

## **MEDIA ADVISORY**

# **THE INSATIABLE THIRST OF AGRICULTURE - DECREASING CONFLICTS BETWEEN AGRICULTURE AND ENVIRONMENT**

**20 NOVEMBER, 17:00 – 17:30  
PRESS CENTRE  
QUEEN SIRIKIT CONVENTION CENTRE**

### **Speakers**

Prof. Frank Rijsberman, Director General of the International Water Management Institute

Dr. David Molden, Coordinator CGIAR Comprehensive Assessment of Water Management for Agriculture

Dr. Ger Bergkamp, Coordinator IUCN Water & Nature Initiative

### **Content**

Agriculture uses about 70% of all water withdrawn from nature for human use. Its use of water and the pollution of water due to agricultural practices are putting great stress on the environment. An estimated 60% of the world's major rivers are now fragmented to some extent by dams and other forms of hydraulic infrastructure, and an estimated 1.4 billion people live in river basins where water use is already leading to serious environmental damage.

The impacts are widely felt; habitats of wildlife are fragmented, rivers are polluted by agricultural run-off and biodiversity is declining. According to IUCN at least 2000 of the world's freshwater fish species are threatened, endangered or extinct.

The presenters will focus on ongoing initiatives to address the insatiable thirst of agriculture. They will present practical solutions from both the agricultural and conservation communities, and at the same time pose challenges to increase the efficiency of agricultural production to allow more water for domestic use and the conservation of the environment.

Ensuring food security for the growing populations of the world, whilst reducing our impacts on the environment, is the key challenge for this decade. The focus needs to be on increasing the productivity of water used to produce food. While currently every kilogram of grain costs as much as 1000 to 2000 liters of water to produce, the minimum required is as little as 500 liters. This shows the enormous potential to use water in agriculture better: grow more crop per drop and leave more water for the environment.

## **BACKGROUND**

### **Practical Tools to reduce Water Conflicts between Agriculture and the Environment**

**Bangkok - Nov 20<sup>th</sup>, 2004.** International researchers, government policymakers and development organizations came together at the IUCN World Congress in Bangkok to tackle one of the most pressing challenges of the 21<sup>st</sup> century – how can the world produce enough food for future generations while using less water - in a way that is environmentally sustainable ?

Agriculture uses about 70% of all water withdrawn from nature for human use and growing concern over the environmental degradation caused in many countries by large-scale irrigated agriculture has led to increased efforts by the international community to tackle a complex problem that has traditionally divided environmentalists, irrigation engineers and farmers groups.

Roughly half of the 45 000 large dams existing in 140 countries, have been built solely or primarily to provide water for irrigated agriculture. An estimated 60% of the world's major rivers are now fragmented to some extent by dams and other forms of hydraulic infrastructure. The impacts are widely felt; habitats of wildlife are fragmented, rivers are polluted by agricultural runoff and biodiversity is declining. According to IUCN at least 2000 of the world's freshwater fish species are threatened, endangered or extinct.

'Ecosystem and agricultural productivity is often exhausted by the urgency to meet the needs of growing populations. The challenge is to find new tools and techniques in agriculture and conservation that meet these needs, whilst ensuring we can enjoy them for generations to come,' says Dr. Ger Bergkamp, Coordinator of the IUCN Water & Nature Initiative, 'When soils, forests or wetlands are lost, we also lose many of the natural resources including fresh water on which so many local communities directly depend.

'The bottom line is that cities are rapidly expanding and meeting the demand for water for domestic use and industry will be the political priority. This means that competition for water between agriculture and the environment will increase'. explains Prof. Frank Rijsberman, Director General of the International Water Management Institute (IWMI), 'the good news is that agricultural research is proving that it is possible to strike a balance where water for food and livelihoods in rural areas can co-exist with healthy ecosystems. We have shown water productivity in agriculture can be increased dramatically'.

IWMI together with IUCN, the World Resources Institute and Kassel University, recently developed a 'global environmental water scarcity map'. This is the first time that the water requirements of the environment have been estimated on a global scale. It is hoped that providing information on environmental water needs will become a part of 'integrated water management', which takes into account the different water users, their needs and the institutional frameworks needed to manage water throughout the length of a river basin.

'We are taking too much water from our rivers, streams and lakes', says Ger Bergkamp.' The water scarcity map shows that 1.4 billion people are living in river basins where high water-stress levels threaten the environment. The research on environmental flows provides a tool that will help planners, water managers and local communities to make better decisions about the amounts of water that they can exploit to provide food security without degrading aquatic ecosystems.'

Providing information on the needs of different sectors, including the environment, and then negotiating water allocations between various stakeholders is one practical tool to resolve conflicts between agriculture and environment. This tool, called 'Environmental Flows', has been developed and implemented by the IUCN Water & Nature Initiative and the Comprehensive Assessment of Water Management in Agriculture.

The IUCN Water & Nature Initiative demonstrates improved management in ten river basins around the world. It has developed tools such as Environmental Flows and economic valuation of ecosystems that directly contribute to resolving conflicts on water. The Comprehensive Assessment is a global research initiative that takes stock of investments in agricultural water use to shape better policies and approaches for the future. It has already identified a number of different approaches that promise a more sustainable future for agricultural water management.

'Whether it is understanding the economic and environmental implications of groundwater pumps being used by Indian farmers or exploring the potential for developing small scale irrigation

approaches in Africa – there are numerous options to improve the way water is managed from the farm level to the entire length of the river basin’, explains Prof. Rijsberman.

One of the main solutions lies with increasing water productivity in agriculture. It currently takes 1000 to 2000 liters of water to produce a kilogram of grain while under ideal circumstances it can be produced for as little as 500 liters per kilogram. Research has shown it is possible to boost crop yields whilst saving water by using a combination of farming practices and crop varieties that require less water. More precise irrigation application using sprinkler or drip technologies is gaining popularity in water scarce countries. In dry areas deficit irrigation, which involves applying a limited amount of water at a critical time in the plant’s development - can boost productivity of water used to produce food by 100-200%.

Improving productivity also reduces the need for investments in new water withdrawals — investments which many countries cannot afford in terms of financial and ecosystem costs. But technical solutions need strong supporting policies. For example, agricultural subsidies in rich-countries may discourage farmers in Africa from investing in productivity-enhancing inputs because crop prices are too low for them to get a return on their investment. Firm land and water rights are needed so people will invest in long-term improvements.

‘Solutions to increase agricultural productivity with less water are urgently needed, together with a package of incentives and policies to make these solutions actually used by farmers around the world, says Dr. Molden, the Coordinator of the Comprehensive Assessment of Water Management for Agriculture.

It is also possible to design, construct and manage irrigation systems to maintain and in some instances even enhance biodiversity. More attention needs to be paid to the development of irrigation infrastructure that support the multiple uses of water. Irrigation systems can be designed that maintain terrestrial and cascading corridors to allow for the free movement of animals and fish between habitats and spawning grounds. This can be done by incorporating hedgerows and corridors of natural vegetation interconnecting parcels of irrigated land. Designing irrigation canals that are unlined may better support a wider diversity of flora and fauna and in many larger irrigated landscapes, large mono-cropped areas can be broken up by identifying, protecting and linking natural habitat patches that provide for greater biodiversity.

Engaging local communities in the process of biodiversity conservation is a critical element of managing water sustainably for meeting food and environmental needs. There is a pressing need to raise awareness amongst communities on the implications of alternative regimes of water use and the tradeoffs. **Ends.**