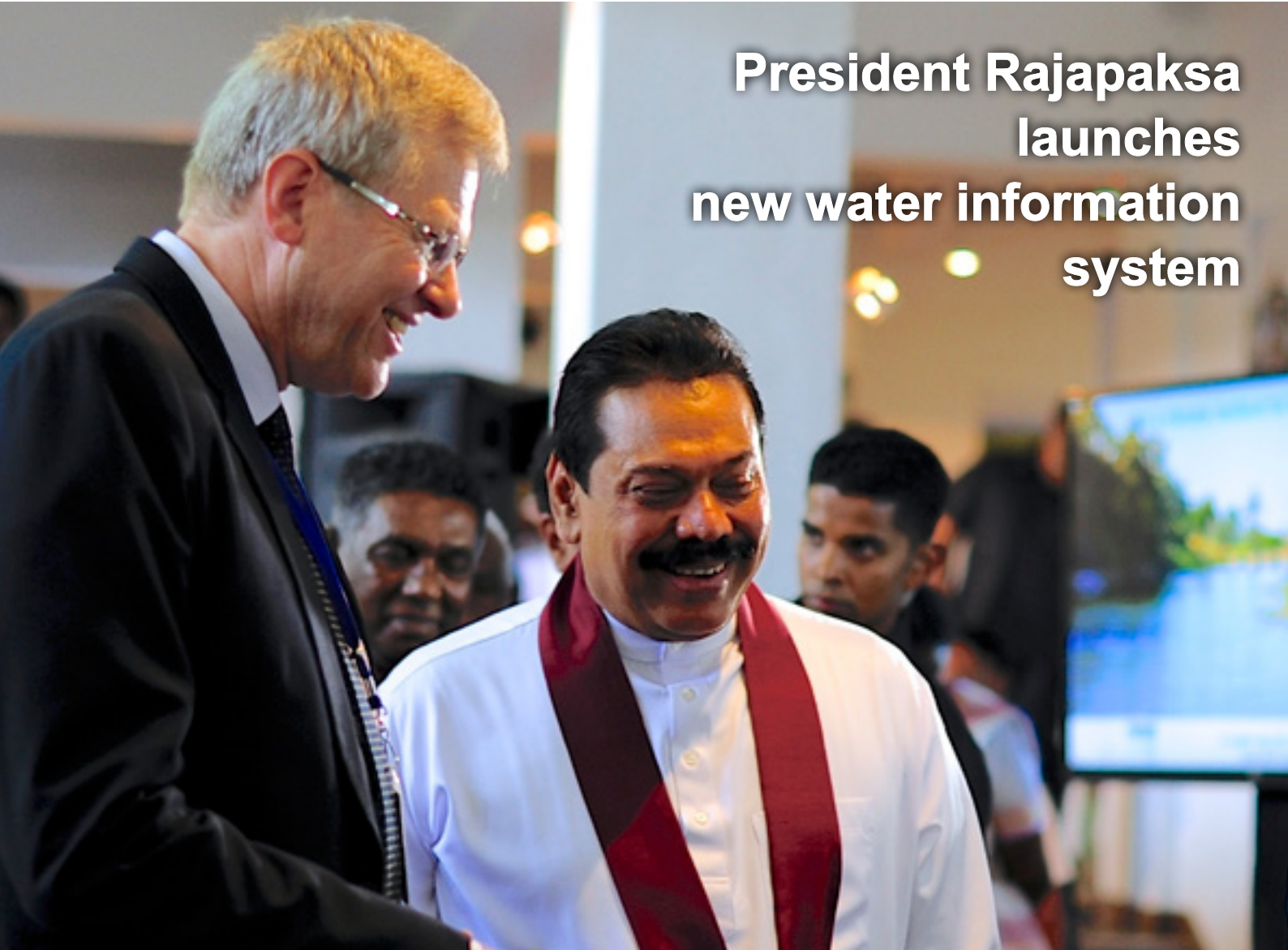


LINDHALanga

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News, views and discussion on water, development and the environment in Sri Lanka

Volume 01 No. 1 August 2014



President Rajapaksa launches new water information system

H. E. President Mahinda Rajapaksa at IWMI with Director General Jeremy Bird (photo: Neil Palmer/IWMI).

H.E. President Mahinda Rajapaksa officially launched the Sri Lanka Water Resources Information System during a courtesy visit to the International Water Management Institute (IWMI) on January 17, 2014.

The President unveiled a commemorative plaque to mark the occasion. IWMI researchers made presentations on the Institute's projects in Sri Lanka, and the President expressed his interest in, and appreciation of, the work being carried out.

"It is a great honor for IWMI to welcome His Excellency to our headquarters, and to formally launch the Sri Lanka Water Resources Information System," said Jeremy Bird.

The water information system is designed to monitor the dynamics of Sri Lanka's water resources with the aim of enhancing water management in the country. "While many parts of Sri Lanka have an abundance of water resources, huge areas experience

water scarcity," said Bird. "Tools such as the information system play a part in supporting Sri Lanka's continued development, economic growth and future prosperity."

The water information system developed by IWMI is freely available online at slwater.iwmi.org/

Read the full story at www.iwmi.org/2014/01/president-rajapaksa-launches-new-water-information-system/

Editorial

Welcome to the inaugural print edition of *Lindha Langa*, Sri Lanka's first-ever online discussion space on water issues in the country, brought to you by the International Water Management Institute (IWMI).

Lindha Langa went live in January this year, and is an interactive forum for sharing news and views on water, the environment and development. The print edition contains shortened versions of the online stories, and will be published biannually. The full-length articles are available online at *Lindha Langa* (www.iwmi.org/sri-lanka/).

If you have suggestions for articles, please send them to r.jeyaraj@cgiar.org. We look forward to hearing from you.

Renuka Jeya Raj
Communications Specialist/Writer

Why 'Lindha Langa'?



(photo: Patric Harrigan/Living Heritage (www.udappu.org)).

'Lindha Langa' means 'around the well.' The water well is situated in the heart of the village in Sri Lanka. Villagers gather around the well to discuss everyday life and debate issues that affect their community, while going about their household chores.

International Water Management Institute (IWMI). 2014. *Around the well: news, views and discussion on water and the environment in Sri Lanka*. Around the well: news, views and discussion on water and the environment in Sri Lanka, 1. 8p. doi: 10.5337/2014.217

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Digging for development: The hidden cost of sand

by Dharshani Weerasekera

Sand mining in Sri Lanka is not only undercutting riverbanks, it is also undermining water quality, ecosystems and land use, and, according to some, the country's recent economic progress.

Artisanal or manual sand mining from rivers has supplied the country's construction industry for hundreds of years. Since 1990, the introduction of mechanized methods has led to intensive river sand mining (RSM). The 2004 tsunami and the end of the civil war in 2009 precipitated a construction boom, which doubled the pre-tsunami annual demand for sand from 5 to 10 million cubic meters. Despite Supreme Court intervention in 2004, which allowed artisanal mining only at specific locations, illegal mining continues.

Reduced land viability and biodiversity

Some of the obvious impacts include erosion and collapse of riverbeds and riverbanks, widening of rivers and possible changes in their course. Deforestation, desertification and habitat destruction are other results. The

consequences for communities in affected areas are serious, as land traditionally used for agriculture, animal husbandry and home gardens is reduced or disappears. In major rivers that support agriculture and water supply, unsustainable RSM has lowered riverbeds, causing intrusion of saltwater.

"The economic costs of RSM have only recently been flagged," says Kusum Athukorala, Chair of the Sri Lanka Water Partnership, a non-profit organization promoting integrated water resources management. "No one has quantified the cumulative impacts to see their real cost to the country."

Holistic and sustainable solutions seem to offer the best hope. In the Matara District, participatory programs involving local communities, and networking between community-based organizations have helped reduce RSM and its impacts. Systems to establish Payments for Ecosystem Services (PES) may help.

Read the full story at www.iwmi.org/2014/05/digging-for-development/



Sand mining along the Maha Oya is changing the river's course and diminishing land viability for agriculture and livelihoods (photo: Sri Lanka Water Partnership).

Lagoon Special

A new study on Lagoons by IWMI and partners highlights the importance of protecting these fragile ecosystems

Lagoon aquaculture: Is it sustainable?

by Dharshani Weerasekera



Odai fish farm at De Mel Watta, Seeduwa, near Negombo (photo: Saaliya Thilakarathna/IWMI).

Groups of women in Negombo, Sri Lanka, are running fish farms in the local lagoons. The collectives not only sell fresh fish to middlemen, they have also started money lending services (microfinancing). These small-scale fish farms known as *odai* may be breeding success and empowering women, but are they adversely affecting a very sensitive environment and future livelihoods?

A comprehensive study by IWMI on Sri Lankan lagoons highlights the fact that what is being put into the lagoon can have just as serious an impact as what is taken out. Fish effluent from these farms are discharged into the lagoon and can affect the aquatic ecosystem.

The study reveals just how vulnerable and sensitive lagoon environments are to human activity. It strongly recommends that environmental impact studies should precede any economic development.

The *odai* are economically important for these small-scale producers, but have received little or no study. A better understanding of the impacts of these enterprises could help them become more sustainable and minimize environmental disturbance.

Read the full story at www.iwmi.org/2013/10/lagoon-aquaculture-can-be-poor-and-pro-women-but-is-it-sustainable/

Lagoons: In pictures

Dynamic, productive and ... vulnerable

by Dharshani Weerasekera

Sri Lanka's post-conflict development program has recently put the island's many lagoons under its searchlight. For most of the lagoons, their status as biological, ecological and economic entities has remained largely unknown. Negombo Lagoon is one of the exceptions; it is a highly successful fisheries hub which has seen more research being conducted on it than most other lagoons. However, exploitation of its growing values and services are already hurting the very ecosystem that provides them.



Photo: Saaliya Thilakarathna/IWMI.

You can view an online picture story highlighting the challenges facing lagoon users at www.iwmi.org/2013/10/lagoons-dynamic-productive-and-vulnerable/

IWMI provides Disaster Management Centre with flood information for relief efforts

by Renuka Jeya Raj

The unusually heavy southwest monsoon rains caused floods, landslides, high winds and lightning in the Colombo, Gampaha, Kalutara, Matara, Kegalle, Ratnapura and Galle districts.

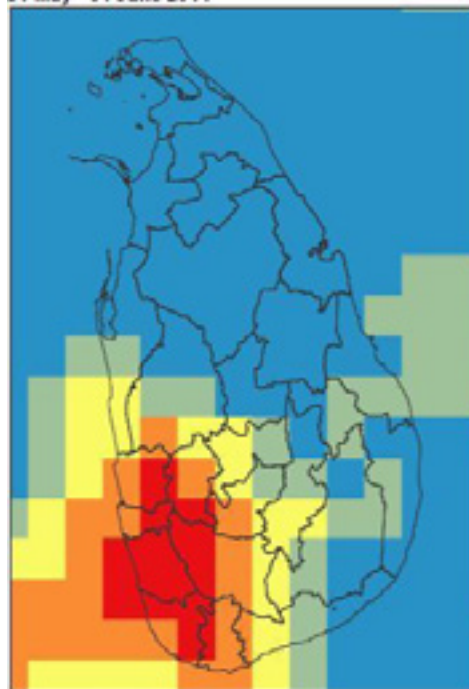
The International Water Management Institute (IWMI) responded promptly to the disaster by identifying extreme floods in the region using flood-mapping tools. Giriraj Amarnath, Researcher – Remote Sensing and Water Resources, IWMI, accessed data on rainfall intensity from National Aeronautics and Space Administration (NASA)-based satellite Tropical Rainfall Measuring Mission (TRMM). He used this information to measure the concentration of rainfall in different districts of the country. He then shared these figures with the Sri Lankan government's Disaster Management Centre (DMC), UN-OCHA (United Nations Office for the Coordination of Humanitarian Affairs), which is the UN's umbrella body for disaster relief, and the United Nations Office for Outer Space Affairs (UNOOSA) in Vienna, Austria, to help relief efforts.

The DMC expressed its appreciation for receiving data from IWMI. "This data has good agreement with the ground," confirmed Srimal Samarasiri of the DMC.

"In the future, we can develop this methodology, provide capacity building and give it to the DMC for their use," said Giriraj.

FLOODING IN SRI LANKA CAUSED BY HIGHER-THAN-NORMAL MONSOON RAINFALL

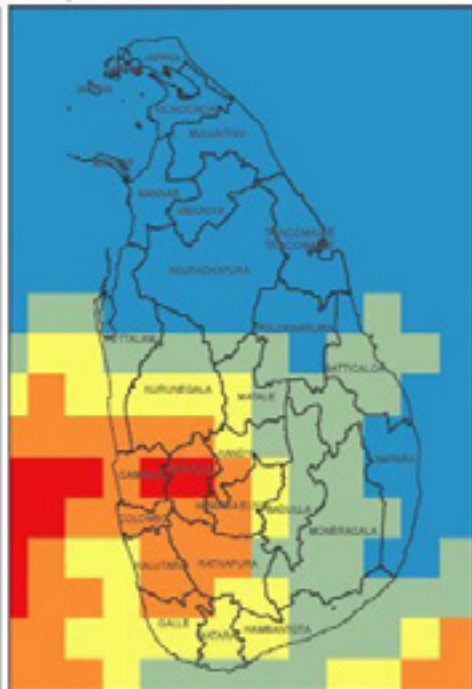
Accumulated Rainfall (mm)
31 May - 04 June 2014



Legend



Accumulated Rainfall (mm)
31 May - 04 June 2013



Legend



This TRMM real-time data indicate extraordinary flooding that has occurred from May 31 to June 4, 2014, in the districts of Kalutara, Galle, Matara and Ratnapura, and some parts of Colombo, as a result of the southwest monsoon. The rainfall was between 4 and 6 times higher than the monsoon rains experienced during the same period in 2013.

Source: Giriraj Amarnath, Researcher – IWMI

Read the full story at www.iwmi.org/2014/06/iwmi-provides-disaster-management-centre-flood-information-relief-efforts/

IWMI hosts World Water Day 2014 Junior Quiz, Lyceum International wins

by Renuka Jeya Raj

Pupils from the Lyceum International School won the World Water Day 2014 Junior Quiz hosted by the International Water Management Institute (IWMI) at its headquarters in Battaramulla.

The event was held to mark World Water Day, and saw over 150 pupils aged between 12 and 14 years old from schools in the Western Province of Sri Lanka compete with each other to answer general knowledge questions about water and the environment.

The competition was intense and participation was enthusiastic.

Lyceum International pupils were awarded the World Water Day 2014 Gold trophy with an impressive score of 77 points. They also received a set of encyclopedias for



'I know the answer to that... it's somewhere in a corner of my mind!' (photo: Sampath Ranawaka).

their school, and each member of the team received a digital camera and personalized certificate.

CMS Ladies' College followed close on their heels as runners up. IWMI's Director of Communication and Marketing, James Clarke, gave away the prizes.

The quiz was organized in association with the Sunday Times, the children's section of The Sunday Times.

Read the full story at www.iwmi.org/2014/04/lyceum-international-wins-iwmi-world-water-day-2014-junior-quiz/



The winning Lyceum team is congratulated by IWMI's James Clarke (photo: Sampath Ranawaka).

Lindha Langa marks International Women's Day 2014

To mark International Women's Day, we spoke to two leading lights in the water sector on Women and Water

by Renuka Jeya Raj

Dinesh Gunawardena, Minister of Water Supply and Drainage and Chief Government Whip of Parliament, tells us how his Ministry is addressing gender issues in water:

Extract of the interview transcript



Photo: Manoj Jayasuriya/IWMI.

Lindha Langa: You have been quoted as saying, 'Women's voices must be heard, in order to ensure sustainability in the water sector.' How are you making this happen?

Minister Gunawardena: We have been able to bring about the acceptance of the role of women in terms of various decisions. We have ensured their participation in the water and sanitation sector, so that there is more sustainability in the sector.

Lindha Langa: One-sixth of the Sri Lankan population gets its water supply from community-based organizations (CBOs), in which women play a critical role. How does your ministry support this?

Minister Gunawardena: Women play a role at policy level as well as at community level. We created the National Community Water Trust which covers over 3,500 CBOs, the fair majority of which - about 50% at least - are led by women. We cover about 2.7 million people under these CBO projects and provide nearly 180,000 sanitation facilities in the rural areas. All this was done by the people with contributions made by the local communities. The government only provided the technical assistance and funding. With our supervision, they initiated these projects, completed them, and maintained and managed them.

Interview with Kusum Athukorala

Kusum Athukorala is Chair of NetWater and the Sri Lanka Water Partnership. She works in communities with private sector partners, ministries and nongovernmental agencies to promote sustainable development and water management, nationally, regionally and internationally. She received the Women in Water 2012 award from the International Water Association (IWA) in recognition of her long association with, and deep commitment to, gender-related issues in water.

Lindha Langa: What are the challenges faced by women in the water sector in Sri Lanka?

Kusum Athukorala: I would say that attitudes are a major barrier. Women are 52.3% of the population and head about 23% of households. However, they are the foot soldiers of the water sector, both in irrigation and domestic rural water supply. Women's contribution is significant when it comes to setting up community water organizations, but the leadership rests mostly with men at decision-making levels in water-related bodies such as CBOs or farmer organizations. NetWater recently facilitated two women CBO leaders to speak at the 'From the Shallows to Deep - Who takes the lead? Women, Water and Leadership' conference. During implementation of the project, the women were very energetically involved in their desperation to get water, even breaking traditional gender ideology by trekking through forests and doing manual work on the construction sites.



Photo: Manoj Jayasuriya/IWMI.

Lindha Langa: What, in your opinion, are the policies that should be introduced to improve local women's access to water?

Kusum Athukorala: We should have policies that promote gender-disaggregated data collection at every level of community water management, and support decision making based on an accurate picture of rural ground realities. For this, there must be links between water-related ministries. Empowering women in the water sector is simply about ensuring sustainable development through enhanced efficiency and greater equity.

Read the full story at www.iwmi.org/2014/03/international-womens-day-2014/

Water tapped from feeder canal grew Sri Lanka's largest wholesale market

Text and photos by Renuka Jeya Raj

The Dambulla Economic Center is Sri Lanka's largest wholesale market for fruit and vegetables, which comprises three vast hangars that resemble a domestic aerodrome from above. This is a market that never sleeps. It is geared to accept the newly harvested produce that arrives during the day from all over Sri Lanka, and accommodates the buyers who arrive at night to take their pick. Over 200,000 kg – about 70% of the country's requirement of fruit and vegetables – is traded daily.

This flourishing wholesale market owes its existence to a feeder canal that was tapped by encroachers to water homegrown produce. The Hurulu-Kandalama feeder canal was built in 1976 to increase the fast-dwindling flow of water into the dry zone tank, Hurulu Wewa. This 22 mile (35.40 kilometer)-long canal took off from the Bowatenna Reservoir in the Central Province and passed through dense jungle to reach its destination in the North Central Province.

Encroachers from the surrounding areas set up homesteads in these jungles and siphoned off the water with pipes.

Now, only about 45% of the water from the Bowatenna Reservoir reached Hurulu Wewa in the *Maha* season, and about 22% reached the wewa during the *Yala* season due to the illegal tapping of the feeder canal. IWMI (then IIMI – International Irrigation Management Institute) was involved in the USAID-funded Shared Control of Natural Resources (SCORE) study that was set up in 1994 to research the Hurulu Wewa watershed. "IIMI recommended regularizing these land entitlements within the Mahaweli system to prevent encroachers from occupying the land. This resulted in a much more efficient water management system. "The substantial increase in the crops grown in these areas proves the success of our strategy," says B. R. Ariyaratne, Researcher, IWMI, who had been involved in the SCORE project.



A buyer carefully presses an avocado for ripeness.



A handler takes the weight of a sack of green chillies hoisted onto his shoulders at Dambulla market.

Read the full story at www.iwmi.org/2014/02/water-tapped-from-feeder-canal-grew-sri-lankas-largest-wholesale-market/

Is groundwater hiding a deadly secret in Sri Lanka's paddy lands?

by Dharshani Weerasekera

A mystery killer is striking thousands of farming families in Sri Lanka's North Central Province. Insidious as it is deadly, the clues to its identity may flow in the groundwater that irrigates crops and slakes thirsts.

The North Central Province of Sri Lanka has been the traditional rice bowl for thousands of years. However, over the past 20 years (CKDu - Chronic Kidney Disease of Unknown Etiology) has killed approximately 20,000 paddy farmers. Health officials and scientists have been unable to determine the exact cause of this slowly progressive, new type of kidney disease. The only agreement seems to be that the usual risk factors for kidney disease (diabetes, hypertension and urinary tract infection) are rarely present.

The clusters of those affected occur in the North Central, Uva and Eastern provinces, falling mainly within the Dry Zone of Sri Lanka. Victims are mostly

subsistence farmers between 30 and 60 years of age, with men 2.5 times more susceptible than women. It has been estimated that over 15.3% of the population in endemic areas are suffering from the disease.

Connecting the dots

Herath Manthrithilake, Head, Sri Lanka Development Initiative at IWMI, said, "More research is required. It is a serious humanitarian situation."

While researchers continue to search for answers, victims and their families battle misery, despair and deepening poverty, as they spend all their resources on seeking medical treatment.

The socioeconomic and human cost of this tragedy will continue to escalate until the cause is found.

Read the full story on www.iwmi.org/2014/07/is-groundwater-hiding-a-deadly-secret-in-sri-lankas-paddy-lands/



Paddy farmers in Sri Lanka applying agrochemicals by hand (photo: cc: Christopher Skene on Flickr).



Farmers planting paddy in waterlogged fields in Sri Lanka (photo: cc: DenishC on Flickr).

IWMI launches 'Wetlands and People' on World Wetlands Day



Small-scale sustainable fishing by canoe has been practiced for generations. Here, father and son drag their canoe ashore after a day's fishing in Mundal lagoon (photo: Sanjiv de Silva).

IWMI released the publication *Wetlands and People* to coincide with World Wetlands Day, February 2, 2014. The report highlights the value of wetlands to rural poor communities in Asia, Africa and Latin America. Several wetlands in Sri Lanka (Negombo, Kalametiya, Bundala and Embilikala lagoons) are also featured.

"Outright protection of wetlands is incompatible with farming and would threaten the livelihoods of millions of people, and we've seen these approaches fail in the past," said Matthew McCartney, a hydrologist at IWMI, and a contributor to the book, *Wetlands and People*. "But there are agricultural practices that can support and sustain healthy wetlands, and vice versa."

The Ramsar Convention

The Ramsar Convention was established in 1971 in Iran. Sri Lanka is a signatory. Six wetlands in the country have been designated as wetlands of international importance.

Read the full story at www.iwmi.org/2014/02/wetlands-and-people-launched-today-world-wetlands-day/

IWMI staff among winners of the President's Award



Ranjith Alankara and Sarath Gunasinghe receiving their awards from the Hon. Patali Champika Ranawaka, Minister of Technology, Research and Atomic Energy (photos: National Research Council, Sri Lanka).

Ranjith Alankara and Sarath Gunasinghe of IWMI's GIS/RS and Data Management Unit received the President's Award for Scientific Publications in 2007, 2008 and 2009, and for co-authoring the research paper, *Semi-automated methods for mapping wetlands using Landsat ETM+ and SRTM data*.

Their research developed a methodology for mapping wetlands and was published in 2008 in the *International Journal of Remote Sensing*.

The methodology can also be used to map wetlands of Sri Lanka and is a useful method to ascertain changes over time within any wetland.

Read the full story at www.iwmi.org/2014/02/iwmi-staff-among-winners-presidents-award/