensitive sectors to impacts of climate change, as it is the major source of livelihoods of the majority of the world’s rural poor. She emphasized it as the major overlapping issue for addressing both climate change and poverty, since climate change affects food availability and stability of supply, and impacts use of land for bio-energy crops. As such, climate change needs to be considered seriously in the food security debate. Adaptation options need to be explored by evaluating the likely changes, by assessing the impacts, and then deciding on how greenhouse gases can be reduced and adaptation efforts taken. Mitigation and adaptation need to be jointly considered.

11. “Sustaining Smallholder Farming Systems: Opportunities and Constraints” by Esther Penunia, Secretary General of Asian Farmers Association (AFA), dealt with the constraints for sustaining smallholder farming systems, which face challenges such as lack of access and control over natural resources, poor participation in decision making, lack of information, and limited opportunities for capacity building. Recognition of the value of small-scale farmers, provision of adequate support services, capacity building of farmer’s organizations and agricultural cooperatives, introducing land tenure security policies, and mainstreaming integrated, diversified agriculture are identified as opportunities for sustaining smallholder farming systems. The Asian Farmers Association is committed to upholding smallholder farming systems through organization and capacity building, as well as networking and advocacy with national governments and regional inter-governmental bodies.

#### *Country presentations*

12. Andrew T. Daudi, Principal Secretary for Agriculture and Food Security, Ministry of Agriculture of Malawi, provided an assessment of policy reforms for enhancing national agricultural productivity. Malawi has undergone various significant agricultural sector reforms to address the problem of fluctuating agricultural growth due to low agricultural productivity. The decline in agricultural sector investments, insufficient access to agricultural inputs, inadequate communication and adoption of technologies, lack of access to credit, low output prices, land degradation, weak intra- and inter-sector linkages, and climate change and overdependence on rain-fed agriculture were indicated as the underlying causes of low agricultural productivity. Free input programs, farm input subsidy programs for hybrid seeds and fertilizer and pricing policies for cotton, maize and tobacco are some of the major policies implemented to address productivity challenges.

13. M.A. Akmal Hossain Azad, Additional Secretary of Ministry of Agriculture of the Government of the People’s Republic of Bangladesh, provided an overview of agricultural productivity, water use efficiency and strengthening rural livelihoods in the context of

Bangladesh. Bangladesh has achieved significant progress in food production over the last three decades, but poverty remains endemic. Addressing various factors such as input use efficiency, crop diversification, adoption of integrated crop production farm mechanization, and research and technology innovations, among others, promoted agricultural productivity. Soil degradation, pest infestation, lack of infrastructure and power supply, and land scarcity were some of the challenges cited for crop production. He also discussed capacity utilization of minor irrigation systems, command area development, drought alleviation, increasing water use efficiency, alternate wetting and drying methods for water saving, salinity management and institutional arrangement for increasing water productivity. Apart from improving agricultural productivity and water use efficiency, agricultural marketing systems and creating employment opportunities were mentioned for strengthening rural livelihoods.

### *Outcomes*

14. Salient outcomes of the presentations and discussion during Session 1 include the following:

- Food security is a much broader concept than food production and there are many factors that determine food security. Economic, social and physical access to food and potable water at all times are prerequisites for food security. Policies aimed at promoting agricultural development should adopt balanced approaches in the sense that pro-poor growth receives priorities with special attention to small farmers.
- On sustainability of farm input subsidies, the question is to whom does the subsidy go? Proper targeting guidelines should be set to identify the group receiving the subsidy, and in the case of Malawi some of the factors mentioned for extending subsidies are directly targeted to the poorest of the poor, to women-headed households, to those affected by natural calamities and to those who do not have any support of any form. It is imperative that Government support services be directed to farmers, particularly small farmers, from land ownership to marketing of products.
- Climate change has serious implications for agricultural development and food security. It works in combination with many other factors that affect food production and access to it. We need to recognize that adaptation to climate change is a process, but there is a limit to adaptation as well. Adaptation measures and efforts to reduce greenhouse gases are taken at different levels guided by national policies and strategies. The individual and community level actions taken to mitigate and adapt to climate change in different countries must be recognized and adequate support should be provided to the small-scale farmers who are contributing to the collective effort of mitigation and adaptation to climate change.
- The pace at which we can adapt our agricultural production systems to changes in climate will be contingent upon the rate at which we will facilitate capacity building, technology transfer and other efforts to adapt to climate change.

Future policies should focus on sustainability of programs, as efficient management of natural resources and efficient water management practices are critical for agricultural development and water security.

- Smallholder producers play a central role in achieving sustainable rural development and poverty reduction. Support is needed for capacity building, institution building, improved market access, and equitable and secure access to land and natural resources. Local-level institutions, such as farmer organizations and cooperatives, are crucial for capacity building of small-scale farmers to act collectively in production, marketing and advocacy for the common interest.

## **Session 2: Improving Agricultural Water Management**

### *Thematic presentations*

15. “Will there be Enough Water? What the Comprehensive Assessment of Water Management in Agriculture Says”, by Deborah Bossio of IWMI, highlighted the drivers of the changes to water management and provided an overview of the water use situation. When one asks, “Is there enough water to grow food and support wetlands and biodiversity?” the response will be negative, unless we change the way we think and act on water issues. The presentation reflected the future situation with the consideration of multi-sectoral needs and demands, and stressed the need to increase water productivity to maintain basic food production. Proper management in the agricultural sector is needed with community participation maintaining habitat integrity and connectivity to provide ecosystem services. In this regard, a policy reform process is needed to address the integrated facets of poverty and hunger reduction, gender inequality and ecosystem degradation. Appropriate actions must consider water storage as well as water and land productivity. Also, rain-fed agriculture and land management contribute significantly to agricultural productivity and food security, and should be recognized in the process of resource allocation towards the agricultural sector.

16. “Integrated Land and Water Management for Food Security: Lessons Learned”, by Brett M. Ballard of AusAID, Cambodia, emphasized integrated land and water management, focusing on key inputs of land and water resources for achieving sustained agricultural growth that promotes poverty reduction, equity and food security. He addressed how we can achieve greater agricultural productivity through more efficient use of land and water resources under demographic and climate pressure and an increasingly contested environment of sharing resources. Institutional arrangements, governance, development planning, the role of science, information and knowledge, and capacity building are some of the important aspects of integrated land and water management. With institutional arrangements for land and water management distributed over different sectors, a structured coordination is needed aligning the policy and planning objectives both horizontally and vertically. Regarding governance, land and water tenure rights and obligations need to be clarified, and effective dispute resolution mechanisms must be instituted. Integrated land and water management requires long-term development planning with changing perspectives and as such, the role of science is very important and

requires substantial and sustained support. Building strong linkages among science, policy, farmers and civil society is very important within efforts to share knowledge and information and build capacity.

17. “Technological and Management Innovations in Irrigation Water Management and their Impact on Agricultural Production” by Thierry Facon, Senior Water Management Officer, Regional Office for Asia and Pacific of FAO, stressed a multi-scale approach to raise water productivity. Its three basic principles are: increasing the marketable yield of the crop per unit of water; reducing all outflows (like drainage, seepage and percolation); and making effective use of rainfall, storm water and water of marginal quality. For enhancing water productivity at plant level, various options are to be considered such as improving germplasm (e.g. improving seedling vigour, increasing rooting depth, increasing the harvest index), enhancing photosynthetic efficiency, and conducting breeding programs to develop an appropriate growing cycle to match water availability and favourable climate to the vegetative and reproductive periods. Improved practices at field level for raising water productivity relate to changes in crop, soil and water management, involving appropriate crops and cultivars, planting methods, timely irrigation, nutrient management, drip irrigation, and improved drainage for water table control. Deficit irrigation in water-stressed conditions, supplementary irrigation and water harvesting to cope with the variability of resource availability are some other options at field scale for improving water productivity. Finally, at the basin scale, the effects of agriculture on other water users, human health and the environment become at least as important as production issues. Options for improving water productivity at the agro-ecological or river-basin level are found in better land-use planning, better use of medium-term weather forecasts, improved irrigation scheduling to account for rainfall variability, and conjunctive management of various sources of water, including water of poorer quality where appropriate.

#### *Country presentations*

18. Salem Hassan Bashuaib, Chairman of the National Water Resources Authority of Yemen, provided an overview on groundwater development and management in Yemen. A large part of the country’s economy depends on groundwater resources. Groundwater depletion has become a critical issue since the 1980s, particularly as farmers have rapidly exploited groundwater resources through the drilling of deep wells. Major groundwater management challenges are identified as groundwater mining, groundwater quality deterioration and seawater intrusion. Other challenges include enforcement of water law and various water regulations, and particularly the decree that regulates the activities and movements of drilling rigs. Yemen has made considerable progress in groundwater resources management in relation to institutional reform and capacity building, policies and legislation, and studies and plans. Major drivers for policies and programs are identified as developing and strengthening institutional capacity, community empowerment, affordability and accessibility of urban and rural populations to safe and regulated water supplies and sanitation, and sustaining farmer’s income while using less groundwater and water harvesting. Raising public awareness, forging coordination among

different stakeholders, and instituting monitoring and evaluation programs are also considered to be effective management interventions.

19. K.R.S. Perera of the Ministry of Agriculture Development and Agrarian Services, Sri Lanka, provided an overview of institutionalizing agricultural water management at the local level, including background on Sri Lanka's hydro-climatic conditions, irrigation and rain-fed agricultural schemes and challenges in improving productivity. The high cost of seeds and fertilizer, low soil fertility lack of modern technologies, and the deviation of younger generations from agriculture were all contributing factors. Climate variation brings added challenges and problems due to changes in seasonal rainfall patterns, high intensity of rainfall and reduced numbers of rainy days, and frequent floods and damages to irrigation infrastructures. The agricultural water management options introduced in the early 1980s addressed some of these issues, as introduction of high yield varieties, canal lining, awareness programs, participatory irrigation management, rehabilitation and modernization of irrigation systems, fertilizer subsidy programs, and consideration of climate change impacts through various studies all had a positive impact. These were also facilitated through the introduction of agricultural policies, irrigation and agrarian acts and national goals. The major goals of the country with regard to the management of water are: greater efficiency in irrigation and water management through farmer participation; increased productivity through crop diversification; rehabilitation of minor irrigation systems; and drainage and flood protection improvements.

#### *Outcomes*

20. Salient outcomes of presentations and discussion during Session 2 are summarized below:

- There is a need for an integrated approach to address the water scarcity issues, including consideration of how water rights are defined and how water resources are being allocated and regulated. It is necessary to come up with strong policy statements addressing disparity with regard to entitlement to water, particularly with regard to small-scale farmers.
- It is necessary to view land and water as integrated ecosystems and to strive for efficient development and management of these resources to increase food security. Adequate institutional arrangements must facilitate and promote integrated approaches to land and water management through transparent dialogue among policymakers, the private sector and civil society.
- Inventory of land ownership and land rights is central to effective land and water management. However, ascertaining land rights properly is a very complex issue. Roles and responsibilities of different institutions are to be defined properly to deal with land tenure and land titling programmes.
- Improved practices at field level including deficit irrigation in water-stressed conditions, supplementary irrigation, and water harvesting to cope with variability are advocated for improving water productivity. Wastewater

- management and recycling of wastewater in irrigation, with due consideration of health requirements, are important options for water-stressed countries.
- A holistic approach is needed in governance of land and water management in the context of basin-wide integrated water resources management plans. Necessary policy reform processes are to be instituted to ensure allocation of adequate resources for the development and implementation of sustainable agricultural options, with participation of all cross-sections of farming communities.

### **Round Table 1: Water Management and Food Security**

21. Citing facts and figures with respect to water use by different sectors and the need for efficient agricultural water management with respect to food security, the moderator of this round table session invited panellists to discuss how water management challenges in the future will look like and how these can be addressed within the context of water shortages and water needs for food production. The discussion revolved around the following points:

- Water management and water scarcity is directly linked to food security. Many policy decisions that are not directly or indirectly related to water nonetheless affect the availability and quality of water. It is therefore imperative that the water sector needs to inform other sectors where policy decisions are taken that will impact water-related issues.
- An effective institutional framework is needed to ensure a dialogue between those who address water issues from a water resources management perspective and those who address issues related to agricultural water management. Land and water management policies are challenging to implement, since they address common pool resources.
- Countries need to have clear policies and strategies for land and water management, maintaining consistency among water policy, agricultural policy and food security policy. Adequate capacity building endeavours at different levels, both within sectors and across sectors, are needed for proper understanding of how to implement sectoral policies and strategies. Capacity building at the local level is particularly important.
- Good benchmarking is necessary to assess the effectiveness of investments made in agricultural water management. Monitoring, stakeholder participation, integrated management and capacity building at different levels can lead to good governance.
- A new concept of water security is advocated to address not only the basic need for food and water, but also to promote human well-being through socio-economic development with special attention to maintaining a balance among the sustainable development pillars. Important elements of a water security framework include enhancing resilience of communities to changes,

intensifying efforts to provide clean water for all, implementing pro-poor policies and improving irrigation investment management.

### **Session 3: Strengthening Rural Livelihoods**

#### *Thematic presentations*

22. “Non-Farm Interventions for Strengthening Rural Livelihoods” by Mechai Viravaidya, Chairman of Population and Community Development Association (PDA), reflected on how poor people, whose basic needs are not being met by government services and who cannot afford to pay for alternative services offered by the business sector, are empowered to run collective entrepreneurs to generate income and afford basic necessities. This integrated approach involves partnerships among government, business, local communities, non-governmental organizations, and sometimes international organizations, with financing coming from the business sector. He elaborated on basic steps of community partnering with businesses, starting with community needs assessments, visits to villages, exposure of villagers to new ideas and observation of successful business activities that lead to finalization of a development plan, prioritizing activities, setting time frames and identifying cooperating agencies. Subsequently, the plan is submitted to the company for consideration and funding. Finally, activities are implemented by the villagers with assistance from cooperating agencies including companies and the PDA. Keys to success include institutional development with a focus on community empowerment; economic development with income generation; environmental protection; health care and elderly support; and education, democracy and human rights.

23. “Infrastructure Development and Rural Development: Experiences from a Multi-Country Intervention”, by Amitava Mukherjee, Senior Economic Affairs Officer and Head of UN-Asian and Pacific Centre for Agricultural Engineering and Machinery in Beijing, China, provided an overview of a multi-country partnership project initiated by UNESCAP on rural development, based on public-private partnerships where communities, governments, the private sector and civil society organizations worked together for a common goal. He referred to initiatives on efficient energy production in Indonesia, water supply in Sri Lanka, health care in Thailand and biodiversity in Pakistan. These initiatives all involved specific institutional arms that were committed to organizing the communities to address the issues. UNESCAP’s role was to facilitate the process for effective realization of public-private partnerships.

24. “Linking Small Farmers to Markets” by Marlene Ramirez of AsiaDHRRA stressed improving market access to small producers and farmers by creating marketing intermediary mechanisms in order to reduce poverty in rural areas of Southeast Asia. Small producers often lack the knowledge they need to identify new products or buyers in order to compete; they need skills on processing, quality control, packaging, marketing and finance; and they need credit and capital to sustain their operations. Small producers and farmers need to be empowered to effectively engage in the market. She stressed the

need for market intermediation mechanisms in respective countries aimed at strengthening entrepreneurial capacities of NGOs and partner farmers' organizations by establishing and strengthening marketing links between small farmers' groups and market players and by policy collaboration. Consolidated production at an economic scale, production of better quality products, and regular supply and delivery of a specific commodity are the main requirements for linking small farmers to markets. National-level and regional-scale reform of markets to improve pro-poor incentives and remove or diminish anti-poor biases is also a challenge.

### *Country presentations*

25. In "Rural Development Models– Lessons and Experiences", Kota Tirupataiah, Special Commissioner of Rural Development, Government of Andhra Pradesh, India, stressed that an enabling environment is key for multi-state sectors to work coherently in addressing the multi-dimensional needs for rural development, with the basic strategy of linking resources to families and communities as area development through community-oriented activities, and community empowerment to sustain development initiatives absent support from government or other sources. The overall scope of rural development goes beyond the three topics of improving agricultural productivity, water use efficiency and rural livelihoods that are emphasized in this workshop. He outlined different models that emerged for rural development in India in the context of development needs in different regions, including the Green Revolution Model in Punjab and Uttar Pradesh, the Human Development Index Model in Kerala, the Agrarian Reforms Model in West Bengal and the Social Capital Model in Andhra Pradesh. He elaborated on the Social Capital Model, citing various institutional means, regulatory means, and accessibility to basic necessities and finances that help develop individual capital, social capital, natural capital, physical capital and financial capital.

26. "Agricultural Policy of Mongolia Enhancing Productivity of Agricultural Sector" by D. Bat-Erdene, Director of the Information and Monitoring Department of Ministry of Food, Agriculture and Light Industry, Mongolia, provided an overview of the food and agricultural sectors in the country, highlighting cultivated crop land use, state of agricultural production, labour forces and machinery used in the agricultural sector. A national programme initiative "Third Crop Rehabilitations Programme" has been introduced with the goal of increasing the areas of irrigation, intensifying development of crop production, and increasing harvested yield. The programme aims to ensure food safety, increase self reliance and eliminate import dependence. Although the country has vast potential for the improvement of agro-production, its development is constrained by poor infrastructure, lack of safety and quality control, limited storage and transportation facilities, inappropriate loan portfolios, low levels of education, and lack of improved seeds, fertilizers and pesticides.

*Outcomes*

27. Salient outcomes of presentations and discussion during Session 3 include the following points:

- It is imperative to forge a village development partnership with an integrated approach of involving government, business, communities, and non-governmental organizations, with international organizations playing a supportive role when needed.
- Successful small-scale community-based development activities rely on institutional development to empower communities, economic development, environmental protection, health care, elderly support, education, democracy and human rights.
- Small producers and farmers need to be empowered to effectively engage in markets. Their knowledge base should be strengthened to produce standard products for the market and to deal with marketing and finance. Access to credit and capital are also vital to sustain operations.
- A market intermediation mechanism should be in place to establish and strengthen marketing links between small farmers' groups and market players in respective countries. NGOs and farmer organizations can play a prime role in building this entrepreneurial capacity.
- There is a need to find ways to replicate the concept of developing village-level partnerships for strengthening rural livelihoods, with an integrated approach of involving multiple sectors.
- The role of civil society should be well recognized. A proper enabling environment is essential for multi-state sectors to work coherently in addressing multi-dimensional needs for rural development, with a basic strategy of linking resources to families and communities through community-oriented activities and empowering the community to sustain the development initiative.

**Session 4: Improving Land Use Planning and Management**

*Thematic presentations*

28. "Institutional and Policy Framework for Sustainable Land Use Planning and Management to Combat Land Degradation" by Yang Youlin, Asia Regional Coordination Unit of the UNCCD Secretariat, provided an overview of the global status of land degradation through different case studies, with emphasis on main causes of land degradation and consequences of desertification. He also provided a brief introduction on the strategic objectives of the UNCCD for 2008-2018, including improving the livelihoods of the affected populations, improving the productivity of affected ecosystems, generating global benefits, and mobilizing resources to support implementation of the Convention through building effective partnerships between national and international actors. He described the Institutional and Policy framework in Land Use Planning and Management

in China and Thailand, and concluded by stating that land and soil degradation are under-recognized threats to global well-being that is aggravated by climate change. Desertification is therefore a global issue that requires global action.

29. “Providing Access to Land: Challenges and Solutions” by Michael Taylor, Program Manager Global Policy, ILC, emphasised the importance of securing access to land for strengthening rural livelihoods. Most farmers are in general small-scale farmers and the greater the disparity in land holding, the greater the difficulty to achieve equity. He identified key ingredients for securing access to land as transparent and inclusive processes for land policy development, people-centred land policies, gender equity in the formulation and implementation of land policy, policies reflecting diverse tenure systems, redistributive reforms as an integral policy tool, innovative and accessible systems for the recognition of land rights, development of systems for monitoring land rights, and adequate response to new global contexts of trans-national land investments. He outlined urgent actions needed to develop a code of conduct for trans-national land investments, placing local land users in the centre of negotiations: carbon trading mechanisms must recognize the rights of local land users; guidelines should establish equitable community-investor partnerships; and local institutions should be strengthened.

30. “Adapting to Climate Change in Managing Land and other Natural Resources: Regional Experiences” by Salmah Binti Zakaria, Economic Affairs Officer, Water Security Section, UN-ESCAP, provided an overview of the salient outcomes of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Two challenges in addressing climate change were highlighted: more frequent extreme weather conditions of floods and droughts with severe impact to various sectors like agriculture, forestry, biodiversity, water resources, coastal and marine resources, energy and public health; and limited downscaling of global climate model inferences to appropriate finer grids so that better and more reliable analysis of climate change impacts can be done at regional and national levels with the aim to have more confidence in planning for adaptation strategies. The presentation referred to Assessment of Impacts and Adaptations to Climate Change in Multiple Regions and Sectors (AIACC) studies that focused on filling gaps in scientific knowledge and capacity following the third assessment report of the IPCC, and covered 24 regions and 46 countries with five projects in Asia, 11 in Africa and five in Latin America. These studies focused on identifying vulnerabilities and providing recommendations for adaptation. The high level of concern in water resources vulnerability was cited as collapse of water systems leading to severe and long-term water shortages; and water scarcity that retards progress on the Millennium Development Goals (MDGs) and threatens food security. The high level of concern in land vulnerability was cited as widespread desertification of land with irreversible changes to soil structure or nutrient status.

*Country presentations*

31. Davood Nikkami, Soil Conservation and Watershed Management Research Institute of Iran, provided an overview of the country's hydro-climatic conditions, water resources, agricultural land use and spatial planning. He highlighted problems of soil erosion, improper land use and management, land degradation, floods and drought, and outlined projects on land use planning, drought risk assessment, rainwater harvesting, and utilization of renewable sources of energy. Sectoral strategic plans, inter-sectoral planning and cooperation, training and extension services, new and appropriate technologies, international cooperation, national and international expertise, and international financial resources were discussed as important means of implementation.

32. The presentation entitled "Pakistan: Land Management and Poverty Reduction" by Abdul Qaddus Malik, Director of Agriculture, Islamabad, Pakistan, began with an overview of land utilization, areas under major crops, and crop production. Policies with inappropriate subsidies and limited land use planning, limited institutional capacity and coordination, insufficient financial resources, and socio-economic conditions like vulnerability to climate change and land tenure security were mentioned as barriers to sustainable land management. Various measures adopted to address issues related agriculture, land and water management included: controlling water logging and salinity through community involvement; integrated watershed management; arid area development programs; rehabilitation of degraded rangelands; and improving marketing infrastructure systems and encouraging joint ventures in agricultural production, processing and marketing. Future strategies for sustainable land management include development of additional storage capacities; improvement of water use efficiency; promotion of high efficiency irrigation systems and water conservation techniques; production and export of high value crops; promotion of contract farming and provision of credit facilities for agri-business; and increased investment in research and technology development.

*Outcomes*

33. Salient outcomes of presentations and discussion during Session 4 are summarized below:

- Desertification is a global issue that requires global action. Land and soil degradation are under-recognized threats to global well-being. Negative consequences of poor water and land management are aggravated by climate change.
- There is a need for transparent, inclusive processes for land policy development. The revision or formulation of national land policies must allow for the participation of the full spectrum of land users. Inclusive processes build the consensus and political will upon which successful implementation of land policy depends.

- Land policies should support the diverse interests of land users, with special attention to the needs of the most vulnerable. Vulnerable groups with weak land rights or insufficient access to land include users of common-pool resources, tenant farmers, farm workers and people affected by conflict.
- Land and water resources management need to be integrated in adaptation to climate change. Mitigation efforts targeted in reducing emissions, and adaptation to reduce vulnerabilities and strengthening coping capacities should be integrated in the overall development process.

### **Round Table 2: Climate Change and Rural Development**

34. The moderator opened the round table session by inviting participants to consider how mitigation and adaptation are related, and how different research institutions and agencies are addressing these issues; to discuss how policies that are put in practice for climate change mitigation have consequences for rural livelihoods; and to consider how adapting to extreme events poses immediate challenges compared to long-term gradual changes. Outcomes of this session are listed as follows:

- Climate change will further stress and exacerbate rural development conditions. Mitigation needs to be pro-poor, such as providing incentives for land and soil improvement through carbon sequestration. For adaptation, an approach that is synergetic with mitigation efforts is needed.
- Climate change impacts should be assessed at the local level and within specific country context so that vulnerabilities can be assessed and adaptation strategies formulated. It is necessary to design actions and identify who will act at different levels. Urgent actions are needed for additional investments to increase the coping capacity of the community and actors at different levels.
- Climate change is a sustainable development challenge with a prominent equity dimension. How can societies that use enormous amounts of energy reduce their fossil fuel footprint while fostering the economic growth of developing societies?
- Building the resilience of societies to cope with the impacts of climate requires knowledge sharing and capacity building within communities. Designing management principles and policies that are flexible and backed with adequate resources will enable communities to adapt their livelihoods.
- Local land tenure systems and food production systems need to accommodate the diversity of land use and access arrangements. They often allow for the recognition of multiple and overlapping rights. New land policies should recognize and protect the diversity of informal and customary tenure systems that exist.

## Session 5: Scaling-up of Good Practices in Agriculture and Resources Management

### *Thematic presentations*

35. In “Agricultural Research: Regional Challenges and Opportunities”, Randy Stringer of University of Adelaide, Australia, stressed the diverse and multiple roles of agriculture in respect to productivity, poverty reduction, environment services, social well-being and public health. The common driving forces shaping the agricultural research agenda include income growth and urbanization; global lifestyles; women in the urban wage workforce; a carbon-constrained economy; the food, fuel and financial crises; diet, health and where we buy food; and biotechnologies. He advocated attention to the role of agriculture in poverty alleviation, noting that research should support agriculture as a positive economic, social and environmental force. There should be a greater propensity for researchers to collaborate, as well as more focus on strategic positioning, technologies, scaling-up best practices, how to use research, and including producers in research.

36. “Scaling-up Good Practices: Payment for Environmental Services for Water Regulation and Soil Conservation” by Hitomi Rankine, UNESCAP, dealt with the concept of payment for environmental services (PES) in the context of climate change, with its increased frequency and severity of floods and droughts, and risk of reduced ecosystem services along with increased demand for ecosystem services. Basic payment for ecosystem services was indicated as payment to land managers for sustainable land management practices that yield ecosystem service benefits. Farmers could be paid for conserving water, enhancing water quality, conserving soil, enhancing biodiversity and sequestering carbon. Considering the opportunity cost is very important when implementing PES schemes and the challenge is how to scale-up the scattered examples of payments for ecosystem services to a viable approach of bringing in the PES concept at the national or regional level. To achieve the scaling-up of these concepts calls for a rethinking of natural resources management giving due regard to environmental services and proper policy action.

37. “Scaling-up of Good Practices in Agriculture and Resources Management: Experiences of Processes in Asia-Pacific” by Le-Huu Ti of UNESCAP in cooperation with Thierry Facon of FAO, conveyed three important messages: scaling-up of good practices is a process, which must be integrated into socio-economic development and built on strategic elements of national development goals; integration of scaling-up processes must be supported by effective monitoring systems; and replication of good practices must be supported by a knowledge hub. A multi-level approach combining policy and practice in order to address the diversity and complexity in agricultural practices and water management must be developed, and centres of excellence in different areas at different levels need to be identified. Interventions for improving natural resources management include increasing capacity building efforts that introduce new concepts and knowledge and provide people with appraisal methods; introducing practical and adaptable tools at the policy and strategy level; adopting benchmarking to assess the system’s performance and assist in decision-making process; and emphasizing community participation for

diffusion and synthesis of knowledge. A number of regional initiatives following these ideas have been undertaken in different countries, under the theme of a regional programme to support action at all levels through knowledge sharing, capacity building and implementation.

#### *Outcomes*

38. Salient outcomes of presentations and discussion during Session 5 are summarized below:

- Payment for environmental services, particularly from agricultural and rural perspectives should be considered in the overall context of poverty alleviation associated with other factors like trade-distorting subsidies.
- For effective land and water management, efforts need to be directed to bridging capacity-building gaps at all levels, striking a strategic balance between investments in all scales of irrigation systems and rain-fed agriculture, and with a particular focus on poverty alleviation.
- Promotion of scaling-up of good practices in agriculture and resources management is advocated, considering integration of multi-dimensional factors in national contexts through proper policies and strategic planning.
- Scaling-up of any process requires appropriate institutional strengthening; facilitation within the national context; and decentralized governance for effective adaptation of good practices at the national or regional level.
- Scaling-up can also be achieved through market systems that enable the dissemination of good practices; however, the possibilities and limitations of markets in disseminating pro-poor approaches should be considered. Civil society efforts to scale-up good practices can be highly successful.

#### **Session 6: Way Forward and Closing Session**

##### *Way Forward: Summary of Recommendations*

39. The draft *Summary of Recommendations* was reviewed and discussed; necessary changes and additions were incorporated, including inputs from major groups; and the final adopted version is included in document E/CN.17/2009/13.

##### *Closing Remarks*

40. The Director of the Division for Sustainable Development, UN Department of Economic and Social Affairs, Mr. Tariq Banuri, praised panellists for their eloquent presentations, which brought challenges and opportunities to light and proposed good practices in agricultural land and water management. He noted constructive discussions during the workshop that enriched the prevailing knowledge and provided guidance on the way forward for effective and sustainable land and water management, and thanked all the delegates for their active participation and contribution. He also stressed two important

points. First, that the global policy process should be seen as a means of facilitating national actions as well as supporting institutional development and capacity building at national level. The Commission on Sustainable Development is a central forum for global policy formulation and provides the only platform where an integrated approach to economic development, environmental protection and social equity is considered. This global policy forum can play a very strong and constructive role in assisting and facilitating Governments to take necessary action, providing guidance and support for national policy formulation and helping to create an enabling environment in which major groups are also able to take action to further the agenda on sustainable development. Secondly, with the ensuing occurrence of a number of different crises in the horizon, there is a need to maintain the view of sustainable development at all levels. The energy crisis, food crisis, economic and financial crisis need to be considered in an integrated manner in order to provide sustainable solutions to tackle these challenges.

41. Her Excellency, Ms. Gerda Verburg, Minister of Agriculture, Nature and Food Quality of the Kingdom of the Netherlands, and Chairperson of the 17th Session of the Commission on Sustainable Development, reiterated in her closing statement the challenging task we are facing to foster sustainable agricultural land and water management in order to ensure food security and poverty eradication. Even though governments made the commitment to reduce by half the number of people living in poverty by 2015, the achievement of this first Millennium Development Goal is further away than ever. She cited a number of reasons for the high food prices, such as neglecting investments in agriculture, less available farm land, droughts, growing demand for biofuels and changing consumption patterns. A five-track approach was recommended that will help to address the issues and challenges faced by agricultural development, water management and rural livelihoods. The first track calls for substantial investment in sustainable agriculture for capacity building in the area of land and water management, sharing knowledge and technology transfer. The second is an enabling environment, emphasizing community participation in the decision-making process, attracting private investment, considering tenure rights and ensuring integrated land and water management at all levels. The third is to develop a safe and sustainable food chain, from production, processing and marketing to consumers. The fourth track aims at improving market access that supports the development of local and regional markets. The fifth track focuses on food security and emergency food aid, by means of enhanced safety nets for the most vulnerable people and increased lending possibilities, including provision of micro-credit schemes. In closing, she reminded participants of the important role of governance, with the emphasis that poverty eradication, food security and sustainable resources management should be addressed in a coherent manner.