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Sri Lanka Association for the Advancement of Science
Vidya Mandiraya, Vidya Mawatha, Colombo 07, Sri Lanka

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Groundwater levels related to irrigation water management in Suriyawewa

Eline Boelee* and Wim van der Hoek

International Water Management Institute, PO Box 2075, Colombo

Residents have dug shallow wells next to canals on the left bank of the Uda Walawa irrigation system near the town of Suriyawewa. These wells are reported to fall dry between cropping seasons, which suggests that the groundwater in the wells is recharged by seepage from irrigation canals. Our study investigates whether this is really the case.

Along an unlined irrigation canal, water levels have been measured in shallow dug wells and piezometers, at least once a week during almost a year. In addition, water levels in canals as well as irrigation water releases have been monitored.

Groundwater levels closely follow changes in canal water releases. When the canal is closed for a few days, groundwater levels drop rapidly too. Outside the growing season, when the canal is closed, groundwater tables drop further, sometimes below the bottom of the well. Residents have to look for alternative water sources in the inter-cropping season and often revert to surface water.

A rehabilitation program is currently underway to concrete line the canal to reduce seepage and increase the canal conveyance efficiencies. If canals are proven to be the source for groundwater recharge, this rehabilitation will be highly effective from an irrigation point of view. For the residents however, other water uses may be more important, be it indirect from shallow wells, and the effects of canal lining may be undesirable to them.