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INTERNATIONAL JUSTICE, WATER AND RESPECT FOR CREATION

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The Right to Water: A Matter of International Justice

The eradication of poverty and hunger in rural areas is linked closely to fair and equitable access of the most vulnerable people to basic livelihood assets (including land and water) for domestic and productive uses. Yet we still have far to go before we reach that goal.

In 2004, the World Health Organization and UNICEF estimated that 1.1 billion persons did not have access to an improved water supply (80 per cent of them rural dwellers) and 2.6 billion persons were estimated to be without sanitation.[1]

A major study, the *Comprehensive Assessment of Water Management in Agriculture*, reveals that one in three people today face water shortages.[2]

About a third of people without access to an improved water source live on less than $1 a day. Reducing the financial burden of water spending on the budgets of the poor would have the effect in many cases of increasing household income, improving prospects for escaping poverty and enhancing resilience against shocks.[3]

Millennium Development Goal 7 – Ensure environmental sustainability – includes the following water-related target: 'Reduce by half the proportion of people without sustainable access to safe drinking water'.[4]

[1] WHO and UNICEF. 2006. *Joint monitoring programme for water supply and sanitation database*. Available online at www.wssinfo.org.

[2] CA. 2007. *Water for food, water for life: A comprehensive assessment of water management in agriculture.* London: Earthscan and Colombo: International Water Management Institute.

[3] UNDP. 2006. *Beyond scarcity: Power, poverty and the global water crisis*. Human Development Report 2006. New York.

[4] UN Online. *Millennium Development Goals*. Available at: http://www.un.org/millenniumgoals/.

In order to clarify rights and obligations with respect to achievement of this target, the Commission on Economic, Social and Cultural Rights (CESCR) adopted General Comment No. 15 on the Right to Water in November 2002. This comment provides an interpretation of Articles 11 and 12 of the *International Covenant on Economic, Social and Cultural Rights*.

Although the Right to Water is not explicitly mentioned in the Covenant, the General Comment takes the position that the right to an adequate standard of living implies a right to safe water for personal and domestic uses. In addition, it acknowledges that water is also necessary for securing other economic, social and cultural rights such as the right to adequate food, the right to health, the right to gain a living by work and the right to take part in cultural life. Therefore, in establishing priorities for the allocation of water in situations of water scarcity, the CESCR concluded that priority should be given not only to water for personal and domestic uses, but also to 'the water resources required to prevent starvation and disease, as well as water required to meet the core obligations of each of the Covenant rights'.[5]

The CESCR also emphasized that it is particularly incumbent on States parties, and other actors in a position to assist, to provide international assistance and cooperation, especially economic and technical, which would enable developing countries to fulfil their core obligations with respect to the satisfaction of the Right to Water.[6]

The Growing Need For Water

Even though there is theoretically sufficient freshwater to meet all of the world's projected needs for the foreseeable future, water is not necessarily accessible in the locations where it is needed. Further, unsustainable use is putting additional pressure on available supplies in many parts of the world. One important reason for this is the increase in the per capita demand for water that accompanies our modern lifestyle.

The water needs of a single human being grow exponentially as the person's wealth and position in life increases. Each one of us requires just 2 to

[5] CESCR. 2002. *General Comment No. 15 (2002): The right to water (arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights*. E/C/12/2002/11.26. November 2002. Paragraphs 2-4 and 6. Geneva. See also World Summit on Sustainable Development (WSSD). 2002. *Plan of Implementation*. Paragraph 25 (*c*).

[6] CESCR. 2002. *Op. cit*. Paragraph 38.

5 litres of water per day for survival, and from 20 to 50 litres of water for cooking, bathing and cleaning. In urban areas worldwide the amount of water consumed by households averages around 200 litres of water per person per day. This includes all uses of running water in and around the home, plus other withdrawals from the city water supply for use by public or commercial properties.[7]

Moreover, each day, we 'eat' more water than we drink. On average, FAO estimates that it takes around 1,000 to 2,000 litres of water to produce a kilo of wheat and 13,000 to 15,000 litres to produce the same quantity of grain-fed beef.[8]

The two main factors driving how much more food will be needed and how much water the production of this food will require, are population growth and dietary change. As the world population continues to increase, more water will be needed for the cultivation of food, fibre and industrial crops and for livestock and fish. With rising incomes and continuing urbanization, food habits change towards richer and more varied diets that include greater quantities of foods derived from livestock, fish and horticultural crops that consume more water. It is estimated that food and feed crop demand will nearly double in the coming 50 years.[9]

Water use has been growing at more than twice the rate of population increase in the last century, and, although there is no global water scarcity as such, an increasing number of regions are chronically short of water. By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and possibly as much as two-thirds of the world population could be under conditions of water stress. The situation will be exacerbated as rapidly growing urban areas place heavy pressure on local water resources.[10]

Historically, large-scale water development projects have played a major role in poverty alleviation by providing food security, protection from flooding and drought, and expanded opportunities for employment. In many cases, irrigated agriculture has played a major role in the development of rural economies, supporting economic growth and poverty reduction. However, at the same time, poor communities have tended to suffer the greatest health

[7] CA. 2007. *Op. cit*.

[8] *Ibid*.

[9] UN Water and FAO. 2007. *Coping with water scarcity: challenge of the 21st Century*. New York and Rome.

[10] *Ibid*.

burden from inadequate water supplies and, as a result, have been unable to escape from the cycle of poverty and disease. In semi-arid regions, increasing numbers of the rural poor are coming to see entitlement and access to water for food production, livestock and domestic purposes as more critical than access to primary health care and education.[11]

Low cost small scale water harvesting and irrigation systems at village level, mobilizing local manpower and thus ensuring appropriation by the rural communities are often more needed than large irrigation schemes.

Water scarcity affects all social and economic sectors. As population grows and development needs call for increased allocations of water for cities, agriculture and industries, the pressure on water resources intensifies, leading to tensions, conflicts among users, and excessive strain on the environment. The increasing stress on freshwater resources brought about by the ever-rising demand and growing pollution worldwide is of serious concern to all.

Water scarcity induces competition for water between users, between sectors of the economy, and between countries and regions sharing a common resource, as is the case for international rivers. Many different interests are at stake, and equitable and sustainable solutions must be found. Water conflicts can arise in water stressed areas among local communities and between countries. The lack of adequate institutional and legal instruments for water sharing exacerbates already difficult conditions. In the absence of clear and well-established rules, a greater focus is needed on the peaceful sharing and management of water at both international and local levels. In that regard, it is important to highlight that international food markets serve as a sort of vehicle for transferring 'virtual water' from food exporting water-abundant countries to food-importing water-scarce countries.

Matching Availability With Need

The availability of water within the earth's ecosystem can be measured and discussed either in terms of annual flows or volumes stored. FAO uses the flow approach, since it reflects the relationship of water use to the functioning of the hydrologic cycle. This cycle begins with the evaporation of water from the surface of the ocean. As moist air is lifted, it cools and water vapor condenses to form clouds. Moisture is transported around the globe until it returns to the surface as precipitation. Ninety-

[11] *Ibid*.

seven percent of the returning water falls on the ocean. The remaining three percent, around 110,000 cubic kilometres per year, falls on the earth's land surfaces. When this rainwater reaches the ground, some of the water is retained on top of or in the upper layers of the soil, from where it evaporates or is transpired by vegetation back into the atmosphere. The rest either runs along the surface into streams and rivers or infiltrates the soil and becomes groundwater that seeps its way into the streams and rivers. Eventually water makes its way back to the oceans, where the cycle begins again.[12] Natural landscapes, human settlements, agriculture and industry all withdraw water from these flows.

Rain falling on the ground maintains soil moisture that provides the water needed to maintain the earth's vegetation. It is this soil moisture which is tapped to support rainfed agriculture. This water is referred to by some as 'green water'.[13] Green water accounts for 61 percent of total rainfall over land. Eighty percent of the world's agricultural land is cultivated using green water only[14] and two-thirds of global cereal production relies exclusively on green water. However, whereas yields of cereals on irrigated areas average more than 3 metric tonnes per hectare, yields on rainfed land average only about half that amount.[15]

The remaining 39 percent of the annual rainwater flow moves through rivers and aquifers on its way to the ocean. This is referred to as 'blue water'. Humankind currently withdraws about 3,900 cubic kilometres per year from blue water flow, or about 9 percent of the total, for agricultural, domestic and industrial purposes. Of this, 70 percent is currently used for irrigation, with huge variations across and within countries. Cities and industries withdraw 1,200 cubic kilometres but this is growing rapidly. The increasing demand for blue water and its degradation are important drivers of water scarcity.[16]

It is probably in rural areas that water scarcity affects people most. Smallholder farmers make up the majority of the world's rural poor, and they often occupy marginal land and depend mainly on rainfall for produc-

[12] University of Illinois Urbana Champagne, Department of Atmospheric Sciences. *The hydrologic cycle. Online guide*. Weather World 2010 (WW2010). Available online at: http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/hyd/home.rxml

[13] CA. 2007. *Op. cit.*

[14] FAO Online.a. *The FAOSTAT database*. Available at: http://faostat.fao.org/

[15] *Ibid*.

[16] CA. 2007. *Op. cit*.

tion. They are highly sensitive to many changes – droughts, floods, but also shifts in market prices. However, rainwater is rarely integrated into water management strategies, which usually focus exclusively on surface water and groundwater. Countries need to integrate rainwater fully into their strategies to cope with water scarcity.[17]

Improving the use of green water in agriculture holds considerable potential for managing water scarcity, increasing food production and reducing poverty, whilst maintaining ecosystem services.[18] Realizing the potential of existing rainfed areas reduces the need for water withdrawals from rivers and groundwater for new large-scale irrigation development. However, until recently, 'water attention' has focused on blue water, and green water has only rarely been integrated into water management strategies. But focusing only on rainfed areas carries considerable risks. If adoption rates of improved technologies are low and rainfed yield improvements do not materialize, the expansion in area relying on green water that would be required to meet rising food demand would be around 53% by 2050. Globally, the land for this is available, but agriculture would then encroach on marginally suitable lands and add to environmental degradation, with more natural ecosystems converted to agriculture.[19] It is therefore necessary to also improve the management of blue water.

Continued and increasing extraction of blue water is threatening the integrity of natural ecosystems, leading to the loss of significant biological diversity and undermining the ecosystem productivity on which so many poor people depend. Half of the world's wetlands disappeared during the twentieth century, many rivers no longer reach the sea, and fish species are endangered.[20] High overuse tends to occur in regions heavily dependent on irrigated agriculture and in areas undergoing rapid urbanization and industrial development. Decreasing the demand pressure on blue water by increasing the efficiency of use of blue water in agriculture, as well as in other sectors, is fundamental.

Addressing the Impacts of Climate Change

Climate change, now a major international issue, is expected to account for about 20 percent of the global increase in water scarcity. Countries that

[17] UN Water and FAO. 2007. *Op. cit.*
[18] *Ibid.*
[19] CA. 2007. *Op. cit*.
[20] UN Water and FAO. *Op. cit*.

already suffer from water shortages will be hit hardest. And even the increasing interest in bioenergy created by the need to reduce the carbon emissions that are causing global warming could result in further burden on scarce water resources.

Climate change poses a profound, and profoundly predictable, threat to water security for many of the world's poorest countries and millions of its poorest households. Rich as well as poor countries will feel the impact of changing rainfall patterns, extreme weather events and rising sea levels. But poor countries – and poor people in those countries – lack the financial resources available to rich states to reduce risk on the scale required.[21]

The theme of the Plenary Assembly of the Pontifical Academy of Sciences, held in November 2006, was 'Predictability in Science: Accuracy and Limitations'. In delivering his message to this Assembly, Pope Benedict XVI mentioned that predictability is one of the main reasons for science's prestige in contemporary society and that the establishment of the scientific method has given the sciences the ability to predict phenomena, to study their development, and thus to control the environment in which man lives.[22]

Although the Intergovernmental Panel on Climate Change (IPCC) does not conduct new research, it plays an important role in making the results of the latest scientific research on climate change accessible to policymakers and the general public. In the past its reports have played a major role in inspiring governments to adopt and implement the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

This year (2007) the IPCC will release its first major global assessment of climate change science in six years. In the Summary Report of the Working Group I on the physical science basis for predicting climate change,[23] the IPCC concluded that changes in the atmosphere, the oceans and glaciers and ice caps now show unequivocally that the world is warming. Major advances in climate modelling and the collection and analysis of data have also given scientists very high confidence that the marked increase in atmospheric concentrations of greenhouse gases – carbon dioxide, methane and nitrous oxide – since 1750 is the result of human activities.

[21] UNDP. 2006. *Op. cit*.

[22] Vatican. 2006. *Address of His Holiness Benedict XVI to the members of the Pontifical Academy of Sciences*. Available online at: http://www.vatican.va/holy_father/benedict_xvi/speeches/2006/ november/documents/hf_ben-xvi_spe_20061106_academy-sciences_en.html.

[23] IPCC. 2007a. *Climate Change 2007: The physical science basis. Summary for Policy Makers*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Paris.

The social and economic costs of not responding to climate change are generally seen to be much higher than the costs of taking immediate corrective action. There is much better understanding today about the regional and continental impacts although there remain uncertainties as to when, where and how climate change will affect specific countries. Changes in temperature and precipitation, and an increase in extreme weather events are likely to change water availability and food production potential in many areas of the world, especially Africa and Asia. There is the potential to disrupt food distribution systems and their infrastructure and to change the purchasing power of, for example, the rural poor.[24]

FAO, in collaboration with the International Institute of Applied Systems Analysis (IIASA), has developed the Agro-Ecological Zones (AEZ) methodology, a worldwide spatial soil and climate suitability database. The AEZ approach has been used by IIASA to quantify regional impacts and geographical shifts in agricultural land and productivity potentials, and the implications for food security resulting from climate change and variability.[25] The analysis indicates that, on average, industrialized countries could gain in production potential, while developing countries may lose. Findings that show the potential impact of changing distribution of water availability for food and agricultural production and food security include:

- Global agricultural production potential is likely to increase with increases in global average temperature up to about 3°C, but above this it is very likely to decrease.
- Cold climates would benefit from higher temperatures, and new agricultural land may become available at high latitudes and high elevations.
- There is significant potential for expansion of suitable land and increased production potential for cereals only when considering the use of 'new land' made available by the warming of these cold climates at high latitudes.
- At lower latitudes, especially the seasonally dry tropics, crop yield potential is likely to decrease for even small global temperature increases, which would increase risk of hunger.

[24] IPCC. 2007b. *Climate Change 2007: Climate change impacts, vulnerability and adaptation. Summary for Policy Makers*. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Paris.

[25] Fischer, G., Shah, M. and van Velthuizen, H. 2002. *Climate change and agricultural vulnerability*. Laxenburg, Austria: IIASA.

– Increased frequency of droughts and floods would affect local production negatively, especially in subsistence sectors at low latitudes and will have much more serious consequences for chronic and transitory food insecurity and for sustainable development than will shifts in the patterns of average temperature and precipitation.

The mandate of FAO spans the entire biosphere, both on land and at sea. The living processes of all ecosystems, as well as management interventions of mankind as he utilizes the biosphere, all affect both the capture and release of carbon, the principal factor causing the greenhouse effect. Thus, the activities of FAO, in collaboration with governments of member countries and other stakeholders in the food and agriculture sector, including forestry and fisheries, are important for adequately responding to climate change and containing its adverse effects. Internationally, FAO seeks synergies with activities undertaken by the secretariat and subsidiary bodies of the UN Framework Convention on Climate Change (UNFCCC), the IPCC, sister agencies such as the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), the Secretariats and subsidiary bodies of the Convention on Biodiversity (CBD) and the UN Convention to Combat Desertification (UNCCD), as well as regional organizations. FAO also hosts the secretariat of the Global Terrestrial Observing System (GTOS).

Within FAO, the Interdepartmental Working Group on Climate Change (IDWCC) works to mainstream and coordinate climate change related work among FAO's technical departments. Its most recent report[26] stresses that climate change adaptation will be needed in a variety of ecosystems, including agro-ecosystems (crops, livestock, grasslands), forests and woodlands, inland waters and coastal and marine ecosystems.

The words of Benedict XVI perfectly coincide with the principle guiding FAO's work in respect to climate change activities, namely the 'no-regret' approach. This approach emphasises measures that should be taken in any case – even in the absence of climate change – because they improve the efficiency of present practices in agriculture as well as in forestry or in fishery. At the same time, they put farmers, the foresters or the fishermen in a better position to adapt to or to mitigate the effects of climate change, should they occur. By implementing this approach in matters relating to water specifical-

[26] FAO. 2007. *Adaptation to climate change in agriculture, forestry and fisheries: Perspective, framework and priorities*. Rome: Interdepartmental Working Group on Climate Change.

ly and to the environment more generally, FAO believes that the principles of international justice and respect for creation will be well-served.

FAO's Approach to Improved Water Management

There are great opportunities to improve the ability of poor people to lift themselves out of poverty under conditions of greater water security and sustainability. With the right incentives and investments to mitigate risks for individual farmers, improving water control in agriculture holds considerable potential to increase food production and reduce poverty, while ensuring the maintaining of ecosystem services. Interventions need to be tailored to national and regional characteristics. In the short-term, small-scale water harnessing, irrigation and drainage works carried out at rural community level with local labour are a priority. Their cost is low, their technology is simple and their maintenance is easy. In the medium-term, well targeted investments in rural infrastructure, particularly small scale water control facilities, the upgrading of larger scale facilities and associated institutional reforms, can boost rural productivity and develop local economies. Longer-term actions include the responsible and sustainable management of large river basins, for the benefit of economies as a whole.

Today, agriculture is under intense pressure to reduce its negative environmental impact, especially by depleting water sources, polluting water systems, and contributing to soil infertility and erosion. Irrigation must be managed carefully to reverse environmental damage, which is already extensive, and the spread of water-borne diseases. Overuse of water in one place means deprivation in another. Improving the management of water resources is a question of getting more 'crop for the drop'. These improvements hinge largely on raising the water productivity of both rainfed and irrigation systems, but also on a much cleaner agriculture.[27]

Achieving the World Food Summit target of reducing the number of undernourished persons by half by 2015 and contributing to Millennium Development Goal 1 – Eradication of hunger and poverty – will require the provision of adequate, safe water supplies for domestic uses, food crops, livestock, fish and agroforestry. The challenge of accelerating the provision of water services to satisfy basic human needs and secure sustainable

[27] FAO Online.c. *Water at a glance*. Available at: http://www.fao.org/ag/agl/aglw/WaterTour/index_en.htm.

improvement in the livelihoods of rural people requires addressing all uses within one strategic approach, aiming at an equitable, efficient and sustainable management of water resources. The introduction of improved techniques for water harvesting and exploitation of shallow aquifers can contribute to local food security for poor people in drought and flood-prone areas, ensuring that local food production is as productive as possible and stable, and that households have access to sufficient, safe supplies of water for domestic use, despite irregularities in the timing and intensity of rainfall and consequent unevenness in the recharge rates for underground and surface-level sources of water.

The Special Programme For Food Security

Increasing the productivity of agriculture through better water control can also make a significant impact. Farmers can use a variety of simple and affordable water management techniques to increase their yields and reduce their vulnerability to erratic rainfall or drought. For example, they can build earth barriers or furrows that channel rainwater runoff to plants or rows of plants (in situ conservation). Or they can capture water from a catchment area and direct it to the field (flood irrigation). To prepare for dry periods, they can collect rainwater in reservoirs, ponds and other basins (storage for supplementary irrigation). Studies throughout Africa have shown that rainwater harvesting can increase yields up to three times in the best cases. Not only does it provide more water for crops, but it also helps to recharge groundwater and to reduce soil erosion.[28]

By combining low-cost techniques for water capture and water storage with small-scale irrigation technologies, productivity of poor households in rural and peri-urban areas can be enhanced and food and water security safeguarded. Because the technologies are simple to introduce and to use, the inputs to be provided to beneficiary households should produce immediate impacts, including:

– More assured access to safe drinking water, and to adequate supplies of water for cooking, bathing, laundry, cleaning, home gardens, backyard poultry and small animals
– More stable supply of underground water sources for both rainfed and irrigated agriculture and above ground water sources for irrigated agriculture and tree nurseries;

[28] *Ibid*.

TABLE 1. INDICATIVE LIST OF LOW-COST WATER CONTROL AND WATER USE TECHNOLOGIES.

Uses	Affordable technologies			
	Water capture	*Water storage*	*Water lifting*	*Water use/application*
Domestic[a] • safe drinking water • water for cooking, bathing, laundry, cleaning	Shallow tube wells: • dug wells • drilled wells • springs		Human powered pumps: • hand pulleys and buckets • hand pumps	Water decontamination methods: • water filtration treatments (e.g. sand filters) • boilers for drinking water • chlorination technologies
	Recharge enhancement system: • recharge well for a catchment area Underground water harvesting system: • cistern or other underground water storage structure fed by a catchment area Above ground rainwater harvesting system: • rooftop tank or jar			
Irrigated crop agriculture and tree nurseries	Shallow tube wells: • dug wells • drilled wells • springs	Elevated tanks/structures	Human powered pumps: • hand pulleys and buckets • hand pumps • treadle pumps Animal-powered pumps: • mhitis • Persian wheel	Below ground application methods: • porous ceramic jar • porous and sectioned pipe • perforated plastic sleeve Above ground application methods: • shallow trenches or canals • basin/plot/drip crop irrigation kit • low cost hose irrigation system
Rainfed crop agriculture and tree nurseries	Micro-catchment water harvesting systems for rainwater runoff: • infiltration pits • contour bunds (semi circular, triangular) • eyebrow terraces • Negarim type terraces			
Livestock watering[b]	Shallow tube wells: • dug wells • drilled wells • springs		Human powered pumps: • treadle pumps Animal-powered pumps: • mhitis • Persian wheel	Watering facilities: • watering troughs
	Micro catchment water harvesting systems for rainwater runoff: • contour bunds (semi-circular, triangular)			

[a] Water sources are to be protected against pollution and water points are to be preferably located within a fenced area, at a safe distance from any sanitation facilities. In addition, to ensure the provision of safe drinking water, it is also necessary to provide hand washing facilities.

[b] Water sources are to be protected against pollution and water points are to be preferably located within a fenced area. Measures have to be taken to avoid concentration and overgrazing around water points. Rooftop water harvesting systems could be considered for livestock in confinement.

Compiled by the Land and Water Division of FAO, November 2005.

– More reliable and well-managed water sources for diversifying into livestock and fish.

Table 1 provides an indicative list of affordable water control technologies that are promoted by FAO through the Special Programme for Food Security (SPFS) and other crop and water management programmes of the Organization.

The SPFS is FAO's Flagship Programme for assisting countries to increase productivity and incomes of small farmers by, inter alia, enhancing the efficieny of water use. It was approved in 1994 to implement pilot projects that would demonstrate how to reduce hunger and malnutrition, principally by helping small farmers increase yields of staple food crops and diversify their farming systems. From the outset, the ultimate objective of the SPFS initiative was to assist countries to develop National SPFS Programmes on a large enough scale to make a significant difference in the fight against hunger. These programmes were meant to be implemented in two phases, with Phase I concentrating on pilot projects that would demonstrate the possibilities of rapidly increasing the yield of staple foods and improving household and national food security and Phase II involving formulation of 'bankable projects' that would mobilize the investment required to remove constraints hindering widespread adoption of viable technologies.

In its early years the main objective of the SPFS was to demonstrate how small-scale farmers could improve productivity, reduce year-to-year variability and increase farm incomes and food availability by forming local self-help groups and adopting simple low-cost technologies. Pilot SPFS projects focused on four technical components, namely, (i) to improve water control, (ii) to intensify crop production sustainably, (iii) to diversify production, and (iv) to carry out participatory constraints analysis aimed at identifying practical problems faced by farmers and resolving them. Since 1994, 105 countries have implemented pilot SPFS activities, most of which have included introduction of simple water management technologies such as those shown in Table 1.

Since 2002, in accordance with the experience gained with the Phase I projects, the recommendations of an independent evaluation of SPFS and the renewal of commitment that took place during the Millennium Summit in 2000 and the World Food Summit: *five years later* in 2002, FAO has defined a model for National Programmes for Food Security (NPFS) in which countries would upscale to a national level successful productivity-enhancing approaches and technologies for small farmers, and simultaneously introduce complementary actions to ensure access to food by the non-farming poor. Although these new national programmes often cover a

broader range of components than the initial pilot SPFS projects, the focus is still on helping poor rural households and urban slum dwellers achieve adequate and sustainable livelihoods through increased and more diversified agricultural production for home consumption and income generation. Therefore improvement of water resource management is usually a core component of the NPFS in any country where water scarcity is an increasingly pressing problem. Currently, NPFS are at various stages of formulation or implementation in almost 50 countries around the world.

Regional Programmes for Food Security (RPFS) provide complementary support, including, on issues related to management of shared water resources and environmental planning and management. On the occasion of the World Food Summit: *five years later* (WFS:*fyl*) in 2002, FAO prepared draft RPFS for 21 regional economic organizations. These draft programme documents were presented and discussed during the side events of the WFS:*fyl* and at subsequent meetings with regional development banks in the various regions to facilitate mobilization of resources. As a result, extra-budgetary funds were obtained for the implementation of regional programmes for the Caribbean Forum (CARIFORUM), the Pacific Islands Forum (PIF) and the West African Economic and Monetary Union (UEMOA). FAO has also supported formulation of the Comprehensive Africa Agriculture Development Programme (CAADP), following the launch of the New Partnership for Africa's Development (NEPAD) in Abuja in 2001. To implement the CAADP, bankable investment project profiles have been formulated for investments in various sectors, including for water management and food security.

South-South Cooperation (SSC) has been a fundamental and integral part of the SPFS implementation strategy since 1996. Its objectives are to provide cost-effective expertise to countries that are implementing the SPFS, to enhance solidarity among developing countries and to forge long-term interaction at an operational level. Under this initiative, emerging developing countries send field technicians and experts to recipient countries for a period of two to three years, where they work directly with rural communities and farmers involved in the programme. To date 37 SSC agreements have been signed, in which the cooperating countries have committed themselves to provide up to 2,600 SSC specialists. As of mid-2006, a total of 1,348 experts and technicians had been fielded in 32 countries and two sub-regions to support SPFS projects.

Under the NPFS, the SSC will continue to play a critical role. Recently, FAO has entered into a strategic alliance with the Government of China to

eventually deploy an additional 3,000 SSC experts and technicians to national and regional programmes for food security. Similar arrangements are at various stages of discussion with other advanced developing countries. Providing this level of expertise will significantly strengthen the role and impact of SSC in support to NPFS and RPFS, both in terms of numbers and in terms of technical coverage, and is expected to lead to rapid improvement in the livelihood of small-scale rural producers.

FAO and UN-Water

UN-Water is made up of the UN agencies, programmes and funds that have a significant role in tackling global water concerns. It also includes major non-UN partners who cooperate with them in advancing progress towards the water-related goals of the Decade Water for Life and Millennium Declaration.

In 2003, UN-Water was officially endorsed as the new United Nations mechanism for follow-up of the water-related decisions reached at the 2002 World Summit on Sustainable Development and the Millennium Development Goals. It supports Member States in their efforts to achieve water and sanitation goals and targets.

UN-Water's work encompasses all aspects of freshwater, including surface and groundwater resources and the interface between fresh and sea water. It includes freshwater resources, both in terms of their quality and quantity, their development, assessment, management, monitoring and use (including, for example, domestic uses, agriculture and ecosystems requirements). The scope of the work of UN-Water also includes sanitation – encompassing both access to and use of sanitation by populations and the interactions between sanitation and freshwater. It further includes water-related disasters, emergencies and other extreme events and their impact on human security.

UN-Water acts at global, regional and country level. It adds value to the work and expertise of separate UN agencies and programmes. It brings coherence and integration among them, and serves as the common voice of the UN system on water and sanitation. UN-Water is recognised as the best and most promising example of inter-agency collaboration within the UN system, responding to the request by member countries to act together as *One United Nations*.

UN-Water works in close collaboration with non-UN partners. Today, 24 United Nations Agencies, Funds and Programmes are members of UN-

Water, and 10 international NGOs are partners. UN-Water provides timely information on status and trends of the world's freshwater resources, through the World Water Development Report. It is also responsible for organizing the annual United Nations World Water Day (22 March), freshwater related reports to the Commission on Sustainable Development and the United Nations Decade on Water 2005-2015.

FAO has participated in the creation of UN-Water and has been an active member since its inception in 2003. In view of the critical role water plays in agriculture, and of the prominent role of agriculture in global water use, with more than 70 percent of all water withdrawals, FAO considers inter-sectoral collaboration in the field of freshwater of utmost importance in the world's efforts to reaching all the Millennium development goals, in particular those related to Goal 1 'Eradicate extreme poverty and hunger' and Goal 7 'Ensure environmental sustainability'.

FAO's main thrust in UN-Water is to ensure that the role water plays in agriculture is well understood and valued in water debates. In particular, FAO collaborates with IFAD to highlight the critical role water plays in sustaining the livelihood of smallholders in rural areas. Too often, because of the relative importance of water use in agriculture, agriculture is considered as the sole responsible of all the problems the water sector encounters today: scarcity, encroachment on the environment, pollution, loss of biodiversity. FAO acknowledges the dimension of today's water crisis: it stresses the important role agriculture can play in addressing this crisis, and efforts that need to be done to increase the productivity of water use and reduce negative environmental impacts of agricultural activities, but it also highlights the need to achieve this in a way that contributes to the improvement of the conditions of living of rural populations. It also stresses the need for a regional approach that recognises large discrepancies in the degree of development of water management in agriculture and the need for accelerated investments in infrastructure in support to rural development, in particular in sub-Saharan Africa. FAO also stresses the need for a comprehensive approach to water development at local level that takes into account water uses for domestic purposes as well as for productive activities like agriculture, livestock production or aquaculture.

The theme of World Water Day 2007, which was celebrated on 22 March, was 'Coping with water scarcity'. This choice reflects the fundamental role agriculture plays in what is considered as one of the main challenges of the 21st Century.

At the same time, FAO has accepted to take the lead in further developing the programmes of UN-Water, and was elected Chair of UN-Water for the period 2007- 2008. In line with the spirit of UN-Water, FAO will seek to reinforce inter-agency collaboration to better serve the member countries. At national level, it will seek practical ways to avoid duplications and contrasts in approaches to water resources management, and enhance the overall effectiveness of UN agencies in their support to governments. At international level, it will focus on better monitoring of water-related targets and issues so as to better inform global policies and decision making processes. It will also continue focussing on the issue of water scarcity and the search for effective and equitable ways to address it.

Conclusion

The potential exists to provide adequate and sustainable supply of quality water for all, today and in the future. But there is no room for complacency, and it is our common responsibility to take the challenge of today's global water crisis and address it in all of its aspects and dimensions.

At the international level, countries need to increase their cooperation in dealing with the management of transboundary water, focusing on negotiations and dialogue and on the quest to optimize the overall social and economic benefits of equitable and sustainable water use. At the national level, policies and institutions need adapting in order to address competing uses in a fair and equitable way. At the local level, besides investments in water control facilities, better management practices are needed in all fields, leading to increased sustainability and equity in access to water. At all three levels, the development of effective conflict-resolution mechanisms has become increasingly important. Together with its partners in UN-Water, FAO is committed to assist Member Nations in reaching these objectives.