

crossover with groundwater protection for rural water supplies

Posted by SeanFurey - 22 Nov 2012 15:08

Dear WG11,

To introduce myself, I'm Sean and I work for Skat, based in St Gallen, Switzerland. My main role is in the Secretariat of the Rural Water Supply Network (RWSN) and one of our four themes is 'Sustainable Groundwater Development' (www.rural-water-supply.net/en/sustainable-groundwater-management), which comprises three topics:

- Handpump Technology (we hold the international public domain standards for the India Mark II/III, Afridev, Tara and others)
- Cost Effective Boreholes (which is focused on professionalising the water well drilling sector)
- Cost Effective Groundwater Management

The last one is new in this strategy period and is focused on measures to protect groundwater quality near boreholes and wells in a way that is cost effective (which doesn't necessarily mean cheap!). There are links to Water Safety Planning, and that was the starting point for a project that I am doing for the Ministry of Water & Environment in Uganda where we are preparing and piloting national Guidelines for Water Source Protection.

There are also links to IWRM, and in particular the Community-based IWRM being promoted by WaterAid, and Water Use Management Plans (WUMPs) which have been used in rural Nepal for over ten years by Helvetas.

With this as a bit of background, I would interested to find out from SuSanA members how you approach groundwater protection and what successes, tools, and documented case studies you have?

Thank you!

Sean Furey

Water & Sanitation Specialist

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Re: crossover with groundwater protection for rural water supplies

Posted by ghosh51 - 22 Nov 2012 15:52

Dear Sean,

We have worked for ground water conservation and protection in rural India. Please see the link for the details of our work.

repository.tudelft.nl/view/ir/uuid%3A84a...5-a260-56d4ca963fc6/

If you have any further question , you may contact me on my e mail ID -

This e-mail address is being protected from spambots. You need JavaScript enabled to view it

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With best regards,

Ashok Ghosh

Erasmus Mundus Fellow,

Professor In-charge,

Dept. of Environment and Water Management,

A.N.College,Patna,

India

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Re: crossover with groundwater protection for rural water supplies

Posted by JKMaKowka - 22 Nov 2012 18:17

Hello Sean

That sounds like a very interesting topic, especially since I just recently started working with UWASNET in Kampala on IWRM issues. I am sure we would meet sooner or later anyhow if you are working with M&E now (DWRM?)... how long will you stay in Kampala?

I have actually worked a bit on spring catchment protection and CC adaption of those catchments (for small scale WSPs, also in Nepal) so I guess that is somewhat related... and there is also the currently under development (by WHO) concept of "Sanitation Safety Plans" just shown last week here in Kampala on the IWA conference. Those deal more with sewer-systems and risk management like flooding events, but groundwater protection is also an important part it seems. Otherwise... I remember having some good documents on pathogen transport in aquifers and such, I guess that would be interesting for you too.

So, I will have a look what I can dig up in my backlog or at UWASNET, but please get in contact:

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so that we can meet some time? Our office is in Luzira too, so we can meet easily there, I guess.

-Krischan

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Re: crossover with groundwater protection for rural water supplies

Posted by SeanFurey - 23 Nov 2012 09:39

Dear Krischen and Ashok - many thanks for your responses and links! That's great. I will read with interest.

The challenge with all these things is less the technical side and more the complex human interactions within a catchment area, which become even more complex when chronic poverty is involved.

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Re: crossover with groundwater protection for rural water supplies

Posted by fppirco - 23 Nov 2012 11:44

Dear Sean

You have begun with a serious topic ground water protection and as you pointed out ground water protection must be consider in comperhensive water safety plan as drinking water ,unfortuently in devleoping countries becuse of lacking water safety plan & ground water protection many of ground water reources shows polloutions particular chemical polloutions such as organic carbon suagriculture and irrigation ,industries and entertainment from catchment zone protection to end user , accompanied with with waste water treatment mangement and sanitation .

unfortunately in developing countries becuse of lacking water safety plan strategy many ground water suppliers as critical reources have been contimination with various chemical organic pollouants such as pesticides,herbicides and fertilizer resuidal,heavy metal, and hazard biological contamination as well as.

water safety mangement development as comprehensive strategy for protection of water supplies from any contamination will contribution of preventing of safe water shortage in the future, and safet ground resources recharging with sanitation and recycling ,reusing water for preventing extrapolation of freshwater resources to protect them for next generations.

Mohammad

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Re: crossover with groundwater protection for rural water supplies

Posted by SeanFurey - 23 Nov 2012 14:32

Dear Mohammad,

I agree, it is really tough are because it is such a multi-dimensional problem. On my last mission I met sand miners who were taking sand out of the river just upstream of a town's pumping station- their activities are a part of the problem, but only a small part and they earn a living from it, so who's to blame and who can fix it? No easy answers, sadly.

Sean

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Re: crossover with groundwater protection for rural water supplies

Posted by JKMaKowka - 23 Nov 2012 16:42

Yeah, it's often stuff like that. In case of the spring catchment (for gravity fed piped water systems) areas in Nepal it was actually small scale livestock herding that resulted in the most problems.

The catchments were close enough to the villages that the goats etc could be brought there by the children, yet sufficiently far away that they hadn't been utilized for agricultural production (one of the reasons why they were chosen as sources for the systems).

So the children were playing with the fences etc and the goats were happily eating up the vegetation and dumping their remains upstream of the spring.

No real solution was found to this problem either, except for further improving the spring protection structures to make them less vulnerable to problems of conterminated surface water entering (which helped only partially)... preventing the livestock use was really not an option for the villagers at all.

Upstream agricultural use of catchment was another problem, but since the sources had already been carefully selected, it was less common were I did the study.

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Re: crossover with groundwater protection for rural water supplies

Posted by fppirco - 24 Nov 2012 10:35

Dear Sean

Thank you for your comments ,I like to send my article which presented as poster in Honnover,Germany 2008

In that presenation I expressed concern about rechargeable water resources.

with best regards;

Mohammad Mojtabaei

www.fpp.ir

Telfax:00985117629569

P.O Box:91865-358

Mashhad,Iran

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Re: crossover with groundwater protection for rural water supplies

Posted by F H Mughal - 25 Nov 2012 06:44

Dear Mr. Sean,

In Pakistan, there is no control on the establishment a bare minimum distance of 30 metres between a toilet and a well. There are instances, where a toilet is close to a drinking water well. Even though, in some cases, a rural latrine may be connected to a septic tank, which in turn, is connected to a soak-pit, after initial period of operation during which the effluent is fairly treated; the effluent becomes problematic due to the overload of septic tank, the final effluent trickles out, percolates and moves horizontally along the ground contours to a well. There are many cases here of faecal contamination of well water.

I'm also on a look out, on how to deal with well water contamination from latrines.

F H Mughal

Karachi, Pakistan

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Re: crossover with groundwater protection for rural water supplies

Posted by guneshwar - 25 Nov 2012 07:20

Dear Sean

I am Guneshwar Mahato from Nepal working in Rural Water Supply and Sanitation Project in Western Nepal. I have worked for 16 local level Water Use Master Plan preparation (political boundary level) in western and far-western development regions of Nepal. These plans basically prepared for the hilly regions of Nepal. Currently the project is supporting 9 districts to prepare more than 100 local level WASH plans (VDC and district WASH plans) in western region. More recently, a task force team (comprising of UNICEF, RWSSP-WN, RVWRMP, DoLIDAR, DWSS) has been formed to prepare a national guideline on "Community-led Water Safety Planning"; which will consist of all types of

rural water supply technologies like hand drilled tube wells, hand dug wells, private spring sources, rain water harvesting, gravity system, source conservation, deep bore holes, pumping systems (solar, electrical and wind powered) etc.

Regards

Guneshwar

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Re: crossover with groundwater protection for rural water supplies

Posted by JK Makowka - 25 Nov 2012 10:37

Ok here are some usefull links I think:

Quite practical in regards to community managed catchment protection is this one from Helevetas Cameroon (maybe you know this one already since you mentioned them):

www.sswm.info/sites/default/files/refere...ction%20Handbook.pdf

Another good one, giving much infos on the theoretical background is this WELL study about pathogen transport in the ground:

www.lboro.ac.uk/well/resources/well-stud...ies-htm/task0163.htm

(Also have a look at their references, might give you a good starting point for further research)

A similar review to the above is this one, that might give some additional insights:

www.wrc.org.za/Knowledge%20Hub%20Documen...rSA_1995_02_0885.PDF

Edit: just stumbled on this: www.agw-net.org/ Maybe a usefull resource.

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Re: crossover with groundwater protection for rural water supplies

Posted by JK Makowka - 26 Nov 2012 13:14

Some more general briefing notes on groundwater management from the worldbank:

cap-net.org/sites/cap-net.org/files/wtr ... tIs/73_18_BNNo1.pdf

cap-net.org/sites/cap-net.org/files/wtr_...t_tls/37_GWMate6.pdf

cap-net.org/sites/cap-net.org/files/wtr_...tection_Strategy.pdf

and this one on groundwater quality protection:

cap-net.org/sites/cap-net.org/files/wtr_...Protection_Guide.pdf

Hope that helps.

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