Brussels Policy Development Briefing n° 22

The water we eat: challenges for ACP countries in times of scarcity

Wednesday 13th April 2011, 8h30 – 13h00

EC, Building Berlaymont: Rue de la Loi 200, Room Walter Hallstein

http://brusselsbriefings.net

Context

Over one-third of the world's population has to contend with water scarcity[1]. Water shortages already represent a key constraint to food production in many breadbasket areas of the world, yet we will need to produce up to 70% more food if we are to feed the projected population of 9 billion by 2050. If current patterns of farming persist, the amount of water used will increase by 70% to 100%. The food price crisis of 2008 was caused, in part, by drought, and the price of food is again rising above the levels seen in 2008. Will there be enough water to produce enough food in future, and where will it come from?

Water challenges will increase significantly in the coming years. The urban population in developing countries will rise dramatically, generating demand well beyond the capacity of already inadequate water and sanitation infrastructure and services. This may seriously reduce the availability of water for all users, and particularly for agriculture, which currently accounts for 80% of total freshwater withdrawals in developing countries. Unsustainable agricultural practices and industrial expansion are likely to lead to an increase in water pollution and water use. Indeed, the exploitation and contamination of water resources resulting from urbanization, agricultural intensification and land degradation have already led to significant declines in water quality and quantity.

Experts predict that climate change and climate variability, particularly the anticipated increases in the frequency and severity of extreme events, will lead to a crisis of water scarcity in many parts of the world. By 2025, nearly two-thirds of the world's population will live in water-stressed regions. Water scarcity is likely to become a more frequent cause of conflict between countries and user groups[2]. The recent acceleration in the production of biofuels is also increasing pressure on both land and water resources[3]. ACP countries face enormous challenges, and they will have to improve their water productivity if they are to meet the Millennium Development Goal (MDG) of halving poverty and hunger by 2015. The challenges will be exacerbated by climate change. However, they are not insurmountable. They can – and must – be addressed through research, increased investment and appropriate policies.

Water availability and agriculture

Water problems fall into two main categories. Under the first, there is physical scarcity of water as a result of overuse: demand exceeds supply, with consumers using water faster than it can be replenished. Under the second, there is an adequate water to meet demand, but access is limited due to socio-economic or institutional factors or a lack of infrastructure. Much of the discourse on water today concerns physical scarcity. But when we think about food security and poverty alleviation, it is the lack of access that deserves greater attention.

In the world of physical water scarcity, river flows are much reduced, groundwater levels are falling and ecosystems are threatened. Without sufficient water food security targets will not be met. Agriculture's use of water resources, and impact on water resources, is complex and dynamic, especially in the context of climate change and variability, and involves trade-offs between economic, social and environmental demands. When water is physically scarce, it is imperative to reduce waste and improve the productivity of each drop used in agriculture.

While reducing waste is important, the problems surrounding poverty and hunger are mostly in regions where water is economically scarce. This issue deserves much greater attention. Most of those affected live in Sub-Saharan Africa and South and South East Asia. They depend on agriculture for their

[1] Comprehensive Assessment of Water Management in Agriculture, http://www.iwmi.org/assessment
[2] http://www.undp.org/water/pdfs/241456_UNDP_Guide_Pages.pdf
[3] http://www.unesco.org/water/wwap/wwdr/wwdr3/pdf/08_WWDR3_overview_of_key_msgs.pdf

livelihoods, for which there are few alternatives. Less than 6% of the global area under irrigation is in Africa and most of the continent's irrigated land is to be found in North Africa. Increasing food production, and reducing hunger and poverty, depends on the provision of a sustainable supply of water to agriculture. Waste is not the main issue here; getting sufficient water to more farmers is.

The impact of climate change on water availability

While few scientists doubt the reality of climate change, there is considerable uncertainty about its impact on water availability, agricultural production systems and ecosystems. Future policies to address the sustainable management of water resources in agriculture will be greatly influenced by new data on climate variability, such as changes in the timing of annual rainfall or periods of snow-pack melt. In some regions, crop yields could actually increase. In others, climate change will lead to yet more stress on already scarce water resources, while some areas are likely to experience an increase in the severity of floods and droughts, imposing greater economic costs on farming and the wider economy.

Water and Food Supply: the challenge of innovation

Agriculture is, and will continue to be, a key sector for low-income countries and the poor. In developing countries, 80% of export earnings come from agricultural production. It is also the thirstiest sector: irrigated agriculture accounts for almost 70% of global freshwater use. Limited and unreliable access to water limits agricultural productivity in many regions. Climate change could make matters worse.

At present, 17% of the world's cultivated land is under irrigation, producing 40% of the world's food. Much of the projected increase in demand for food will have to come from improved and expanded irrigation, but this is only a partial solution. Most new large-scale irrigation systems are financially out of reach of poor smallholders. The major portion of the crops produced worldwide is still grown by rain-fed agriculture and greater emphasis should be placed on employing practices that use rainwater more efficiently.[4] The challenging question here is whether rain-fed agriculture can be significantly expanded and its productivity increased. Greater and more effective use of water harvesting and supplementary irrigation could help to reduce the need for increased water use.[5]

The environmental costs of producing more food with more water have been considerable. Groundwater levels are declining, rivers are drying up and water courses are being polluted by the excessive use of pesticides and fertilizers. In some cases, invasive species have covered huge water areas throughout the world, clogging up irrigation channels, threatening infrastructure and leading to the collapse of fisheries. While we need water for food, we also need genuinely sustainable agricultural practices.

Water governance for poverty reduction

Governments lack incentives to implement the reforms necessary to ensure more productive, sustainable and equitable use of water. Agricultural support policies linked to production can actually encourage *less* efficient use of water, lead to off-farm pollution and exacerbate flooding. Isolating and quantifying the overall economic efficiency and environmental effectiveness of farm support on water resources, however, is difficult and further analysis on causes is needed.

In the case of both physical and economic water scarcity, equity and security, in terms of water access rights, are critical issues for the poor. Water policies and interventions have an impact, both technological and institutional, on how poor men and women access water for various uses. The roles of male and female farmers and socio-economic, caste and other differences within communities must be taken into account when considering water policies and interventions.

At the same time, there is a need to improve policy integration between the sectors dealing with agriculture, water, energy and the environment. Agricultural policies linked to production and inputs, such as water and energy, can encourage less efficient use of resources and lead to off-farm pollution and soil degradation, which can exacerbate flood damage. In the case of links between the support for energy in agriculture and the production of biofuels from agricultural feedstock, further progress is required to develop policy coherence in the context of improving water resource management in agriculture.

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[4] http://www.undp.org/water/pdfs/241456_UNDP_Guide_Pages.pdf

[5] Colin Chartres, Director General, International Water Management Institute, Colombo, Sri Lanka
2009. Feeding everyone: the big water issue. Stockholm Water Front, 2. 20p.
CHARTRES, COLIN. 2009. Feeding everyone: a case for water governance reform. Stockholm Water Front, 2:6-8.
http://www.siwi.org/documents/Resources/Water_Front_Articles/2009/Feeding_Everyone.pdf

More integrated and coherent policy approaches are beginning to take shape. For example, the restoration of land in flood plains through tree planting has helped to reduce the impact of floods, improved water quality, and lead to other benefits, such as the restoration of biodiversity and an increase in carbon sequestration. There has also been progress in lowering overall agricultural support levels and in decoupling support from production and inputs. This is beginning to encourage more efficient use of water, better adaptation to water scarcity and less off-farm pollution. Well-targeted agricultural support can maintain farming systems in those countries where there is an association between farming and the provision of ecosystem services.

Some emerging issues and their implications for ACP countries

Mastering the 'political economy' of water pricing is critical, not only to signal the rising scarcity value of water, but also to direct water to high-value uses, attract investment and improve water services. At the same time, we must protect water access and rights for the poor. Agricultural trade and water use are intrinsically linked.

The principle of virtual water is really simple. Water is required for the production of food such as cereals, vegetables, meat and dairy products. The amount of water consumed in the production process of a product is called the 'virtual water' contained in the product (Allan, 1998). With the trade of goods, especially food, there is a virtual flow of water from commodity exporting countries (food and manufactured goods) to the countries that import those commodities. Instead of producing these goods themselves, the importing country can utilise this water for other purposes than those which would have been necessary for its production. A water-scarce country can import products that require a lot of water for their production rather than producing them domestically. This results in real water savings relieving the pressure on water resources. The international trade in agricultural commodities is therefore a trade in virtual water, as well as in the commodities themselves. The growing global interest and attention to virtual water stems, in part at least, from its growing importance for food security in countries where populations are rising and water is becoming scarcer. The importance of virtual water and its potential to balance water-rich and water-poor areas in the world through the international trade in agricultural products needs to be looked at in the context of ACP countries.

The water footprint[6] is an indicator of water use that looks at both the direct and indirect water use of a consumer or producer and poses the problem of equitable use of our limited global freshwater resources. While the concepts of virtual water and water footprints help in creating awareness on water consumption and saving water by modification of diets, more understanding is needed on how they contribute to improve water availability for local food security and to preserve the environment in the poorest countries.

Objectives of the Briefing

To improve information sharing and promote networking, CTA, the DG DEVCO from the European Commission, the ACP Secretariat, Concord and various media organise bimonthly briefings on key issues and challenges for rural development in the context of EU/ACP cooperation. The Briefing on 13th April 2011 will discuss the relationship between water resources and agriculture in ACP countries. It will build upon the work done at the CTA annual seminar[7] on *Integrated water management for sustainable agriculture* held in South Africa in November 2010. The Briefing will: i) raise awareness about existing and emerging key challenges; ii) promote the exchange of information and expertise; iii) feed into the debate various perspectives on policy options.

Target group

More than 150 ACP-EU policy-makers and representatives of EU Member States, civil society groups, research networks and development practitioners, and international organisations based in Brussels.

Available material

Input and comments before, during and after the meetings will be included in the Briefings blog: http://brusselsbriefings.net/. A short report and a Reader in printed and electronic format will be produced shortly after the meeting.

[6] Water Footprint Network. http://www.waterfootprint.org/?page=files/home

[7] http://annualseminar2010.cta.int/

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8h00-8h30 Registration

8h30-8h45 Introductory remarks

8h45 – 10h15 Panel 1: The water challenge for agriculture and food security
Water challenges will increase significantly in the coming years. Agriculture's use of water and impact on water resources are complex and dynamic, especially in the context of climate change and variability on agricultural systems, and involve trade-offs between economic, social and environmental demands. Limited and unreliable access to water limits agricultural productivity in many regions. Water loss from irrigation systems and poor water management are exacerbating the water crisis in many countries. What are the lessons learned during the past 50 years that will help us find suitable and innovative solutions?
Panellists:

- Enough water for enough food: Trends and prospects in water management for agriculture
  David Molden, Deputy Director for Research, International Water Management Institute (IWMI)
- Water challenges affecting farmers: learning from experience
  Dyborn Chibonga, Chief Executive Officer, NASFAM, Malawi
- Virtual water trade and the potential gains for ACP countries
  Tony Allan, School of Oriental and African Studies / King's College London Water Issues Group
- Water scarcity and the right to food in the ACP context
  Shiney Varghese, Senior Policy Analyst, IATP, USA

10h15 – 10h30 Coffee break

10h30 – 13h00 Panel 2: What policy options and future governance to secure water for all?
The world has enough water, but we need to manage it better and improve water governance. Water governance is the key to resolving or preventing water conflicts, and improving the productivity of existing water uses. To assist policy-makers, we need to examine the institutional and policy responses which need to be in place or strengthened. We will also look at some emerging issues, such as virtual trade and water footprints and their implications for ACP countries.
Panellists:

- What are the solutions to agricultural water management?
  Charlotte de Fraiture, International Water Management Institute (IWMI)
- Water governance: policy and investment options for Africa
  Elijah Phiri, Professor of Soil Science, University of Zambia, Africa and Leader of Pillar 1, Land and water management, NEPAD/CAADP
- Water footprint assessment: optimizing water use for social, environmental and economic benefits
  Ruth Mathews, Executive Director of the Water Footprint Network

Conclusions

Networking Lunch