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MEDIA RELEASE

16 March 2009

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The High Cost of Missed Opportunities in Public Sector Water Management

“Missed opportunities are costing governments millions,” says Dr. Colin Chartres, Director General of the International Water Management Institute. IWMI’s research on efficient water use is demonstrating practical ways to manage water for multiple use by households and by users in the agricultural, industrial and energy sectors. “We can avert the looming water crisis,” says Dr. Chartres, “if we can just revise the way we think about using water and how we invest in supply and treatment. Our sectoral focus is what stands in the way of creating links among and between sectors that would result in new options and opportunities and far more effective use of water.”

Research conducted by the International Water Management Institute’s worldwide network offers numerous illustrations of how water infrastructure can be planned to facilitate multiple uses of water. “The reality is that most systems that were designed for a single use end up being used for other purposes anyway,” says Dr. Chartres. “For example, canals designed and built for irrigation are almost always used for washing, bathing and fishing as well, so why not plan for those uses from the beginning?”

Designing a multiple use water service or MUS opens up new opportunities to provide better, more efficient water services and creates livelihood opportunities for people living in an MUS water service area. IWMI’s research has shown that integrating irrigation water and drinking water supply, for example, contributes to better health, improved food security and more income generating opportunities, especially for women. Multiple use systems are also more cost effective and the additional income earned from more productive uses of water can help cross-subsidize domestic uses. The added benefit is less damage from users trying to adapt a single-use system to their own needs without permission or supervision.

Barbara Van Koppen, the principal researcher at IWMI’s South Africa office says, “Multiple use systems on homesteads greatly benefits those with little or no land, especially women. Multiple use systems also contribute to the Millennium Development Goals and delivers “more MDG per drop” than single-use systems.” IWMI’s research shows that investing in MUS on homesteads can generate an increase in net annual household income of USD 100-500.

Domestic water supply has benefits beyond additional income. IWMI estimates that together, the women of Africa spend 40 billion hours a year fetching water. Studies show that when they are relieved of that burden, women will put those hours to productive uses. Improving domestic water supply in Gujarat, India, for example, allowed women to spend time doing things that earned them an additional USD 16-115 per year.

One of the reasons this isn't happening more often is because too few countries invest sufficient resources in getting the data they need to tell them how much water is available and where and how it is being used. Without that data it is just not possible to plan or to formulate policies that promote links between government departments responsible for water, agriculture, sanitation, environment and other sectors.

Dr. Chartres says, "Politicians are generally not well briefed on the scale of the water crisis we could be facing. If we don't rethink how we use water, many countries will undoubtedly face more frequent and more severe food crises and in some cases famine and social breakdown." Scientists at IWMI predict that failing to meet the Millennium Development Goals on safe drinking water and improved sanitation will lead to increased incidence of disease, higher mortality rates and stalled development prospects for hundreds of millions of people.

Without a new view of water management we are very likely going to see a collapse of the 'environmental services' provided by watersheds and wetlands that give us most of our freshwater, which means dramatic increases in the cost of water treatment. Increased frequency of water supply interruption and water rationing in cities would affect water users in every sector and could lead to conflict and 'water wars'. "The cost in dollars would be enormous," says Dr. Chartres, "the cost in environmental damage and human suffering would be impossible to calculate."

Conventional sectoral thinking means that while some developing countries might meet the Millennium Development Goal on access to safe drinking water, they probably won't meet the Goal on improved sanitation. The sanitation sector is not spending enough attention to or investing enough in toilets, latrines and treating household sewage.

Most cities in developing countries have limited sewage treatment facilities. Many existing facilities don't work because there is no maintenance. Other systems provide primary treatment and then discharge the partially treated domestic and industrial waste into waterways or the ocean. Dr Pay Drechsel, Leader of IWMI's thematic research on Water, Quality, Health and Environment, says "Over 90 per cent of the waste water generated enters the environment through drains and gutters with no effective treatment. In three out of four cities in the developing world, farmers are irrigating food crops with polluted water."

"Not everything in 'polluted' water is harmful," says Dr. Drechsel". Waste water from homes and factories can be rich in nutrients for food and fodder crops. In peri-urban areas, waste water is often the only source available during the dry season. An IWMI survey of 53 cities showed that over 700 million people are eating fruits and vegetables irrigated with untreated or insufficiently treated waste water, which could pose a serious health hazard.

"This is a great example of an opportunity for cross-sectoral collaboration and multiple use of water," says Dr. Chartres. The current situation is that we have farmers who are putting nutrient-rich waste water to good use on the one hand, and expensive high-tech but failure prone treatment plants trying to remove those nutrients on the other. In Ghana, of the 70 treatment plants installed, only 8 still are operating as planned. Meanwhile, IWMI research shows there are ways of complementing simple treatment plants with safe irrigation practices to reduce health risks. Treatment costs are reduced,

farmers get the water they need to grow their crops, and the city inhabitants get a secure supply of safe, locally produced food.

There is a finite amount of water on our planet, but more people wanting to use it for more purposes. High tech solutions like carbon-neutral desalination plants are a long way off and will be too expensive for most developing countries if we do build them. Our best option is to spend the money we have looking for ways to grow more food with the same amount of water and developing energy-efficient water recycling. One of the most promising avenues of research is MUS: multiple use water services.

Water flows across borders on and under the ground according to the shape of the landscape and its own hydro-geological rules. Yet we still have systems of governance that give responsibility for surface water to one agency and groundwater to another and there is seldom any framework or incentive for the two to work together. Dr. Chartres remains optimistic. "The concept of Integrated Water Resources Management offers a way of looking at water management that opens up a world of new options and opportunities. All we have to do is make the right connections and the right investments. Looking at water management holistically rather than by sectors opens up a whole new investment arena."

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Notes to editors:

The following video/audio clips and background material are available on our newsroom page at <http://www.iwmi.cgiar.org/WorldWaterDay/>

Interviews:

*Videos: World Food Crisis and its Impacts on the Poor, with Dr Colin Chartres
Missed Opportunities for Sharing Water, with Dr. David Molden
Irrigation using Wastewater, with Dr. Pay Drechsel*

Audio: Multiple Use Water Systems with Dr. Barbara van Koppen

*Print material : Bridging the Water Divides: Addressing Missed Opportunities
Climbing the Water Ladder: Multiple Use water Systems*

Australian soil and water scientist, Dr. Colin Chartres is Director General of the Sri Lanka-based International Water Management Institute (IWMI), a non-profit research organization focusing on the sustainable management of water resources for food, livelihoods and the environment. IWMI is one of 15 research centers supported by the Consultative Group on International Agricultural Research (CGIAR). Chartres has 30 years' experience in driving research and policy reform in natural resources management.

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Dr. Pay Drechsel is a trained environmental scientist with over 20 years of experience. He also leads several projects on food safety where usually untreated wastewater is used for irrigation in urban and peri-urban agriculture..

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Dr. Barbara van Koppen is Principal Researcher Poverty, Gender, and Water at IWMI. Her focus is on action research on rural water development for multiple uses in Africa and Asia. She is based in IWMI's Southern Africa Regional Program.

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