

STRATEGY FOR CAPACITY DEVELOPMENT TO BALANCE WATER NEEDS FOR FOOD AND ECOSYSTEMS

Final report Bridging Research and Capacity Development
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ABSTRACT

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1. Introduction

The Ministry of LNV financially supports capacity building activities to support balancing water needs for food and ecosystems as part of an integrated approach to water resources management. LNV asked for an analysis of the content and target groups of the LNV sponsored capacity development activities performed by WUR to assess to which extent these activities support the policy objectives of the Ministry in this field. The aim of this analysis is to elaborate a strategy to better mainstream the capacity building activities of WUR in the field of Water for Food and Ecosystems with the policy objectives of the Ministry of LNV as far as these are funded by LNV.

This document firstly describes the niche of Wageningen UR and in particular capacity development and research in relation to Integrated Water Resource Management (Chapter 2). Chapter 3 presents an analysis of the policy objectives relevant for achieving a balance between water resources management, food production and biodiversity protection.

Since no single document outlining the LNV policies in this field exists the recommendation of the LNV-FAO Conference on Water for Food and Ecosystems (January 31-February 5, 2005) and the policy recommendations summarised in the 'vision paper' of the 17th session of the Commission on Sustainable Development held May 2009 were used during the analysis assuming that these recommendations reflect the policies of the Ministry.

Wageningen UR capacity development in the field of integrated water resources management embraces not only the training activities (short term courses) but also capacity development aspects included in various projects. Subsequently an assessment was made on how relevant these activities are for achieving the LNV policy objectives. In view of providing a comprehensive analysis an overview of the capacity building activities of Wageningen International and the IRWM Team of Alterra (Centre for Climate and Water) in the field of IWRM was compiled and assessed on their relevance for meeting the challenges of the FAO/LNV Conference (See Annex 1).

Based on the analysis of the overview provided in Annex 1 and an analysis of the capacity building recommendations from the 17th Session of the Commission on Sustainable Development (May 2009) and FAO Conference a strategy for capacity development activities of Wageningen UR that fosters achieving the goals of the two Conferences is presented in chapter 4.

2. Research and Capacity Development

Wageningen University and Research Centre (Wageningen UR) provides education and generates knowledge in the field of life sciences and natural resources and aims to make a real contribution to our quality of life. Quality of life means both an adequate supply of safe and healthy food and drinks, on the one hand, and the chance to live, work and play in a balanced ecosystem with a large variety of plants and animals on the other hand. Issues within the Wageningen domain are almost never exclusively natural, technical, economic or social in nature. There are always multiple approaches and possible solutions – often synergetic ones. Wageningen UR therefore fosters the unique interaction between the natural and social sciences. Both sets of disciplines are part of our coherent package of research, education and services. This integrated approach offers additional possibilities for the effective application of expertise in policy or in practice.

Wageningen UR is making substantive contributions to the international sustainable development agenda particular in relation to food systems, agricultural markets and trade, sustainable natural resources management and rural development. This requires working effectively at the interface of research policy and practice, taking an interdisciplinary and holistic systems approach to problems

and linking research with capacity development. Wageningen UR recognizes that knowledge generation and technological innovation in itself is not sufficient. Individuals, organizations and institutions must also have the capacity to actually make change happen. For example strengthening good governance within a strategic water management framework entails institutional capacity development to empower and equip organizations with appropriate knowledge, tools and skills to develop and implement appropriate water policies.

Capacity development is recognized as a key pillar in achieving sustainable development and the Millennium Development Goals. All international Conventions such as the Ramsar Convention, either directly or indirectly focus on the need for capacity development at individual, organisational and institutional levels. Agenda 21 outlines the critical need for capacity development, which has subsequently been a key element of the World Summit on Sustainable Development agenda. During the WSSD the need for innovative approaches aiming at the sustainable use of water resources was also underlined. Since then countries have embarked on the development of water strategies through dialogues with a variety of stakeholders to enable their participation in the decision making processes and management of water resources. There is however a need for capacity development to guide and facilitate such participatory processes of consultation, interactive planning and decision-making on water use strategies, policies, institutions and practices to achieve more sustainable food production, equitable access to water and to mitigate degradation of ecosystems.

Wageningen UR recognizes this and focuses its capacity development efforts therefore on building the knowledge and learning capacities of individuals, organizations and multi-stakeholder groups to innovate and bring about desirable change. Organisational and institutional change processes and learning are at the heart of capacity development. This requires combining and integrating disciplinary knowledge and expertise with a diverse range of process competencies. Wageningen UR takes on a holistic approach to water governance and contributes to institutional capacity development through professional partnerships, training programmes, workshops, projects and other knowledge exchange schemes.

It is known to Wageningen UR that practitioners and policy makers outside the formal research domain generate much valuable knowledge. The implication is that the effectiveness of Wageningen UR in contributing to the global water agenda hinges to a large degree not just on its own capacity to produce quality science and knowledge support services but on its ability to support partners with whom it works to enhance their capacities.

3. Analysis of relevant international water policy documents

The Conference on Water for Food and Ecosystem and the 17th session of the Commission on Sustainable Development both included thematic group discussions around a number of topics and formulated recommendations and suggested actions under each theme. The Conference on Water for Food and Ecosystem included a Ministerial Round Table in which ministers responsible for agriculture, environment or water management discussed the outcomes of the Conference. The Commission on Sustainable Development included a High-level Segment and Ministerial Roundtables that focused on 3 themes in which water in relation to agriculture was one of the cross-cutting topics receiving special attention. The results of the Ministerial Roundtables were summarized in a Shared Vision Statement.

In this chapter the themes, key outputs and recommendations of the Conference on Water for Food and Ecosystems and the 17th session of the Commission on Sustainable Development as far as relevant for capacity development are summarised.

3.1 FAO/LNV Conference on Water for Food and Ecosystem

The Conference on Water for Food and Ecosystem was held as a joint initiative of the Food and Agriculture Organisation (FAO) and the Netherlands' Government from 31 January to 5 February, 2005. The Conference was attended by 26 Ministers and more than 600 delegates from 140 countries, as well as some 40 international organizations, non-governmental organizations and private sector organizations. It brought together high-level policy makers from different sectors and encouraged this broad group of participants to implement a comprehensive list of proposals at local and national levels, and the forging of national and international partnerships in water for food and ecosystems. In this way, the Conference directly contributed to the implementation of international water-related policies and programmes adopted by the WSSD, FAO, the Convention on Biological Diversity (CBD) and the Ramsar Convention on Wetlands.

The central focus of the Conference was on promoting sustainable management of water for food and ecosystems, based on a stakeholder-centred approach that facilitates sound, efficient and equitable decision-making in the assessment, allocation and regulation of water resources, in terms of both quantity and quality. By identifying best practices and generic lessons the FAO/Netherlands Conference Water for Food and Ecosystems aimed to facilitate the implementation of the existing international commitments on sustainable water use in relation to food and ecosystems.

The objective of the Conference

to identify and discuss the concrete progress being made in the implementation of sustainable water management for food and ecosystems.

The conference focused on the following three themes:

1. *Fostering implementation: Know-how for Action.*

Increased knowledge, reliable information and greater awareness, will help improve the capacity of stakeholders and ensure that sound decisions are made, mostly at local level, on inputs (water quantity and quality), outputs and impacts. Through focussing on best practices, this theme can contribute, in a practical way, to implementing commitments to effectively balance water for livelihoods and resilient ecosystems.

2. *A New Economy for Water for Food and Ecosystems.*

Inputs, services and impacts must be analysed in terms of their social, economic, and environmental values for each stakeholder. The goal is to help all involved **stakeholders** make well informed, transparent decisions on the allocation of natural resources, and ensure that their decisions are consistent with higher level (national/cross boundary) priorities.

3. *An Enabling Environment for Implementation.*

Promising institutional and managerial arrangements must be adopted at local and national/cross boundary levels to enable sustainable water management for food and ecosystems, equitable representation of all stakeholders in the decision making process, and consistency at all levels.

Thematic working groups

Under each Theme, local experiences, cases and success stories were shared and discussed in Working Groups. Each Working Group came up with a synthesis of their discussions, conclusions and recommendations. A summary of the key outcomes of the Conference can be found in the box below. The outcomes that are relevant for the capacity building activities of Wageningen UR in balancing water needs for food and ecosystems are listed first in italic.

In summary the **key outcomes** of the Conference were:

- Capacity building and building public-private partnerships are important elements in improving coordinated management of water for food and ecosystems at the basin and community levels.
- Awareness raising, at various levels, about the linkages between water, food and ecosystems is important
- Development of more in-depth knowledge of the causal links between water, food and ecosystems is needed.
- Making the available knowledge accessible to a wider group of actors, and feeding it into decision and policy making processes so as to lead to better informed decisions is important
- Moving towards a true valuation of water through a mechanism that goes beyond its economic value to include social, equity and environmental values is needed.
- The general process to move towards managing water resources in ways that reflect their multiple values consists of three general steps –awareness raising, valuing water resources and using economic mechanisms and can be adopted by countries as they see fit, depending on their current situation and needs.
- Harmonization of national policies and institutions, adequate decentralization measures and appropriate legislation at various levels is needed.
- An equitable water use should be achieved between agriculture and ecosystems to ensure an adequate access to water, in particular for the poor.

Under each theme concrete actions to foster the implementation of international commitments related to water, food and ecosystems were produced. These specific actions identified to enable an integrated management of water for food and ecosystems can be found in the In the Conference report (Report of the conference on Water for Food and ecosystems, 2005) and are listed in Annex 1. Implementation of these actions by the countries and organisations present at the Conference will contribute towards achieving the Millennium Development Goals (MDGs), especially MDGs 1, 7, and 8.

Annex 1 presents not only an overview of all challenges and themes of the FAO Conference but also how the capacity building activities performed by Wageningen UR have addressed these challenges.

Ministerial Round Table

The Conference included a Ministerial Round Table which reiterated that water and ecosystems are of critical importance for our planet and as the bearer of life. The Ministers were strongly dedicated to promote further actions to achieve sustainable development, alleviate poverty and combat hunger. The Round Table stated that the Millennium Development Goals and the goals from the World Summit on Sustainable Development (WSSD) must be reached and the pace of implementation accelerated, if the targets for 2010 are to be met. The Ministerial Round Table concentrated on how to promote implementation on the ground. The message of the ministers was ***to Integrate, to Cooperate and to Invest***. The Ministerial Round Table highlighted the need to support the implementation of programmes and activities already in place all over the world for rural development and integrated water management and provided guidance to the implementation of the themes of the Conference.

The Round Table emphasised that the results of the Conference should be incorporated in international programmes. As such, the Ministerial Round Table sent, with the results of the Conference, a clear signal to the Commission on Sustainable Development on water for food and ecosystems. Member countries requested FAO to come forward with a concrete plan of action on how the FAO is going to implement the recommendations and concrete proposals for action.

3.2 The Commission on Sustainable Development

The Commission on Sustainable Development meets annually in two-year "Implementation Cycles" with each cycle focusing on one thematic cluster alongside cross-sectoral issues. Each cycle is comprised of a Review Year and a Policy Year.

Delegates to the 17th session of the UN Commission on Sustainable Development (CSD 17), which convened from 4-15 May 2009, at UN Headquarters in New York, focused on the thematic cluster of 1) agriculture, 2) rural development, 3) land, 4) drought, 5) desertification and 6) Africa. In addition to negotiating policy options related to six thematic cluster of issues, CSD 17 delegates also engaged in dialogues with Major Groups and the Policy Research Community.

The High-level Segment and Ministerial Roundtables focused on the food crisis, a sustainable green revolution in Africa and integrated management of land and water resources for sustainable agriculture and rural development. The results from the Ministerial Roundtables were summarized in a Shared Vision Statement which is annexed to the CSD 17 report.

First in paragraph 2.2.1 the thematic cluster recommendations and practical measures to expedite their implementation are discussed. The results of the Round Tables summarised in the Vision Statement can be found in 2.2.2.

Thematic Cluster discussion

Water in relation to agriculture was one of the cross-cutting themes of the CSD 17 and received special attention in all 6 thematic clusters mentioned above. In this report only the actions recommended and adopted by CSD 17 to achieve sustainability of the themes in relation to integrated management of land and water resources and capacity development have been considered. They are particularly important when trying to balance water needs for food and ecosystems which is the main goal of the capacity development strategy of the Wageningen UR water programme (see Chapter XX). In line with the objectives of this paper, the analysis will help to identify what areas would be most relevant for Wageningen UR to support institutional and organizational change processes through capacity development. All other actions and recommendations can be found in the CSD 17 report (2009).

Agriculture

In the past few years, agriculture has risen once more to the top of national and international policy agendas. Agriculture lies at the centre of sustainable development. It plays a crucial role in addressing the food security needs of a growing global population and contributing to the progressive realization of the right to adequate food and is inextricably linked to poverty eradication and attainment of the internationally agreed development goals, including the Millennium Development Goals.

Practical measures to achieve this in relation to capacity development and integrated management of land and water resources for sustainable agriculture and rural development are:

- *Sustainable soil, land, livestock, forest, biodiversity and water management practices, and resilient crops are essential*
- *International, regional and national efforts to strengthen the capacity of developing countries to enhance agricultural productivity and to promote sustainable practices in pre-harvest and postharvest agricultural activities are urgently needed*

One of the actions identified to create a strong enabling environment for sustainable agriculture are:

- *Provide increased technical assistance to developing countries to strengthen national innovation capacity, training and extension services in sustainable agriculture, fish, livestock and integrated crop-forest and crop-livestock production systems*

- *Support the capacity of developing countries to rehabilitate and develop rural and agricultural infrastructure sectors*

Rural Development

The achievement of the Millennium Development Goals is at the centre of sustainable development. Sustainable rural development is vital to the economic, social and environmental viability of nations. It is essential for poverty eradication since global poverty is overwhelmingly rural. A healthy and dynamic agricultural sector is an important foundation of rural development, generating strong linkages to other economic sectors. Rural livelihoods are enhanced through effective participation of rural people and rural communities in the management of their own social, economic and environmental objectives by empowering people in rural areas, particularly women and youth, including through organizations such as local cooperatives and by applying the bottom-up approach. Rural communities in developing countries are still faced with challenges related to access to basic services, economic opportunities and some degree of incoherence with regard to planning related to rural-urban divide. Investments in environmental protection, rural infrastructure and in rural health and education are critical to sustainable rural development and can enhance national well-being. The success of sustainable rural development depends on, inter alia, developing and implementing comprehensive strategies for dealing with climate change, drought, desertification and natural disaster.

Actions needed to build social capital and resilience in rural communities are:

- *Promote equitable access to land, water, financial resources and technologies by women, indigenous peoples and other vulnerable groups;*
- *Support training and capacity-building of rural communities to effectively implement adaptation programmes to climate change at the local level;*
- *Foster and strengthen capacities of rural communities for self-organization for building social capital, taking into account national legislation;*

Practical measures to strengthen the human capacities of rural people in relation to the Wageningen UR water programme include:

- *Encourage rural communities' participation in decision making, promote rural communities' empowerment and rural leadership;*
- *Improve access by rural people and communities to information, education, extension services and learning resources, knowledge and training to support sustainable development planning and decision-making;*

Actions to ensure environmental sustainability in rural areas include:

- *Encourage the use of land resources in a sustainable manner to prevent land degradation that is caused by unsustainable exploitation of land resources;*
- *Encourage the use of environmentally friendly practices;*
- *Promote sustainable natural resources use and management, including ecosystem conservation through community-based programmes;*

Land

Land plays a crucial role for achieving poverty eradication, food security and sustainable development. Sustainable land management provides multiple benefits, such as sustaining agricultural productivity and food security and enhanced living conditions for local populations, providing ecosystem services, sequestering carbon and contributing to the regulation of climate.

The CSD calls for promoting policies to manage water and land resources in an integrated manner, through:

- *Promoting integrated land and water resource management in addressing land degradation, water scarcity and adapting to impacts of climate change;*
- *Promoting efficient, effective and sustainable use of water resources, including water diversification by exploring the sustainable use of groundwater and effluent waste, sustainable*

- *Strengthening the coordination and cooperation among authorities responsible for managing water and land resources;*
- *Improving the efficiency of irrigation and water management practices, such as the use of rainfall harvesting, so as to help to address water shortages;*
- *Addressing the threat of coastal erosion and land losses caused by sea-level rise, in particular in small island developing States and low-lying coastal States and areas, through land-use planning and climate change adaptation programmes;*
- *Addressing the problems, in particular in small island developing States, of saltwater intrusion into freshwater supplies and agricultural land;*

Measures to enhance capacity-building, technology transfer and financing include:

- *Promote and scale up the development, transfer, as mutually agreed, dissemination and adoption, as appropriate, of safe and science-based practices, products and technologies, including advanced technologies and corresponding know-how, that enhance the sustainable use of land resources, particularly for developing countries taking into account local conditions;*
- *Support countries' efforts, particularly in developing countries, to enhance the scientific understanding of land resources systems through strengthened technological capacity, including, as appropriate, support for testing research findings through pilot projects;*
- *Further develop and improve human resources and capacities, particularly in developing countries, for sustainable land management through education and training activities.*

Drought

Combating drought is necessary to achieving sustainable development goals, including the maintenance of ecosystem services, and improving the livelihoods of millions of people living in drought-prone regions. The effects of climate change heighten the risk of droughts and drought severity and increase the need for effective drought management and disaster risk reduction. Drought must be addressed in an integrated fashion with the other themes of the current Commission on Sustainable Development cycle, considering social, economic and environmental aspects. Strategies for drought management, including contingency planning should be incorporated into sustainable agricultural practices, soil conservation, crop diversification and integrated water resources management and combating desertification, taking into account the legal framework and mandate of the United Nations Convention to Combat Desertification²⁸ and its role in mitigating the effects of drought.

Actions needed to create a robust enabling environment for drought preparedness and mitigation:

- *Highlight the importance of integrated water resources management as called for in the resolution of the Commission at its thirteenth session;*
- *Promote North-South, South-South and triangular cooperation and partnering for capacity-building and improving effectiveness in planning, monitoring and implementation of drought management plans, including data gathering, information management, modelling, and forecasting;*

Practical measures to strengthen the knowledge base and information sharing on drought, water stress and drought risk management include:

- *Promoting the exchange of information, experiences and lessons learned in relation to drought risk management and reduction and increase public awareness about traditional and adaptable practices;*
- *Increasing knowledge-sharing and information on weather forecasts and climatic conditions among relevant key stakeholders, and increase the capacity to use such information before, during and after drought events*

CSD17 also recommended actions to enhance capacity-building, technology transfer and financing. In that context the action relevant to Wageningen UR's work is:

- *Promote access to affordable, appropriate and necessary technology, and provide corresponding capacity-building to enable drought forecasting and planning, development of user-based drought-related management triggers across time scales, and sustainable management, including efficient use of scarce resources and arable land, as mutually agreed;*

Desertification

Desertification and land degradation in arid, semi-arid and dry sub-humid areas are global problems that require a global response through concerted efforts, as recognized in the United Nations Convention to Combat Desertification. Desertification and land degradation continue to adversely affect agricultural activities, rural and urban development, land use, water resources and efforts to eradicate poverty and hunger and promote health and well-being. Combating desertification and land degradation and mitigating the effect of droughts require policies that, inter alia, link land use, food security and livelihoods to the goals of sustainable development, taking into account the adverse impacts of climate change and land use on land degradation, biodiversity losses and desertification and on the achievement of the Millennium Development Goals.

Practical measures to combat land degradation and desertification in relation to water include:

- *Promote sustainable land use and livelihoods, enhanced soil productivity, water use efficiency and greater tenure security for people living in the affected areas, including pastoralists;*
- *Promote sustainable water management and efficient irrigation, water conservation and utilization of alternative water sources, including flood water and subsurface flows;*
- *Support appropriate traditional practices and local knowledge concerning land use, water management and agricultural activities;*
- *Encourage land users to invest in soil and water conservation, including through land tenure security and access rights to land and natural resources for the rural population, particularly women, indigenous people and other vulnerable groups;*

Actions are also needed to enhance capacity-building, transfer technology and financing:

- *Support the improvement of existing and the establishment of new centres of excellence and monitoring in developing countries to combat desertification and promote capacity-building to adopt and implement, inter alia, integrated techniques for the conservation of natural resources and their sustainable use, and invite regional and international programmes and funds as well as donors to provide support to affected countries in their endeavours to combat desertification;*
- *Support the establishment of and strengthen existing disaster management capacities at all levels, including information and early warning systems that allow effective management of the risks associated with drought, desertification, land degradation and the adverse impacts of climate change;*
- *Support developing countries in the development, deployment and diffusion of technologies on mutually agreed terms, including the sharing and scaling up of best practices and lessons learned in approaches undertaken at all levels to combat desertification such as sustainable agricultural practices, and conservation and rehabilitation of vegetation cover;*
- *Build the capacity of affected communities to address the impacts of desertification by promoting participation, including through participatory approaches that involve civil society, local communities, indigenous people and other major groups, in particular women in decision-making and policy formulation;*
- *Invest in sustainable land management, including land-use planning, sustainable management of forests and other natural resources, as it relates to combating desertification and land degradation in arid, semi-arid and dry sub-humid areas;*

Africa

Strong economic performance in Africa is needed to ensure an enabling environment for sustainable development. African countries have taken the leadership in addressing sustainable development challenges, including challenges for sustainable agricultural development, and charting the way forward at the local, national, regional and continental levels. Nonetheless,

average gross domestic product growth remains below the minimum target of seven per cent set by the Partnership and has often occurred in sectors with little impact on employment and income for the majority. Africa still faces challenges in meeting the Millennium Development Goals targets, which are not on track, inter alia, as a result of poorly developed infrastructure, the lack of institutional capacity, and the continuing needs for investment in agriculture. Africa needs a green revolution to help to boost agricultural productivity, food production and national and regional food security in a way which supports ecosystem functions. This would provide a strong foundation for addressing rural poverty, land degradation, drought and desertification. The ongoing multiple global crises pose a serious challenge to the sustainable development prospects of Africa, including sustainable agricultural development. Actions are therefore required at the local, national, regional and global levels to support the ecologically and socially sustainable use of natural resources, the diversification of African economies as well as an African green revolution and the economic, social and environmental dimension of Africa's sustainable development.

To revitalize agriculture as a basis for sustainable rural development actions to be taken in relation to water, capacity development and promotion of an enabling environment suggested are:

- *Ensure the equitable and sustainable use, as well as promote integrated management and development, of national and shared water resources in Africa, in accordance with existing international agreements*
- *Facilitate and support the strengthening of commercial and technical capacity of farmer organizations, including through extension services architecture;*
- *Support and strengthen Governments' capacities to manage their resources by strengthening and adhering to their policies and legislations;*
- *Encourage and support African regional economic organizations to play a key role within the context of the ongoing multiple global crises. Regarding food security, underline the key role that regional economic organizations should play in terms of: support to and coordination of national strategies and policies for agricultural development and food security; improvement of the institutional environment for the agricultural economy; and sustainable management of trans-boundary water resources, in accordance with international agreements;*

3.3 CSD Vision statement

During the High Level Segment of the 17th Session of the Commission on Sustainable Development, Ministers, other heads of delegations, representatives of Major Groups, representatives of United Nations bodies, shared their vision on the topics of fundamental importance to our economies, societies and to the future of sustainable development: agriculture, rural development, land, drought, desertification and Africa. In roundtables three themes were discussed: 1) Responding to the food crisis through sustainable development, 2) Realizing a sustainable green revolution in Africa and 3) Integrated management of land and water resources for sustainable agriculture and rural development. The discussions were summarized in a vision statement.

The vision statement highlights deep interconnections among agriculture, rural development, land, drought, desertification, and Africa, and their close relationship to eradicating hunger and extreme poverty and addressing climate change. The vision paper emphasises the close link between agriculture and water and recognizes the many competing claims on water.

The CSD vision paper emphasises:

- Need for an integrated response to multiple challenges;
- Urgency of appropriate national and international action and greater cooperation to bring about a paradigm shift and to realize a truly sustainable green revolution;
- Need to put sustainable development of agriculture on the international agenda and developing countries at the center of the agricultural and rural revival;
- Need for political will, including investments in agriculture, a supportive enabling environment, fair prices for produce, fuller integration of markets and greater international market access.

The multiple challenges the world is facing in terms of climate change, degradation of ecosystems, the food insecurity, the financial meltdown and economic recession require an integrated response that ensures that short term emergencies are addressed while developing long term strategies within the framework of sustainable development. The Ministers underlined the central role agriculture plays in sustainable development. It was emphasized that sustainable agriculture should be put on the international agenda again to lay the foundation for bio-based economies of the future.

Concerning the interactive round discussion of the Commission's High-Level Segment of the Seventeenth Session of the Commission on Sustainable Development, the outputs of theme 3, integrated management of land and water resources for sustainable agriculture and rural development, will be the focus of this analysis.

The High Level Segment recognises that agricultural water productivity has to be increased significantly and potentials of adequate and efficient water management should be explored through changes in policy and production techniques. Integrated management of land and water resources is seen as crucial for sustainable rural development and for ensuring food security for growing population. Sustainable land and water management plays a crucial role for achieving poverty eradication, food security and sustainable development. It provides multiple benefits, such as sustaining agricultural productivity and food security, enhancing living condition for local populations, generating ecosystem services and sequestering carbon.

Promoting sustainable land and water management will require effective land administration, equitable land access, integrated planning, broad participation and improved dissemination of knowledge and good practices. Small-island developing States are facing specific challenges in addressing sustainable land and water management in the face of climate change.

In response to the decreasing availability of water in many regions, there is a need for better water management, protecting ground and surface waters from pollution, enhancing availability of scarce water resources including through conservation and efficiency gains, and considering the ecological impacts of water use and pollution.

A green economy is the way out of the current food crisis -- a green economy at whose heart is a green revolution

Vision paper CSD 17, 2009

Achieving water productivity gains in rain-fed agriculture is especially urgent. Access to safe drinking water and sanitation services in rural areas, where coverage remains low, is crucial for preventing disease, promoting rural development and ensuring the attainment of the Millennium Development Goals.

In summary, the highlights of the discussion of theme 3 were the following:

- Integrated management of land and water resources is crucial for sustainable rural development and for ensuring food security for a growing population.
- Successful integrated land and water management depends on secure land tenure arrangements, broad participation and improved dissemination of knowledge and good practices.
- An institutional framework coordinating across key ministries for effective water management, given water's importance for human consumption as well as agriculture, energy, transportation and preserving biodiversity is needed.
- In response to the decreasing availability of water there is a need for:
 - better water management
 - protecting ground and surface waters from pollution
 - enhancing availability of scarce water resources, including through conservation and efficiency gains, and
 - considering the ecological impacts of water use and pollution
- Effective water management is essential for sustainable agriculture, both to produce food crops and also for the sustainable production of biofuels and energy.
- Sharing of knowledge, experience and technologies and for promoting capacity-building for integrated land and water management is needed.
- Participation of women in decision making processes, as the managers of water and land resources, is crucial to ensure the sustainable use of land and water resources.
- Flexibility is important when designing rural development programmes to tailor them to specific needs and local contexts and adapt them over time.
- Local communities should participate in the design of rural development programmes in order to ensure ownership and sustainability.
- Climate change is affecting water and land resources, and there is a need to implement policies to strengthen resilience and adaptation.
- The potential for sound land-use practices to store carbon in soils was highlighted, as was the possibility that in future poor farmers might receive financial benefits from such practices as part of global efforts to tackle climate change. If so, this would bring together poverty eradication, economic development and climate change objectives.

Source CSD report (page 63).

4. Follow up to the FAO-LNV Conference recommendations

It was expected that insights and experiences shared at the FAO-LNV Conference would find their application in improved actions aimed at implementation at the national, river-basin and local level and reinforce and establish (inter)national Partnerships in Water for Food and Ecosystems.

As such, the Conference was expected to directly contribute to the further development and implementation of related policies and programmes within the framework of the WSSD Plan of Implementation, the FAO, CBD, Ramsar, and other international fora.

It was stated that implementing the agreements reached during the Conference would require actions from all participating countries and organizations and FAO, as one of the Conference's co-organizers, would endeavour to assist countries in this process by:

“playing a key role through its normative work to support the formulation of policy and methodology development at the national level; addressing issues of valuation of water resources and the need for national capacity building; strengthening its work on transboundary water management and field work at watershed level; raising awareness about water scarcity (with

regard to both quantity and quality of water resources); working towards a participatory method for water valuation; enhancing its already extensive database system by including best practices. “

Although the Conference report has a non-binding status, it was recognised that its adoption by the Conference participants made the implementation of the actions in the report a joint responsibility of all concerned: FAO and its members, participating countries, NGOs and international organizations. An important task for the participating countries was to raise the awareness about the importance of water for food and ecosystems and their interrelationships. This means raising this issue to the highest political attention nationally, informing the public at large and bringing this issue forward in international fora. Furthermore, the challenge for FAO's Members was to formulate national water for food and ecosystems action plans; to create the enabling institutional environment to implement Conference commitments; and to incorporate these into national policies and strategies for the water sector as well as for other relevant sectors.

Similar to the WSSD, also the FAO-LNV Conference on Water for Food and Ecosystems emphasized the importance of capacity development. Capacity development and building public-private partnerships were identified as important elements in improved coordinated management of water for food and ecosystems at the basin and community levels. The message of the Ministerial Round Table was to develop and manage legislation, policies and strategies, programmes, institutions and capacity building activities in a coherent matter.

From 2005 till now WUR has implemented and implement a wide range of capacity development activities and projects that contribute to the implementation of the recommendations of the FAO-LNV Conference on Water for Food and Ecosystems. Annexes 1 and 2 present overviews of the challenges formulated by the participants to the FAO-LNV Conference on Water for Food and Ecosystems and to the CSD17 and how these relate to capacity building activities and projects organised by Wageningen UR.

As can be seen in Annex 1 and 2, most capacity building projects listed are implemented by Wageningen International. The ILCD Course (the “Drainage Course”) run by the Centre for Water and Climate from Alterra (IWRM Team) is included in the overview as the only capacity building activity performed by Alterra in this field. This is of course not the reality as capacity building activities are also included in various projects executed by Alterra. The number of these projects runs into the several hundreds and a list providing descriptions of these projects is not available. It is therefore not possible to give a comprehensive overview of capacity building activities from Alterra.

Wageningen UR concerns itself with providing access to and sharing knowledge, building knowledge and knowhow (through research), advising policy makers and decision makers, awareness raising (on new insights), translating new legislation into practice (e.g. Water Framework Directive), water efficiency and increasing water productivity, equitable water use, river basin policies, supporting effective water management institutions. These subjects are also in the headings of the challenges that are formulated under the three Themes of the FAO-LNV conference – Theme 1: Fostering implementation – know-how for action; Theme 2: A new economy for water for food and ecosystems, and Theme 3: The enabling environment.

The analyses of the overview shown in Annex 1 together with the recommendations of the CSD Conference give direction to the proposed WUR capacity building activities to support LNV policies and for which a financial contribution from LNV will be requested.

5. WUR strategy and proposed capacity building programme

The conclusions of the CSD17 and of other important international events, combined with the results from research and literature, professional insight and the analyses performed in the frame of this project provide guidance to the Wageningen UR water strategy, including (future)

Wageningen UR capacity building activities. The CSD17 conclusions are of particular interest, because the conference is the latest in the series of international events with water of the agenda, and because of its focus on today's pressing issues like green water, climate change, and the need for an integrated approach towards poverty alleviation. The Final Adopted Text is the most important result of the CSD17 conference; it is also the official result of the conference.

Within the framework of another LNV-sponsored Wageningen UR project, the rich material contained in the Final Adopted Text has been translated into a Short List of the CSD17 conclusions^{1,2}. The short list looks as follows:

Overall objective:

Three dimensions of water: safe water (timely deliveries of sufficient water of good quality for all demands), safe harvests (maximum production per drop), and safe life (no loss of lives or property because of water disasters; hazard X vulnerability=disaster).

Shortlist:

1. *Optimal production locations: On a global and national scale, plan agricultural production exactly at those locations where the production per drop is highest; rain fed production requires further optimizing.*
2. *Climate and climate variability: manage shifts in ecosystems, land uses, including food production systems; enhance seasonal forecasting and organize access to its information products by agricultural producers and managers of ecosystems; national drought management plans (including pro-active measures); assess and manage effects on poverty and vulnerability; water-related hazards; stimulate international cooperation;*
3. *Green water: integrated multiple use systems, that provide multiple services; supplementary irrigation; management of water chains in basin; maximum production per crop; crop and weed management; water buffering; multiple use systems that provide multiple services*
4. *Land management: balanced (urban-rural, food production-ecosystems, large-small landownership, long term-short term) landuse planning; land use administration; equitable access to land – and water – and secure land tenure and land use rights (attention for the poor, women and indigenous people); sustainable forest management (biodiversity, prevent land degradation, land upgrading); centres of excellence on sustainable land management; research for sustainable land management and reducing land degradation; satellite imagery for land-use mapping and administration*
5. *IWRM: integrated land and water management to address land degradation, water scarcity, climate change impact; water use and storage in soils and ecosystems in support of all uses and demands; strengthen cooperation between water and land managers;*
6. *Assure nutrients availability and organize effective nutrient management (recycling, do so in combination with good water management).*

Cross cutting issues:

- *Vulnerable groups (the poor, women, youth, indigenous people)*
- *Strengthen the role of local authorities*

¹ The CSD17 follow-up project.

² Note that the Short List of CSD17 conclusions is still a draft. Lately it has been decided to reflect in the CSD17 follow-up project also the conclusions of the paper, Food Security and Agricultural Mitigation in Developing Countries: Options for Capturing Synergies (FAO, October 2009), the discussion paper, The discussion paper, Agricultural Development Under a Changing Climate: Opportunities and Challenges for Adaptation (Padgham, World Bank, August 2009), and the paper, Convenient Solutions to an Inconvenient Truth: Ecosystem-based Approaches to Climate Change (Environmental Department, World Bank, June 2009).

- *Stakeholder participation*
- *Capacity building*
- *Partnerships and networks*

Wageningen UR will work to include the conclusions of the CSD17 as contained in the Final Adopted Text – and as presented in the short list above – in its ongoing and future capacity building activities and projects. Actions to this effect are already taken, for example, by adapting the contents of Module 4, on Integrated Water Management, of the ICLD course.

Annex 1 shows which challenges of the FAO-LNV Conference are addressed by Wageningen UR capacity building activities while annex 3 presents a table that shows which themes of the CSD are addressed by the capacity building activities of Wageningen UR. As indicated before the vast majority of the capacity building activities in Annex 1 and 2 are performed by Wageningen International with the exception of the ICLD course of Alterra.

Together Annex 1, 2 and 3 form the basis for the analysis of the relevance of the ongoing capacity building activities for the most actual policy frameworks. Annex 4 presents a summarized overview of the capacity building recommendations from the FAO-LNV Conference and the 17th CSD session.

The conclusion from the analysis of Annex 1 is that Wageningen UR capacity development activities cover several of the challenges with a focus on Challenge 1: Access to and sharing of knowledge and information on interrelations of water, food and ecosystems. This applies for instance to the International Training of Trainers on Wetland Management but is also included in several other projects of Wageningen International. For example by the development of a Guidance note on capacity development for the Ramsar Secretariat and its Contracting Parties in support of the implementation of the Convention and a number of projects on Integrated River Basin Management. Also the ICLD course of Alterra addresses primarily challenge 1.

Also Challenge 2 (Building knowledge and know-how on the interrelations of water, food and ecosystems) and Challenge 3 (make use of knowledge in decision making on water, food and ecosystems) are well covered by a large number of projects. No particular attention is given to monitoring and evaluation and appraisal of river basin management (challenge 4).

Theme 2 (A new economy of water for food and ecosystems) is partly covered as far as concerned creating a watershed culture and development approach but otherwise receives little attention.

That does not count for the recommendation “Develop stakeholder processes to get a shared understanding” that is addressed in the ‘International Training of Trainers on Wetland Management, a course focusing on the facilitation of multi-stakeholder processes and curriculum development’ and in two other projects.

Adaptive management and assurance management receive limited attention and that counts also for the issue of “payment for environmental services” and “establish and develop water markets” Establish transboundary mechanisms for water is well covered by 2 projects of Wageningen International in Europe; one on the Bug River and one on the Sava River.

Theme 3 is again well covered in various trainings and projects including the issue of harmonisation of legislation and policies in water for food and ecosystems at local, regional and international level and improvement of efficient and productive use of water. Much attention is given to “creating capacitated institutions at basin (including transboundary) sub-basin and community level in IRWRM for agriculture and ecosystems”. In addition to past and existing activities Wageningen UR is developing a training on River Basin Management together

with Deltares and UNESCO-IHE. In addition Wageningen UR is involved with Milieukontakt International in implementing River Basin Management trainings in the Russian Federation.

A few subjects are not systematically covered in Wageningen UR capacity building work including: day-to-day monitoring and evaluation (included in Challenge 4, Theme 1; although Wageningen UR implements several monitoring and evaluation projects in The Netherlands), assurance management (under Challenge 2, Theme 2), using market mechanisms and develop water markets (Challenge 3, under Theme 2), and establishing transboundary mechanisms for water (also under Challenge 3, Theme 2).

When looking at the content of the trainings offered by Alterra and Wageningen International we can conclude that the training on “Integrated Water Resources management and the Role of Drainage” (the ICLD Course) is primarily targeted at the role of drainage for enhancing agricultural productivity although the subjects addressed in the course include issues like “Green Water”, “Land Management” “Institutional aspects” and “Integrated Water Resources Management”.

Over the past years the number of participants of the ICLD course also decreased gradually showing a declined interest for the course; in 2009 the course counted 13 participants. Both content and the decreasing number of participants lead to the conclusion that the course will need to be modernized and adapted to the latest recommendations and policy developments.

The number of applicants for the International Training of Trainers on Wetland Management is increasing year by year among others because new topics like the impact of climate change and adaptive management have been included in the training. Last year the Training had to run two programmes in parallel (number of applicants over 300, number of participants 43).

Looking at the CSD recommendations and the implications for capacity development (see annex 4) and taking into account the core business of WUR the following important recommendations for future capacity building activities relevant for WUR emerge:

- International, regional and national efforts to strengthen the capacity of developing countries to enhance agricultural productivity and to promote sustainable practices in pre-harvest and postharvest agricultural activities.
- Provide increased technical assistance to developing countries to strengthen national innovation capacity, training and extension services in sustainable agriculture, fish, livestock and integrated crop-forest and crop-livestock production systems
- Support training and capacity-building of rural communities to effectively implement adaptation programmes to climate change at the local level
- Foster and strengthen capacities of rural communities for self-organization for building social capital, taking into account national legislation
- Support countries' efforts, particularly in developing countries, to enhance the scientific understanding of land resources systems through strengthened technological capacity, including, as appropriate, support for testing research findings through pilot projects
- Further develop and improve human resources and capacities, particularly in developing countries, for sustainable land management through education and training activities
- Promote North-South, South-South and triangular cooperation and partnering for capacity-building and improving effectiveness in planning, monitoring and implementation of drought management plans, including data gathering, information management, modelling, and forecasting
- Facilitate and support the strengthening of commercial and technical capacity of farmer organizations, including through extension services
- Support and strengthen Governments' capacities to manage their resources by strengthening and adhering to their policies and legislations

Conclusions and recommendations for future capacity building work

The strength of the “Wageningen Approach” is that by addressing current global issues never an exclusively natural, technical, economical or social in nature path is followed. There are always multiple approaches and possible solutions – often synergetic ones. Wageningen UR therefore fosters the unique interaction between the natural and social sciences. Both sets of disciplines are part of our coherent package of research and capacity building services. This integrated approach offers additional possibilities for the effective application of expertise in policy or in practice.

The WUR capacity development efforts therefore are focused on building the knowledge and learning capacities of individuals, organizations and multi-stakeholder groups to innovate and bring about desirable change. Organisational and institutional change processes and learning are at the heart of capacity development. This requires combining and integrating disciplinary knowledge and expertise with a diverse range of process competencies. Wageningen UR takes on a holistic approach to water governance and contributes to institutional capacity development through professional partnerships, training programmes, workshops, projects and other knowledge exchange schemes.

The Wageningen UR approach and the recommendations from the CSD Conference provide clear guidance for adaptations to the current capacity building activities to better foster the challenges of the food, water and emerging climate crisis. We have come to realize that these challenges can not be addressed in isolation but require an integrated multi-sectoral approach. This implies also that we have to look at the institutional and organisational setting in which the professionals we train work. The core issue of the new Centre for Development Innovation of Wageningen UR is therefore: “creating capacity for change”

Despite the fact that technical knowledge is required to support balancing the water needs for food and ecosystems more attention needs to be given to new issues like competing claims on natural resources, conflict management and climate adaptations in water management, nature protection and agriculture.

This requires a re-shaping and harmonisation of current capacity building activities.

One of the new capacity building activities of Centre for Development Innovation (formerly Wageningen International) will be a 2 weeks training on competing claims in natural resources to be held in 2010 for the first time. Also the training on adaptive agriculture has been renewed based on recent policy development and the increasing relevance of the impact of climate change on agriculture. In 2010 Wageningen UR (CDI and Alterra) will run for the second time the training ‘Climate change adaptation in agriculture and natural resources management: policy making and programming for sustainable development’.. In addition Wetlands International asked for Wageningen UR involvement in developing a new capacity development initiative on Climate Change Adaptation and Wetlands.

The IWRM team of Alterra is planning a new capacity building activity and which will eventually be the main capacity building activity organised by the IWRM team ³. The new capacity building activity is prepared as the “+1” component of the 5 Key Projects. The Key Projects constitute the focus points of the IWRM team in the years ahead. The “+1” activity will develop training material that is based on the contents of the Key Projects. The Key Projects themselves will incorporate the conclusions of the CSD17 conference. Below, a short description of the 5+1 Key Projects is given:

Key project 1. Water demand management in India. Increase of agricultural water productivity in irrigated agriculture in semi arid areas.

³ The CWK team organizes the ICLD course. The ICLD is organized for the 49th time in 2010 and for the 50th time in 2011.

Key project 2. Harvest4Food. This project focuses on Africa. It is essentially a green water project. At regional scale or catchment scale yields can be increased by better land and water management. The use of precipitation to maintain sustainable ground water levels and make more water available for filling of hydropower reservoirs can be combined with usage of part of the precipitation for both agricultural production and for ecosystems.

Key project 3. Environmental risk analyses approach to achieve improved water quality in semi-arid areas. Up-grading water quality and ecological value of semiarid catchments by way of carefully managed irrigated and rain fed agriculture.

Key project 4. Increasing water productivity in arid regions. To become the obvious partner to contact in The Netherlands in relation to knowledge and development of agricultural systems that maximize the production per unit of water. The focus is on countries in arid regions that need to produce more food locally and create employment at the same time.

Key project 5. Addressing typical delta problems. The deltas of the world are among the most populous areas; they are also the locations of most of the large urban centres and of the most intensive economic activities. Water related issues like flooding, water availability, salt water intrusion, groundwater level dropping and groundwater and surface water quality deterioration, often in combination with poverty, require attention.

Key project +1. The “+1” project is the capacity building component of the Key Projects described above.

The projects are based on ongoing work of the IWRM team. The common determinant of the projects is water scarcity and how to deal with it under conditions of increasing population pressure, increasing demand for water, the requirement to protect ecological values, climate change, and last but not least the still-existing need to alleviate poverty. The “+1” project will develop capacity building products on the basis of material produced in the other 5 key projects. CSD17 conclusions, combined with other relevant material, will be the basis on which the capacity building products will be built. It is planned that, in addition to conventional classroom trainings organized at the home base (Wageningen), also other, more modern, forms of knowledge transfer will be developed, like long-distance learning, online training courses, etc.

The ICLD course will experience its 49th edition in 2010 and preparations are in full swing. Although the analyses show that the modules reflect to a large extent the messages contained in the material of the Water for Food and Ecosystems conference and the CSD17, their contents will be reviewed and adapted in the way presented above. The 50th edition of the ICLD course (in 2011) is planned to become a special event as it will present the new approach and curriculum of the course based on the recommendations of the CSD. The new course will be fully tuned with other capacity building activities on the topic Water for Food and Ecosystems”.

Comprehensive overview of Wageningen UR capacity building activities to facilitate the implementation of the recommendations of the LNV/FAO Conference

Theme 1. Fostering implementation - know-how for action

Challenge 1: *Access to and sharing of knowledge and information on the interrelations of water, food and ecosystems*

How to make it happen

- Build capacity and transfer knowledge through regional training courses in water and ecosystem management at basin level and direct interaction between different water users;
- Establish institutional and practical guidelines for participatory water organisations with multiple stakeholders to engage in dialogues;
- Conduct awareness campaign on water efficiency and water savings in rural areas;
- Advocate policy and legal aspects of water management at all levels;
- Alliance building for joint action for managing shared river basins;

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Capacity building in public participation in Integrated River Basin Management-Turkey.*
Wageningen International focuses on the application of article 14, public participation, of the Water Framework Directive in the in the Büyük Menderes Basin in the Twinning project managed by DLG. A communication plan is being formulated to inform and engage stakeholders in basin management about the Draft River Basin Management Plan. The purpose of the project called “Capacity Building Support to the Water Sector in Turkey” is to assist Turkey in bringing its water management system in line with EU water and environment legislation to enable the full implementation of the EU water acquis by the date of Turkey’s accession to the EU.
- *Enhancing wetland wise-use: a guide for capacity development:*
This guide provides the contracting parties of the Ramar Convention on wetlands and in particular the Ramsar Administrative Authorities with a stepwise approach for developing and implementing capacity development activities to act for the wise use of wetlands.
- *www.wetlandprofessionals.org*
Updating and maintaining the Wetlands Professionals Platform and the online WetCap brochure on wetland management training. The Wetland Professionals Platform is an interactive platform where wetland professionals share experiences and expertise on several topics.

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Wetlands & Poverty Reduction Programme*
The capacity development component of this programme aimed to build technical capacity to deliver poverty reduction in wetland areas through initiatives that integrate wise use wetland management practices. Under the capacity development component, a regional Training of Trainers on Wetlands and Poverty Reduction in both East and West Africa involving both participants from the conservation and development sector in a dialogue were implemented.
- *International Training of Trainers on Wetland Management, a course focusing on the facilitation of multi-stakeholder processes and curriculum development*
This international training provides participants with skills and knowledge necessary for curriculum development in the field of wetland management. It focuses on multi-stakeholder processes that play an important role in wetland management. It addresses the need for transboundary and cross-sectoral co-operation to manage resources. The training programme is endorsed by the Ramsar secretariat.
- *Capacity development in Fisheries*
Technical support to three Universities and a polytechnic in Indonesia to build capacity in marine aquaculture, fisheries techniques and marine science with the aim to strengthen the education curricula.
- *Towards Participatory Fisheries Governance*
Training on fisheries governance and fisheries co-management, with attention to the multi-stakeholder processes. The course presents the perspectives of various science disciplines on fisheries management and evaluates the most common approaches.

Wageningen UR - Alterra; Team IWRM; Drainage Course

- *Integrated Water Resource Management and the Role of Drainage course*
In this course the scope of irrigation and drainage within the widely adopted paradigm "Integrated Water Resources Management" is addressed. The various implications of IWRM for agricultural water management are presented and participants learn to put their daily land and water issues in the perspective of IWRM.
- *Drainage Criteria (Drainage Systems in Balance) course*
This course is an introduction to drainage of agricultural lands. The agro-hydrological principles underlying drainage are explained and survey methods are used to analyze specific drainage problems and to translate these in drainage criteria.
- *Design, Implementation and Operation of Drainage Systems course*
The course is an introduction to the design, implementation and operation of drainage systems. It includes a discussion of the design theories, organization and installation techniques and relevant information for improving the quality of (sub)surface drainage systems. An overview is given of the current design theories, installation techniques and O & M practices; special attention is paid to local specific issues to improve the quality of drainage systems.
- *Institutions in Water Management course*
In this course participants explore the institutional changes that are necessary for practicing agricultural water management within the framework of Integrated Water Resources Management. The fragmentation of responsibilities for water resources development and management is often cited as the major obstacle to promoting IWRM. Participants will analyze these obstacles and explore what institutional changes are required

Challenge 2: *Building knowledge and know-how on the interrelations of water, food and ecosystems*

How to make it happen

- Evaluate and re-direct existing, and/or establish new coherent research and policy programmes for:
 - increased water efficiency in agriculture/fisheries
 - ecosystem services and values
 - integrated approaches in river basin management
- Combine existing knowledge;
- Establish joint ventures and partnerships to link:
 - scientific information with traditional / indigenous knowledge
 - local and global knowledge
 - knowledge of governments, universities, NGO's and private sector/consultants
- Inter-basin sharing /exchange of information;
- Establish mechanism for long-term data collection and develop guidelines and criteria for harmonization of data.

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *EU Life Project on Transboundary Integrated River Basin Management*
The project aims to integrate agriculture, biodiversity protection and flood retention into river basin management. Capacity building activities are focused around biodiversity assessment, development of sustainable agriculture and the design of ecologically sound flood protection systems. Activities also included awareness raising on integrated river basin management through workshops, conferences, and a study tour.
- *WetCap Partnership*
The WetCap Partnership for Wetland Capacity Building is a consortium of six organisations based in The Netherlands: Rijkswaterstaat RIZA, UNESCO-IHE, ITC, Cap-Net/UNDP, Wetlands International and Wageningen University and Research Center (Wageningen International and ALTErra). The WetCap Partnership developed and implemented capacity building programmes in wetland management and restoration as part of integrated water resources management.
- *Partnership development*
Cooperation with IUCN, WWF, Wetlands International and other partners to develop joint initiatives on water, food and water resource management
- *Training on IWRM in Russia*
This activity was build around the concept and principles of IWRM. Stakeholder analysis and the steps in IWRM planning were discussed. Government officials, university and NGO staff shared how lobbying can be used to support the implementation of IWRM approach in Russia.

Challenge 3: Make use of knowledge in decision making on water, food and ecosystems

How to make it happen

- Share information at national level
- Share information at international level; establish a Clearing House Mechanism
- Strategic environmental assessment through development of scenarios and alternatives
- Development and use of decision support systems.
- Apply the CBD ecosystem approach in water management to acknowledge the carrying capacity of ecosystems in water management.
- Establish policies for the wise use of wetlands and develop projects to rehabilitate and restore degraded ecosystems
- Apply scientific information and traditional/indigenous knowledge in river basin management
- Development and implementation of management guidelines on agriculture and areas of high ecological value (including wetlands)
- Development of poverty reduction strategies that incorporate wetlands and other ecosystems
- Dialogues aimed at local level management to better understand the use of natural resources by different stakeholders
- Pilot studies and policy programmes on the application of
 - Sustainable supply side technologies
 - Sustainable demand side technologies

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Integrated Wetland management Planning in the Zasavica case; pilot project on integrated wetland management and restoration.*
The project aims to integrate agriculture into the requirements for sustainable wetland management. It includes training and capacity building activities.
- *Setting up a Wetland Centre for Turkey: a feasibility study.*
The purpose of the project was initially to carry out a feasibility study on establishing a national wetland centre in Turkey and explore possible Dutch contribution to its set up. Its ultimate goal is capacity building and establishing an enabling environment or supportive institutional setting to achieve integrated water resources management and in support of the wise use of wetlands. At the 5th World Water Forum in Istanbul the feasibility study was discussed with a wide range of stakeholders and it was acknowledged that a supportive institutional setting or good governance structure for the wise use of wetlands is needed.
- *Ramsar CEPA Oversight Panel*
Support to the implementation of the Ramsar Convention on wetlands. Providing advice to the Contracting Parties on 1) capacity development including education, awareness raising and training, 2) participatory approaches and stakeholder involvement and 3) on communication and communication strategies

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Wings over Wetlands Project*

The project aims to enhance conservation of migratory waterbirds and their critical sites in the African/Eurasian flyways. Activities address the flyway-scale causes of site degradation and related species decline. Design and implementation of a training module on Communicating the flyway approach aiming to:

- a. Enhance the capacity among a wide range of conservation professionals across the AEWA Region to understand, apply and disseminate the flyway-scale approach
- b. Foster joint international as well as site-based action towards an improved management of critical network of sites and waterbird populations, through a better understanding of the flyway-scale approach and its practical applications
- c. Provide concrete examples and practical guidelines to foster an improved understanding of the actual economic values of migratory waterbirds' populations, as part of the wise use of wetland resources

- *Integrated Wetland Management Planning; Pilot Project to restore degraded wetland and minimize the impact of agriculture. (Karadjordjevo, Serbia)*

Implementation of various training programmes to create understanding on an integrated approach to wetland management including minimizing the impact of ex situ agriculture on the wetland.

Challenge 4: *Monitoring, evaluation and appraisal of river basin policy and project development in various ecological zones*

How to make it happen

- Set up monitoring requirements and systems;
- Conduct environmental impact assessments and other mechanisms to analyse actual and potential impacts of (planned) activities;
- Utilise evaluation results for improvements and re-direction of policy and projects;
- Requirement of participatory monitoring system for appraisal of policies and projects;
- Develop guidelines on general indicators in monitoring regimes.

Theme 2. A new economy of water for food and ecosystems

Challenge 1: Awareness raising, capacity building and increasing local water productivity

Create a watershed culture and development approach

How to make it happen

- Enhance awareness;
- Build capacity;
- Bring actors together for local watershed dialogues;
- Develop long-term partnerships and international alliances for long-term capacity building

- Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *EU Life Project on Transboundary Integrated River Basin Management*
The project aims to integrate agriculture, biodiversity protection and flood retention into river basin management. Capacity building activities are focused around biodiversity assessment, development of sustainable agriculture and the design of ecologically sound flood protection systems. Activities also included awareness raising on integrated river basin management through workshops, conferences, and a study tour.
- *Integrated Wetland Management Planning; Pilot Project to restore degraded wetland and minimize the impact of agriculture. (Karadjordjevo, Serbia)*
Implementation of various training programmes to create understanding on an integrated and watershed approach to wetland management including minimizing the impact of ex situ agriculture on the wetland.
- *Integrated Wetland management Planning in the Zasavica case; pilot project on integrated wetland management and restoration.*
The project aims to integrate agriculture into the requirements for sustainable wetland management including training and capacity building activities on a watershed approach to wetland management.

Wageningen UR- Alterra

- *Institutions in Water Management course*
In this course participants explore the institutional changes that are necessary for practicing agricultural water management within the framework of Integrated Water Resources Management. The fragmentation of responsibilities for water resources development and management is often cited as the major obstacle to promoting IWRM. Participants will analyze these obstacles and explore what institutional changes are required

More value per drop locally

How to make it happen

- Provide technical support and extension services (capacity building) on efficient use of water and water saving technologies;
- Develop programme for small scale technologies to support local communities;
- Develop access to rural finance institutions and services for investments by small scale farmers;
- Knowledge sharing and resource pooling between farmers organisation and cooperation to for the adoption of small scale technologies;
- Research programmes to assess possibilities and impacts of upscaling small scale technologies and their long-term consequences



Market access

How to make it happen

- Develop new local markets and increase access to existing local markets for farmers;
- Improve access to international markets.



Challenge 2: Translating the awareness into quantitative values and allocation decisions

Conservation of resource base

How to make it happen

- Develop international *and* local sustainable financing mechanism;
- Develop laws, regulations and policies to protect natural resources at water basin level reflected in PRSPs, IWRM and land management plans;
- Develop national monitoring system, information systems and decision support systems;
- Acceptance of social responsibilities as base for voluntary approaches (relates to awareness/capacity building).

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

• ***Wetlands & Poverty Reduction Programme***

As part of the development process for the capacity building component of the WPRP, two stakeholder consultation workshops were held to undertake a training and skills need analysis for both West and East Africa to support the mainstreaming of sustainable wetlands management principles into development agendas and policy instruments such as PRSPs (Poverty Reduction Strategy Papers).

Water value assessment

How to make it happen

- Make use of the existing range of valuation techniques, in stakeholder-oriented, participatory, and iterative way, and assess willingness and ability to pay
- Share data and information needed for valuation
- Develop capacity on the use of valuation and assessment techniques

Develop stakeholder processes to get shared understanding

How to make it happen

- Facilitate dialogue between and among countries and stakeholders
- Support dialogue with available information on values of water for different uses
- Enable the most vulnerable stakeholders (poor and environment) to include their interests by specifically including them in process, by organizing them to jointly voice concerns and by raising their capacities (also see theme 3)
- Participative water valuation techniques (stakeholder-oriented valuation in adaptive way)
- Partnerships between donors and national governments as financing windows
- Focus on underlying values in conflict resolution: to identify win-win situations or agreeable compromise

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *International Training of Trainers on Wetland Management, a course focusing on the facilitation of multi-stakeholder processes and curriculum development*
This international training provides participants with skills and knowledge necessary for curriculum development in the field of wetland management. It focuses on multi-stakeholder processes that play an important role in wetland management and builds the facilitation and communication skills of the participants. It addresses the need for transboundary and cross-sectoral co-operation to manage resources. The training programme is endorsed by the Ramsar secretariat.
- *EU Life Project on Transboundary Integrated River Basin Management*
The project aims to integrate agriculture, biodiversity protection and flood retention into river basin management. Capacity building activities are focused around biodiversity assessment, development of sustainable agriculture and the design of ecologically sound flood protection systems. Activities also included awareness raising on integrated river basin management through workshops, conferences, and a study tour.
- *Nile Basin Discourse*
The Nile Basin Discourse (NBD), a Regional Network of civil society organizations in the Nile Basin Region, were brought together to enter into a dialogue to jointly develop a strategic plan to define and determine overall direction and goals for the next 5 years. The NBD aims to facilitate and support civil society involvement and participation in the planning, implementing and monitoring of development processes in the Nile Basin Region.

Adaptive management

How to make it happen

- Invest in good knowledge base (sound science) to avoid costly mistakes
- Develop indicators and regular monitoring to assess impacts of actions
- Adaptive management – changing actions when monitoring shows that this is needed



Assurance management

How to make it happen

- Use water retention techniques to store water for use during dry periods
- Promote use of drought resistant crops
- Establish Environmental Base Flows
- Recognition of value of wetlands as refuge areas in periods of drought
- Use & communicate meteorological forecasts and water availability parameters to prepare for droughts



Establish integrating institutions / organization

How to make it happen

- Establishment of financially self-sufficient river basin organizations (based on fees and taxation, but taking into account the ability to pay of local water users)
- Coordinate water budgets available under the different Ministries and use for integrated institutional approach

Challenge 3: Using market mechanisms to improve water management

Payment for environmental services

How to make it happen

- Establish a multi-stakeholder fund that collects money from beneficiaries of water resources to provide direct payments to local communities to promote conservation of these resources.
- Develop local knowledge and skills for the establishment and management of PES schemes
- Identify links between practices and impacts on water resources, to see who actually benefits or pollutes (and thus should pay) and who provides the environmental service (and thus should be paid)
- Implement a certification mechanism for good practices or “green water credits”



Establish and develop water markets

How to make it happen

- Introduce flexible water access entitlement regimes
- Ensure protection of established water rights of indigenous communities
- Use Water User Associations to facilitate water transfers among members and between WUAs in different regions



Establish transboundary mechanisms for water

How to make it happen

- Learn from available experiences

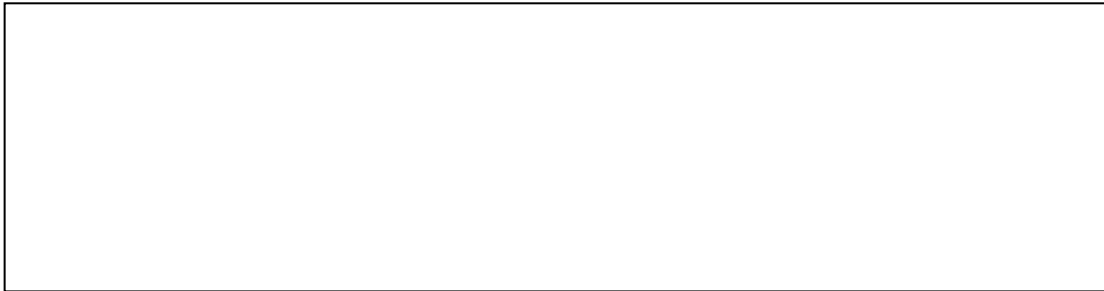
Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *EU Life Project on Transboundary Integrated River Basin Management*
The project aims to integrate agriculture, biodiversity protection and flood retention into river basin management of the 4 Sava Basin Countries. Capacity building activities are focused around biodiversity assessment, development of sustainable agriculture and the design of ecologically sound flood protection systems. Activities also included awareness raising on integrated river basin management through workshops, conferences, and a study tour.
- *Bug River Project; Enhance cooperation between basin countries on Integrated River Basin Management.*
The project has made an assessment of ways to improve transboundary cooperation between the Bug River riparian countries Belarus, Ukraine and Poland on integrated shared river basin management with a focus on integrating biodiversity management into water resource management and included the policy assessment and the organization of an international conference bringing together representatives from the biodiversity sector and the water management sector of the three countries

Use existing markets to address environmental and social externalities

How to make it happen

- Consider use of international trade in food as instrument to deal with national needs for water security and food security
- Use funding to promote water saving and pollution reducing technologies



Incremental process towards pricing policies

How to make it happen

- Charges for cost recovery of operation and maintenance by water users
- Pay attention to “ability to pay” principle for the poor and smallholders
- Then to appropriate externality costing (including environmental costs as well as positive externalities in pricing policies), supported by parallel reforms and improvements in infrastructure and governance conditions



Theme 3. The enabling environment

Challenge 1: Harmonization of legislation and policies in water for food and ecosystems at local, regional, national and international level

How to make it happen

- Review, update and harmonise legislation for water, agriculture and environment, taking into account decentralisation opportunities.
- Develop and implement a comprehensive national strategy for integrated water resource management by 2005 (WSSD-target), including a clear transfer of mandates and authority to lower level institutions.
- Technical Advisory Committee to assist ministries and other stakeholders in the process (consisting of national and international subject experts).
- Create effective partnerships between national governments and stakeholders to ensure dialogue, responsibility and ownership
 - Enable civil society to actively contribute to stakeholder dialogues and partnerships, including training and institutional capacity building
 - Educate stakeholders in the concept of integrated water resources management.
 - Strengthen scientific studies at regional level to provide basis for integrated water policy and legislation.
 - Enhance the link between national policy and local implementation.
 - Create capacity for youth and women to effectively contribute to the stakeholder dialogue.

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Nile Basin Discourse*
Facilitating the joint development of the Nile Basin Discourse (NBD) strategic plan to define and determine overall direction and goals for the next 5 years. The NBD is a Regional Network of civil society organizations established to facilitate and support civil society involvement and participation in the planning, implementing and monitoring of development processes in the Nile Basin Region. The overall objective of the NBD is to promote sustainable and equitable development, poverty reduction, and cooperation between all stakeholders in the Nile Basin.
- *Capacity building in public participation in Integrated River Basin Management-Turkey.*
Wageningen International focuses on the application of article 14, public participation, of the Water Framework Directive in the in the Büyük Menderes Basin. A communication plan is being formulated to inform and engage stakeholders in basin management about the River Basin Management Plan.
- *Setting up a Wetland Centre for Turkey: a feasibility study.*
The purpose of the project was initially to carry out a feasibility study on establishing a national wetland centre in Turkey and explore possible Dutch contribution to its set up. Its ultimate goal is capacity building and establishing an enabling environment or supportive institutional setting to achieve integrated water resources management and in support of the wise use of wetlands. At the 5th World Water Forum in Istanbul the feasibility study was discussed with a wide range of stakeholders and it was acknowledged that a supportive institutional setting or good governance structure for the wise use of wetlands is needed. A wetland centre could facilitate developing the right institutional setting.
- *Training on IWRM in Russia*
This training educates stakeholder groups in Russia in the concept and principles of IWRM. Stakeholder analysis and the steps in IWRM. Government officials, university and NGO staff shared how lobbying can be used to support the implementation of IWRM approach in Russia.

- *International Training of Trainers on Wetland Management*
This international training provides participants with skills and knowledge necessary for curriculum development in the field of wetland management. It discusses the concept of IWRM and addresses the need for transboundary and cross-sectoral co-operation to manage resources. It focuses on multistakeholder processes that play an important role in wetland management and builds the facilitation and communication skills of the participants. The training programme is endorsed by the Ramsar secretariat.
 - *Project in Serbia on Integrated Wetland Management*
The project includes capacity building activities on integrated management planning and multi sectoral approaches to wetland management including agriculture, tourism development and water management.
 - *Master Planning for the Conservation and Development of the Ex-Mega Rice Project (EMRP) Area in Central Kalimantan.*
In collaboration with Dutch and Indonesian partners conducting studies that support the development of an integrated Master Plan providing a framework to the Government of Indonesia for the restoration and revitalisation of the failed former 1 million ha rice project, largely located on peatland in Central Kalimantan. The plan provides zoning of the entire area, targeting areas for conservation, limited use, development and coastal management.
 - *Towards formulation of a national strategy for participatory lowland water resource management project (NLDS).*
The project focuses on development of already reclaimed coastal lowland areas in Indonesia, and aimed to prepare recommendations for the preparation of a National Lowland Development Strategy, and to acquire Donor support for further investment in existing lowland agricultural developments. Studies focused on i) Water infrastructure; ii) Agricultural and Fisheries land use, iii) WUA / local community involvement, iv) Institutional aspects, v) Environmental aspects, and vi) Spatial planning.
- Wageningen UR- Alterra**
- *Institutions in Water Management course*
In this course participants explore the institutional changes that are necessary for practicing agricultural water management within the framework of Integrated Water Resources Management. The fragmentation of responsibilities for water resources development and management is often cited as the major obstacle to promoting IWRM. Participants will analyze these obstacles and explore what institutional changes are required

Challenge 2: Improvement of efficient and productive use of water

How to make it happen

- Develop and disseminate innovative technologies for efficient water use, accounting for local knowledge.
 - Provide ongoing training and assistance for development and application of the technology.
 - Use economic incentives to promote the use of water efficient technologies (e.g. tax regulations)
 - Establish public-private partnerships to foster economic interest in the technology development and dissemination
- Develop and undertake a well-targeted water efficiency campaign for Africa's rural areas (building on the Pre-Conference in Addis Ababa)
- Optimize land use planning for water for food and ecosystems
 - Educate people in the water, agriculture and conservation sectors on water for food and ecosystems concepts, starting from the youth up to the professionals
 - Establish an international centre of knowledge and experience (website, clearing house mechanism, etc)
 - Improve knowledge on gender specific livelihoods and requirements related to water.

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Integrated Aquaculture Project Egypt*
Study on the possibilities to use fresh water resources in Egypt more efficiently by integrating fish farming into existing agriculture practices.
- *Master Planning for the Conservation and Development of the Ex-Mega Rice Project (EMRP) Area in Central Kalimantan.*
In collaboration with Dutch and Indonesian partners conducting studies that support the development of an integrated Master Plan providing a framework to the Government of Indonesia for the restoration and revitalisation of the failed former 1 million ha rice project, largely located on peatland in Central Kalimantan. A spatial zoning of the area is proposed based on natural hydrological landscape units that defines four main management zones targeting areas for conservation, limited use, development and coastal management.
- *Towards formulation of a national strategy for participatory lowland water resource management project (NLDS).*
The project focuses on development of already reclaimed coastal lowland areas in Indonesia, and aimed to prepare recommendations for the preparation of a National Lowland Development Strategy, and to acquire Donor support for further investment in existing lowland agricultural developments. Studies focused on i) Water infrastructure; ii) Agricultural and Fisheries land use, iii) WUA / local community involvement, iv) Institutional aspects, v) Environmental aspects, and vi) Spatial planning.

Wageningen UR- Alterra

- *Integrated Water Resource Management and the Role of Drainage course*
In this course the scope of irrigation and drainage within the widely adopted paradigm "Integrated Water Resources Management" is addressed. The various implications of IWRM for agricultural water management are presented and participants learn to put their daily land and water issues in the perspective of IWRM.
- *Drainage Criteria (Drainage Systems in Balance) course*
This course is an introduction to drainage of agricultural lands. The agro-hydrological principles underlying drainage are explained and survey methods are used to analyze specific drainage problems and to translate these in drainage criteria.
- *Design, Implementation and Operation of Drainage Systems course*
The course is an introduction to the design, implementation and operation of drainage systems. It includes a discussion of the design theories, organization and installation techniques and relevant information for improving the quality of (sub)surface drainage systems. An overview is given of the current design theories, installation techniques and O & M practices; special attention is paid to local specific issues to improve the quality of drainage systems.
- *Institutions in Water Management course*
In this course participants explore the institutional changes that are necessary for practicing agricultural water management within the framework of Integrated Water Resources Management. The fragmentation of responsibilities for water resources development and management is often cited as the major obstacle to promoting IWRM. Participants will analyze these obstacles and explore what institutional changes are required

Challenge 3: *Achieve equitable water use between agriculture and ecosystems and between users, in particular to ensure adequate access of the poor to water*

How to make it happen

- Identify existing and/or develop new policies and programmes and service-delivery systems that create enabling conditions to improve access to land and water by the rural poor
- Investigate problems of equity in access to resources
- Develop legislation and measures to secure minimum access to water, land and ecosystem resources
- Develop environmental management plans at different levels.
- Develop or strengthen multi-stakeholder alliances, commissions or other convening mechanisms on land and water access issues
- Develop and disseminate of appropriate technologies to improve livelihoods and increase productivity.
- Establish community based exemption from payment systems for the poor
- Secure water supply through dialogue, agreements and shared vision at transboundary level.

Challenge 4: Create capacitated institutions at basin (including transboundary), sub-basin and community level in IWRM for agriculture and ecosystems.

How to make it happen

- Establish partnerships between basin authorities and NGO's and private sector and local community (like farmer associations) to capacitate institutions to meet their objectives in IWRM.
- Coordinate the management of transboundary water resources.

Wageningen UR - Wageningen International (from 2010: Wageningen UR Centre for Development Innovation)

- *Towards improved fish stock management*
Improved coordination and harmonization of policies and fisheries management practices regarding the exploitation of small pelagic fish species in 4 West African countries sharing the same resources.
- *Nile Basin Discourse*
The NBD is a Regional Network of civil society organizations established to facilitate and support civil society involvement and participation in the planning, implementing and monitoring of development processes in the Nile Basin Region. Facilitating the joint development of the Nile Basin Discourse (NBD) strategic plan helped to define and to determine the overall direction and goals for the next 5 years. It will strengthen NBD's capacity to promote sustainable and equitable development, poverty reduction, and cooperation between all stakeholders in the Nile Basin.
- *Wings over Wetlands Project*
The project aims to enhance conservation of migratory waterbirds and their critical sites in the African/Eurasian flyways. Activities address the flyway-scale causes of site degradation and related species decline.
- *EU Life Project on Transboundary Integrated River Basin Management*
The project aims to integrate agriculture, biodiversity protection and flood retention into river basin management. Capacity building activities are focused around biodiversity assessment, development of sustainable agriculture and the design of ecologically sound flood protection systems. Activities also included awareness raising on integrated river basin management through workshops, conferences, and a study tour.
- *Bug River Project; Enhance cooperation between basin countries on Integrated River Basin Management.*
The project has made an assessment of ways to improve transboundary cooperation between the Bug River riparian countries Belarus, Ukraine and Poland on integrated shared river basin management with a focus on integrating biodiversity management into water resource management and included the policy assessment and the organization of an international conference bringing together representatives from the biodiversity sector and the water management sector of the three countries

Annex 2:

Overview table capacity building activities in relation to the outcomes of the
FAO-LNV conference on Water for Food and Ecosystems

	Themes FAO				Theme 2			Theme 3			
	Theme 1				Challenge:			Challenge:			
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	3.4
Alterra											
Courses											
Integrated Water Resources Management and the Role of Drainage	x				x	x		x	x		
Drainage Criteria	x				x				x		
Design, Implementation and Operation of Drainage Systems	x				x				x		
Institutions in Water Management	x				x	x		x			x
Projects											
India field water management under changing conditions		x			x	x		x	x	x	
Harvest4Food		x			x	x			x		
Mirage extended		x				x					
Water productivity arid countries		x			x	x		x	x	x	
Deltas of the world											
Training in key project issues	x				x			x	x		
Wageningen International											
Courses											
International Training of Trainers on Wetland Management	x					x		x			
Capacity development in Fisheries	x										
Towards Participatory Fisheries Governance	x										
Projects											
Capacity building in public participation in Integrated River Basin Management – Turkey	x							x			
Wetland Centre Turkey			x								
Enhancing wetland wise-use: a guide for capacity development	x										
Integrated Wetland Management Planning; Pilot Project to restore degraded wetland and minimize the impact of agriculture. (Karadjordjevo, Serbia)	x										
Project in Serbia on Integrated Wetland Management					x			x			
Training on IWRM in Russia		x							x		
www.wetlandprofessionals.org	x										
Wetlands & Poverty Reduction Programme	x					x					
EU Life Project on Transboundary Integrated River Basin Management (information exchange)		x						x			
WetCap Partnership		x									
Partnership development		x									
Integrated Wetland management Planning in the Zasavica case; pilot project on integrated wetland management and restoration				x							
Ramsar CEPA Oversight panel				x							
LNv Policy support				x							

Wings over Wetlands Project	x			
Nile Basin Discourse		x		x
Bug River Project; Enhance cooperation between basin countries on Integrated River Basin Management			x	
Master Planning for the Conservation and Development of the Ex-Mega Rice Project (EMRP) Area in Central Kalimantan				x x
Towards formulation of a national strategy for participatory lowland water resource management project (NLDS)				x x
Integrated Aquaculture Project Egypt				x
Towards improved fish stock management				

Annex 3:

Overview table capacity building activities in relation to the outcomes of the CSD17 conference

	CSD17 shortlist					Cross cutting issues					
	Optimal production locations	Climate and climate variability	Green Water	Land management	IWRM	Nu-trients	Vulnerable groups	Local authorities	Stake-holders	Capacity building	Partner-ships
Alterra											
Courses											
Integrated Water Resources Management and the Role of Drainage (Module 1 ICLD)			x	x	x			x	x		
Drainage Criteria (M2 ICLD)			x	x	x					x	
Design, Implementation and Operation of Drainage Systems M3 ICLD)			x	x						x	
Institutions in Water Management (M4 ICLD)					x		x	x	x	x	x
Projects											
India field water management under changing conditions (Key Project 1)			x		x			x	x		
Harvest4Food (Key Project 2)	x	x	x	x	x		x				
Mirage extended (Key Project 3)	x	x	x	x	x						
Water productivity arid countries (Key Project 4)	x	x	x	x	x						
Deltas of the world (Key Project 5)	x	x	x	x	x		x				
Training in key project issues (Key Project "+1")	x	x	x	x	x		x	x	x		
Wageningen International											
Courses											
International Training of Trainers on Wetland Management					x			x	x	x	
Capacity development in Fisheries					x						
Towards Participatory Fisheries Governance					x			x	x		
Projects											
Capacity building in public participation in Integrated River Basin Management – Turkey					x		x	x	x		
Wetland Centre Turkey					x					x	x

Enhancing wetland wise-use: a guide for capacity development		X							X
Integrated Wetland Management Planning; Pilot Project to restore degraded wetland and minimize the impact of agriculture. (Karadjordjevo, Serbia)		X							X
Project in Serbia on Integrated Wetland Management		X						X	X
Training on IWRM in Russia		X						X	X
www.wetlandprofessionals.org									X X
Wetlands & Poverty Reduction Programme		X			X	X	X	X	
EU Life Project on Transboundary Integrated River Basin Management (information exchange)	X	X					X	X	
WetCap Partnership Partnership development		X						X	X X
Integrated Wetland management Planning in the Zasavica case; pilot project on integrated wetland management and restoration	X	X						X	
Ramsar CEPA Oversight panel		X						X	X
LNV Policy support		X							
Wings over Wetlands Project		X						X	
Nile Basin Discourse		X					X	X	X X
Bug River Project; Enhance cooperation between basin countries on Integrated River Basin Management		X					X	X	X
Master Planning for the Conservation and Development of the Ex-Mega Rice Project (EMRP) Area in Central Kalimantan	X	X						X	
Towards formulation of a national strategy for participatory lowland water resource management project (NLDS)	X	X					X	X	X
Integrated Aquaculture Project Egypt		X						X	
Towards improved fish stock management							X	X	X

Comparison of capacity building recommendations from the FAO/LNV Conference on Water for Food and Ecosystems and the CSD outcomes.

Themes of the CSD	Content issues	Capacity building recommendations	FAO Theme	FAO Challenges	FAO Capacity Building recommendations
Agriculture	Sustainable soil, land, livestock, forest, biodiversity and water management practices, and resilient crops are essential	International, regional and national efforts to strengthen the capacity of developing countries to enhance agricultural productivity and to promote sustainable practices in pre-harvest and postharvest agricultural activities are urgently needed	Fostering implementation - know-how for action	Access to and sharing of knowledge and information on the interrelations of water, food and ecosystems	Build capacity and transfer knowledge through regional training courses in water and ecosystem management at basin level and direct interaction between different water users; Establish institutional and practical guidelines for participatory water organisations with multiple stakeholders to engage in dialogues;
		Provide increased technical assistance to developing countries to strengthen national innovation capacity, training and extension services in sustainable agriculture, fish, livestock and integrated crop-forest and crop-livestock production systems		Building knowledge and know-how on the interrelations of water, food and ecosystems	
		Support the capacity of developing countries to rehabilitate and develop rural and agricultural infrastructure sectors		Make use of knowledge in decision making on water, food and ecosystems	

Rural Development	Promote equitable access to land, water, financial resources and technologies by women, indigenous peoples and other vulnerable groups;	Support training and capacity-building of rural communities to effectively implement adaptation programmes to climate change at the local level		Monitoring, evaluation and appraisal of river basin policy and project development in various ecological zones	
	Encourage rural communities' participation in decision making, promote rural communities' empowerment and rural leadership	Foster and strengthen capacities of rural communities for self-organization for building social capital, taking into account national legislation			
	Encourage the use of land resources in a sustainable manner to prevent land degradation that is caused by unsustainable exploitation of land resources				
	Promote sustainable natural resources use and management, including ecosystem conservation through community-based programmes				
Land	Promoting integrated land and water resource management in addressing land degradation, water scarcity and adapting to impacts of climate change	Support countries' efforts, particularly in developing countries, to enhance the scientific understanding of land resources systems through strengthened technological capacity, including, as appropriate, support for testing research findings through pilot projects	A new economy of water for food and ecosystems	Awareness raising, capacity building and increasing local water productivity	Enhance awareness; Build capacity; Bring actors together for local watershed dialogues; Develop long-term partnerships and international alliances for long-term capacity building Provide technical support and extension services (capacity building) on efficient use of water and water saving technologies Acceptance of social responsibilities as base for voluntary approaches (relates to

					awareness/capacity building).
	Promoting efficient, effective and sustainable use of water resources, including water diversification by exploring the sustainable use of groundwater and effluent waste, sustainable desalination, rainwater harvesting and support water conservation and demand management initiatives, balancing among different water uses in all ecosystems;	Further develop and improve human resources and capacities, particularly in developing countries, for sustainable land management through education and training activities		Translating the awareness into quantitative values and allocation decisions	Develop capacity on the use of valuation and assessment techniques Develop stakeholder processes to get shared understanding
	Strengthening the coordination and cooperation among authorities responsible for managing water and land resources			Using market mechanisms to improve water management	Develop local knowledge and skills for the establishment and management of PES schemes
	Improving the efficiency of irrigation and water management practices, such as the use of rainfall harvesting, so as to help to address water shortages				
		Promote North-South, South-South and triangular cooperation and partnering for capacity-building and improving effectiveness in planning, monitoring and implementation of drought management plans, including data gathering, information management, modelling, and forecasting	The enabling environment	Harmonization of legislation and policies in water for food and ecosystems at local, regional, national and international level	Enable civil society to actively contribute to stakeholder dialogues and partnerships, including training and institutional capacity building Educate stakeholders in the concept of integrated water resources management Create capacity for youth and women to effectively contribute to the stakeholder dialogue.

		Promote access to affordable, appropriate and necessary technology, and provide corresponding capacity-building to enable drought forecasting and planning, development of user-based droughtrelated management triggers across time scales, and sustainable management, including efficient use of scarce resources and arable land, as mutually agreed		<p>Improvement of efficient and productive use of water</p>	Provide ongoing training and assistance for development and application of the technology.
				<p>Achieve equitable water use between agriculture and ecosystems and between users, in particular to ensure adequate access of the poor to water</p>	
				<p>Create capacitated institutions at basin (including transboundary), sub-basin and community level in IWRM for agriculture and ecosystems</p>	<p>Establish partnerships between basin authorities and NGO's and private sector and local community (like farmer associations) to capacitate institutions to meet their objectives in IWRM.</p> <p>Coordinate the management of transboundary water resources</p>
Desertification		Support the improvement of existing and the establishment of new centres of excellence and monitoring in developing countries to combat desertification and promote capacity-			

		building to adopt and implement, inter alia, integrated techniques for the conservation of natural resources and their sustainable use, and invite regional and international programmes and funds as well as donors to provide support to affected countries in their endeavours to combat desertifica			
		Support the establishment of and strengthen existing disaster management capacities at all levels, including information and early warning systems that allow effective management of the risks associated with drought, desertification, land degradation and the adverse impacts of climate change			
		Build the capacity of affected communities to address the impacts of desertification by promoting participation, including through participatory approaches that involve civil society, local communities, indigenous people and other major groups, in particular women in decision-making and policy formulation			
Africa		Facilitate and support the strengthening of commercial and technical capacity of farmer organizations, including through extension services archite			
		Support and strengthen Governments' capacities to manage their resources by strengthening and adhering to their policies and legislations			

Annex 5

Guidance of Ministerial Round Table to the thematic programme

- Central position of the Millennium Development Goals
- Knowledge and holistic approaches fitting specific regional and country needs
- Link science to knowledge of local and indigenous people
- Awareness and education campaigns, including integrated water resource management and the ecosystem approach
- New research programmes for emerging issues (e.g sea level rise)
- Impact assessments and evaluations
- Measures for water efficiency, wastewater treatment and water harvesting
- Address the issue of subsidies and their impacts on water use

Theme 2. A new economy - Crucial elements to make it happen

- Set clear timeframes for all proposed actions
- Comprehensive legislative and policy frameworks
- Awareness, education and information sharing on water efficiency
- Diversify local economies to mitigate drought effects
- Redress agricultural subsidies, further liberalise trade and improve market access
- Improve water efficiency through new technologies (including biotechnology)
- Enhance innovative funding mechanisms, taking into account upstream-downstream interdependencies
- Live up to promises made regarding financial resources
- Regional cooperation not only in the field of water management, but also in economic development
- Transboundary, regional and global cooperation, especially in relation to benefit sharing and to sharing costs to compensate for water pollution and inefficient water use

Theme 3 – the enabling environment - Crucial elements to make it happen

- National targets for the achievement of the implementation of actions within a certain timeframe
- Continued international information exchange on lessons learned and good practises
- National strategies for integrated water management
- Active participation of all stakeholders, recognizing the special role of farmers, women, youth, and local and indigenous communities
- Strengthen NGO capacities
- Alliances promoting the social responsibility of the private sector

