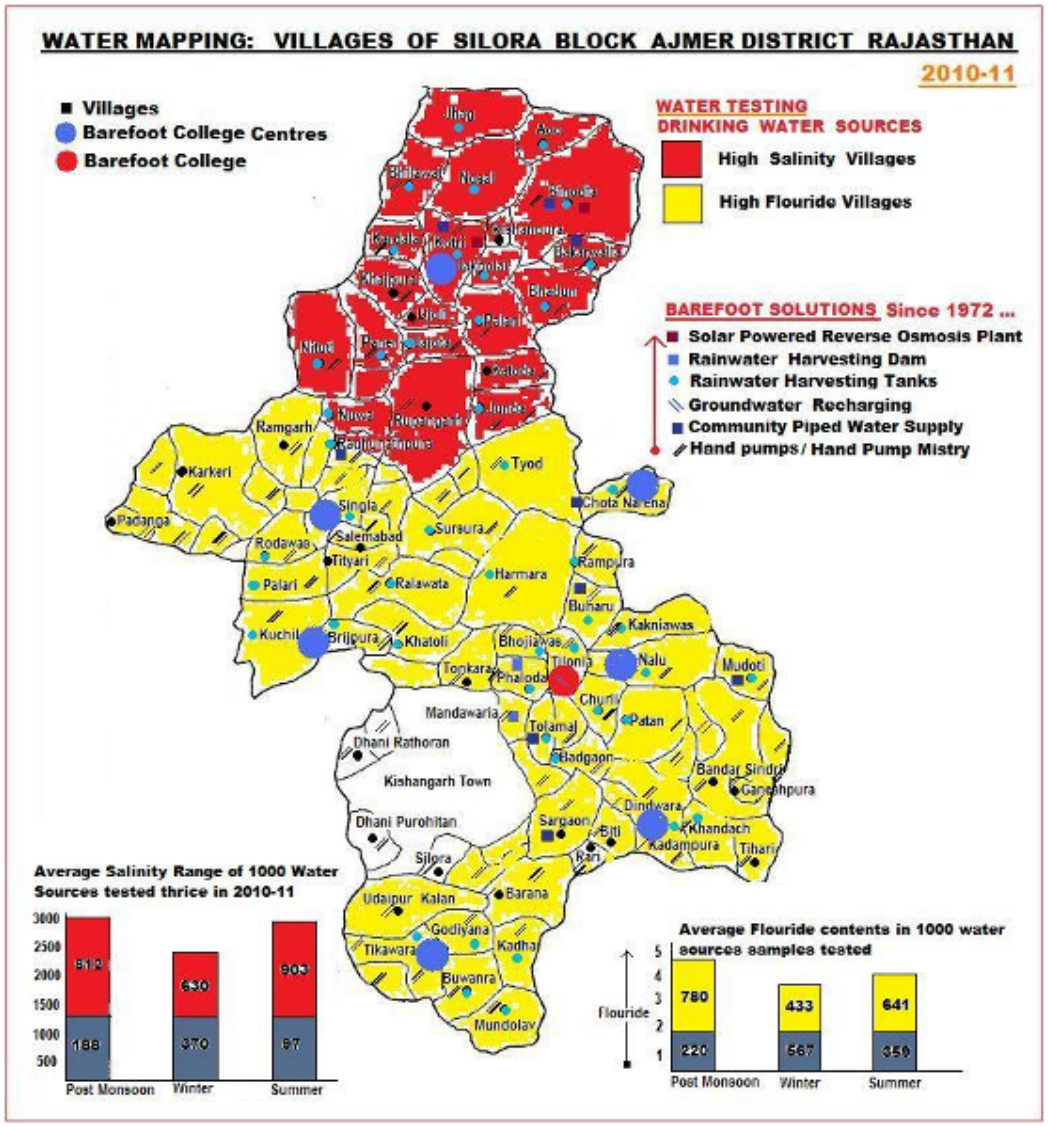
DRINKING WATER

(2010-11)

An ordinary village community has demonstrated extra ordinary barefoot milestones to access drinking water in dry, high fluoride and saline parts of the State by updating 1000 drinking Water sources information onto Water Mapping website called Neerjaal, replication of Tilonia Recharge Model in Borunda village of Jodhpur district, augmentation of groundwater through surface storage in the Salt Lake area and establishment of solar powered reverse osmosis plants in Sinodia village.

1. Water Mapping

Neerjaal website is created for water mapping of villages. Information of water quality, availability of water in a year, maintenance of water sources can be updated and viewed online regularly in Hindi.

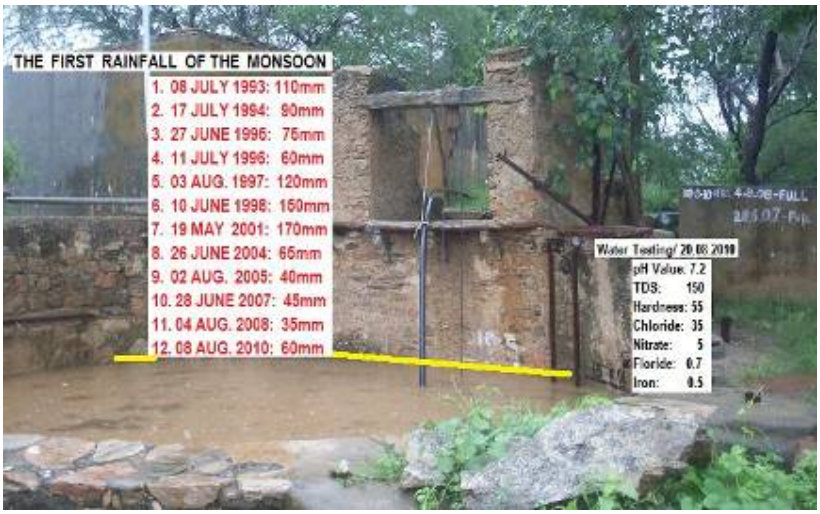


2. Tilonia Campus Well: Groundwater Recharging

Details of Open Dug Well:

- Depth: 100 Feet
- Volume: 1,000 cubic metre
- Filling Capacity: 1 Million Litres of Rainwater Ground water Recharging @ 1.5 metre/day. A Safe Storage in Ground Aquifers
- Location: Open dug well at Barefoot College Campus

Groundwater Recharging: Rainwater surface run-off and overflow of the Campus RWH tanks: A sufficient amount of ground water is available for 200 person drinking and supply of drip irrigation systems to maintain greenery in the campus.



3. <u>Borunda Village</u> – A community based approach replicated in Borunda village of Jodhpur district through diverting rainwater run-off channels into 5 deep wells.

First time, Community members of Borunda villages saw the well recharging systems in the campus in year 2003. They surprised it was being used for drinking and irrigation and it was very easy to them to understand a simple system of well recharging rather than theoretical descriptions and experts' explanations. They learnt a unforgettable practical lesson to start in their own areas dried up deep wells-A preliminary survey of dried up irrigation wells carried out in 2003, there are such 120 irrigations wells could be recharged on 'Tilonia Pattern.

Once upon a time the area assumed to be a large confined aquifers but due to over exploitation of groundwater for irrigation, wells of the area are completely dried up. No water is available for drinking.

The State Government has sanctioned a pilot project for replication of Tilonia Well Recharging Model in Borunda Village through village community.

In year 2007, 5 deep wells were connected with seasonal nullas by 2 feet diameter pipes and diverted into wells that recharges a large amount of rainwater. It was observed that water level increased in the closed wells in the first rain fall. By seeing the result of water recharging, the replication of the model has also increased.

Borunda Village Jodhpur District

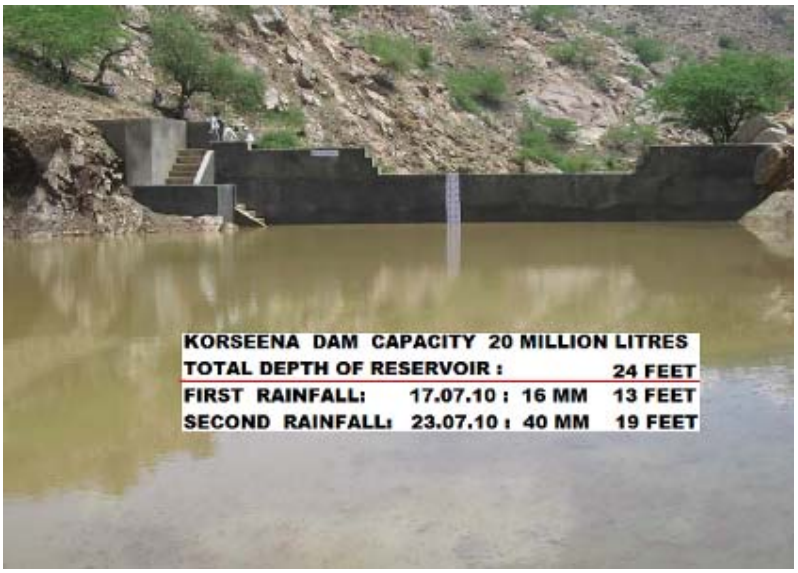

Rainwater storage area built for well recharging

2 FEET DIAMETER PIPES CONNECTION

A DEEP DRIED UP WELL CONNECTED WITH 2FT. DIA. PIPES

4. <u>Korsina Anicut in Sambahr Salt Lake</u>
Source of drinking water for 20 villages in the Salt Lake Area

Surface storage: Rainfall : 23 July 2010



<u>Water Quality</u>

- pH Value: 6.5
- TDS: 200 ppm
- Hardness: 60
- Chloride: 40 ppm
- Floride: 1.5 ppm
- Chloride: 40 ppm
- Iron: 0.5 ppm
- Nitrate: 5 ppm
- Bacterial presence

5. <u>Solar Powered Reverse Osmosis Plant</u>

Sinodia village is located in the Sambhar Salt Lake Area on the border of Ajmer and Jaipur districts. Village Community of Sinodia has been successfully managing to provide drinking to 3000 people through community managed piped water supply system. The village community has constructed a 1,00,000 litres capacity tank, dug a sweet water well (now dried up), laid pipes to each house for water supply to each house since 1993.

An example of community owned system in saline area of Rajasthan maintaining by rural community through monthly contribution of Rs. 25-30 per month for the last 16 years. It seems enough amount to maintain it by poor rural community with full involvement and support in the entire barefoot piped water system.

The village community is very regular to repair and maintain the pipe lines laid with the financial support of the Barefoot College in the village in 1993 through local barefoot water engineers.

Very good maintenance of 1,00,000 Litres Tank constructed by Sinodia Village Community in 1993.

The pipe lines are still in very good working condition- no problem of pipe leakage and no wastage of water. It saves single drop of water.

Village community is very happy that at least water reaches to each house through 16 years old pipe lines in the driest days of summer. Villagers said "Main problem is *KHARA PANI* quality of water due to supply from deep tube well." It contains high ranges of TDS, Floride, Hardness, Nitrate and some percentage of iron.

In Year 2010, 5 Kilowatts solar powered Reverse Osmosis Plant costing Rs. 15 Lakhs has been installed to provide potable drinking water. It is operated and maintained by village community and barefoot engineers.

Solar Powered Reverse Osmosis Plant in Sinodia Village

Preparation of Village Community

5 Kilowatts Solar Power Supply

Production of Potable Water @ 1000 litres per hour for 3000 people.

Sinodia Village Water Testing Report:

Before: Existing Drinking Water Source:

Month 2010	Sources	Chemicals Standard Limit							Remarks
		T.D.S. 2000	PH 6.5-8	Chloride 250	Fluoride 1.5	Hardness 300	Nitrate 45	Iron 1	
Jan.	Well	900	7.5	300	2.5	260	10	0.4	Non Potable
Feb.	„	900	7.5	320	2.5	280	10	0.4	Non Potable
Mar.	„	900	7.5	400	3.5	300	10	0.4	Non Potable
Apr.	„	1000	7.5	420	4.5	340	10	0.5	Non Potable
May.	„	1000	7.5	440	4.5	460	15	0.5	Non Potable
Jan.	Pipeline	3600	9.0	600	3.5	560	25	0.5	Non Potable
Feb.	„	3600	9.0	700	3.5	560	25	0.6	Non Potable
Mar.	„	3700	9.0	740	3.5	580	25	0.6	Non Potable
Apr.	„	3700	9.0	740	4.5	600	3.5	0.6	Non Potable
May.	„	3800	9.0	800	4.5	640	3.5	0.6	Non Potable

AFTER: Solar Powered Reverse Osmosis Plant:

Month 2011	Sources	Chemicals Standard Limit							Remarks
		T.D.S. 2000	PH 6.5-8	Chloride 250	Fluoride 1.5	Hardness 300	Nitrate 45	Iron 1	
Jan.	RO	260	7.5	80	1.5	80	15	0.2	Potable
Feb.	„	300	7.5	100	1.5	100	10	0.2	Potable
Mar.	„	300	7.5	100	1.5	100	10	0.2	Potable
Apr.	„	300	7.5	100	1.5	110	10	0.2	Potable

13 May 2011