

Field observations of alternate sources of drinking water in the arsenic affected village, Kamdebkathi, in West Bengal, India, and recommendations

(Prepared by: Meera M Hira Smith, Ph.D. Project Well, March 27, 2004)

The overall findings of Project Well’s five dugwell monitoring program from August 2002 to July 2003 were commendable. The findings were presented at the international conference organized by the Dhaka Community Hospital in Dhaka in February 2004. The abstract is available at <<http://www.projectwellusa.org/articles/followupabstract2004.htm>>.

Observations

A) Picture 1 shows dugwell number PW7, (Latitude 22.807, Longitude is 88.732) located in the village of Kamdebkathi containing the annual average of arsenic level as 0.012 µg/L. Picture 2 shows one of the arsenic removal filters in the vicinity of PW7 that contains an arsenic level of 94 µg/L and another filter located in between the two contains an arsenic level of 103 µg/L (Table 2).



Picture 1: #PW7/KDK5, Kamdebkathi

Table 2: Measurements of Arsenic and Iron of the arsenic removal plants.

(Source: SOES, Jadavpur University, December 2003)

Village	Identification mark	Depth of tubewell (ft)	Type of treatment plant	Arsenic Concentration in tubewell water		Iron Concentration in tubewell water	
				before treatment (raw water) µg/L	after treatment (filtered water) µg/L	before treatment (raw water) µg/L	after treatment (filtered water) µg/L
Beside the Shop of Swasti Charan Nath at Mogra Bazar, Kamdebkathi		250	B. E. College	123	94	2352	1281
Beside Mogra F. P. School, Kamdebkathi		450	Pal Trockner	122	103	1470	3444



Picture 2: Arsenic Removal Filter Mogra Bazar, Kamdebkathi

Picture 3: Arsenic Removal Filter Mogra F.P School, KDK



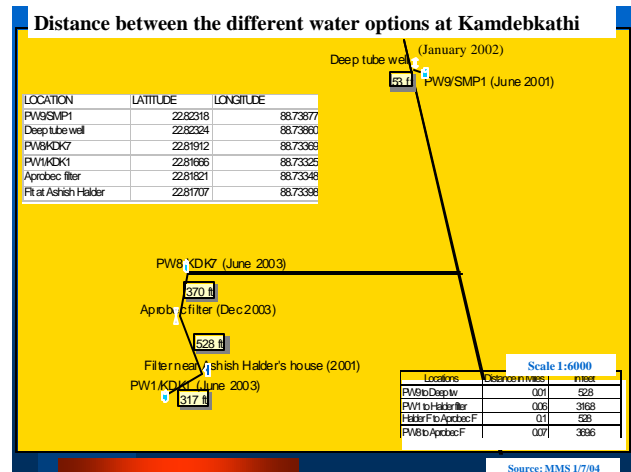
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B). In spite of NINE awareness programs held by Project Well and LKP, covering a small area, some of the dugwells are not being used as expected.

WHY?

1) Installation of too many options in the same area due to lack of coordination between NGO's working in the villages and lack of proper planning

Picture 4 shows the location of the first dugwell, #PW9, that was constructed in June 2001 near the house of a victim, Mr. Nibash Ray. Mr. Ray has lost his first wife to arsenic in June 1995 and his son, Dhiman Ray died in 2002 at the young age of 25 years. The then field workers of Simulpur club who were given the work of executing the project assigned by Project Well/LKP suggested the site. *Seven months* later, in January 2002, a deep tubewell was installed within a distance of about 100 feet from the dugwell #PW9. This resulted in the drop in number of consumers instantly to one family, Mr. Ray's.



Picture 4: Showing the location of six alternate sources of water and their geographical coordinates and the period of construction.

It is also shown that within a distance of about 1300 ft there are four options providing arsenic safe water. The density of population in this particular area is high hence Project Well implemented two dugwells in May/June 2003 upon the request of the villagers. Within *six months* another NGO installed an arsenic removal filter manufactured by a Japanese concern, APROBEC, with an improved set up shown in picture 5. The users of dugwell #PW8 were approached by the field workers in connection with the APROBEC filter about the overall desire of the filter. They cannot tolerate the chlorine odor that is in the water between 2-5 days, based on the duration of aeration, after application of the disinfectant. Some villagers are reluctant to change their habit. The waste of fund is not their concern.



Picture 5: APROBEC Arsenic Removal Filter near the Sevak Palli School in Kamdebkathi

2) Hence *subsidizing* is an essential concern. Dhaka Community Hospital, an NGO of Bangladesh working with dugwells has introduced the system from the very beginning. The villagers contribute either by cash and/or by labor or raw material. This enhances the sense of ownership of the water supply among the users. In the villages of Kamdebkathi, Fakirpara, and Chondipur some of the community-based groups, CBGs, are responding very well and they are

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eager to take the training and eventually take the responsibility (refer to the Report, March_2004).

Recommendations

- A) **Proper coordination and planning**
- B) **Subsidizing**
- C) **Creating Database:** How? By the simple use of handheld GPS device (price range is from \$150 to \$250) and drawing maps by using GIS software.

* The database containing detail information would enable to track records, create reports, and take actions.

* *Maps represent data that enable us to view the findings at a glance instead of reading columns from tables.*

* Maps and application of the data would make monitoring more efficient.

Today it is not impossible to create a database. The entry of data can be made possible in the developed villages.

- D) **Distribution of information:** It is essential to develop an extended bureau at the State level (**Arsenic Information Bureau, AIB**) where information on the activities of the different NGOs and government organizations those who are working in the field should be filed including information on the extent of work, description of the work type, future plans etc that can be utilized for planning of the distribution of the various alternate sources of arsenic safe water options. The information can also be made available on the Internet.

Thus the four main components, mentioned above, can be considered to be absolutely essential for “SUSTAINABLE DEVELOPMENT” of any community-based programs. These not only enable monitoring the projects but also assess the efficiency of the project.

{Address for correspondence on this report: mmhsmith@berkeley.edu
Website of Project Well: www.projectwellusa.org}