National Drinking Water security pilot project

A Case Study

Of

Narayan Khera

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Project Theme

- Achievement of Drinking water security through-
- Source Sustainability through convergence with MNREGS, IWMP, NRDWP, etc.
- Participatory IWRM led by Gram Panchyat
- Preparation of DWSPs by active participation of stockholders.
- Development of total sanitation practices.

Raipur Block

- Raipur Block
  - Located in the west of Bhilwara district
  - Total area of 524.20 sq. km.
  - 22 Gram Panchayats
  - 92 revenue villages.
  - 89 Populated Villages
  - 79 Other habitations
- Dark Zone Area
- Water Development in Raipur Block is 168%
- Water Quality Problem

Status of Raipur Block

- **Rain Fall**
  - Average 539.79 mm
  - 2011 722 mm
  - 2012 778 mm
  - 2013 635 mm
- **Surface water Status**
  - Small Dam (2 no.) 309.00 mcft
  - Small & Medium Pond (23 no.) 707.88 mcft
- **Groundwater Status**
  - Net Availability 19.3545 mcm
  - Existing Water Draft 32.5118 mcm
  - GW Development stage 167.98 (Over Explo.)
- **Groundwater Sources**
  - (PHED)
    - Open Well / Tube Well 67
    - Hand Pump 1010
  - Public Sources (OW/ TW) 7508

Rain Fall Data (2002-2010)

year	Rainfall
2002	291mm
2003	506mm
2004	525mm
2005	712.5mm
2006	937mm
2007	516mm
2008	412mm
2009	417mm
2010	657mm

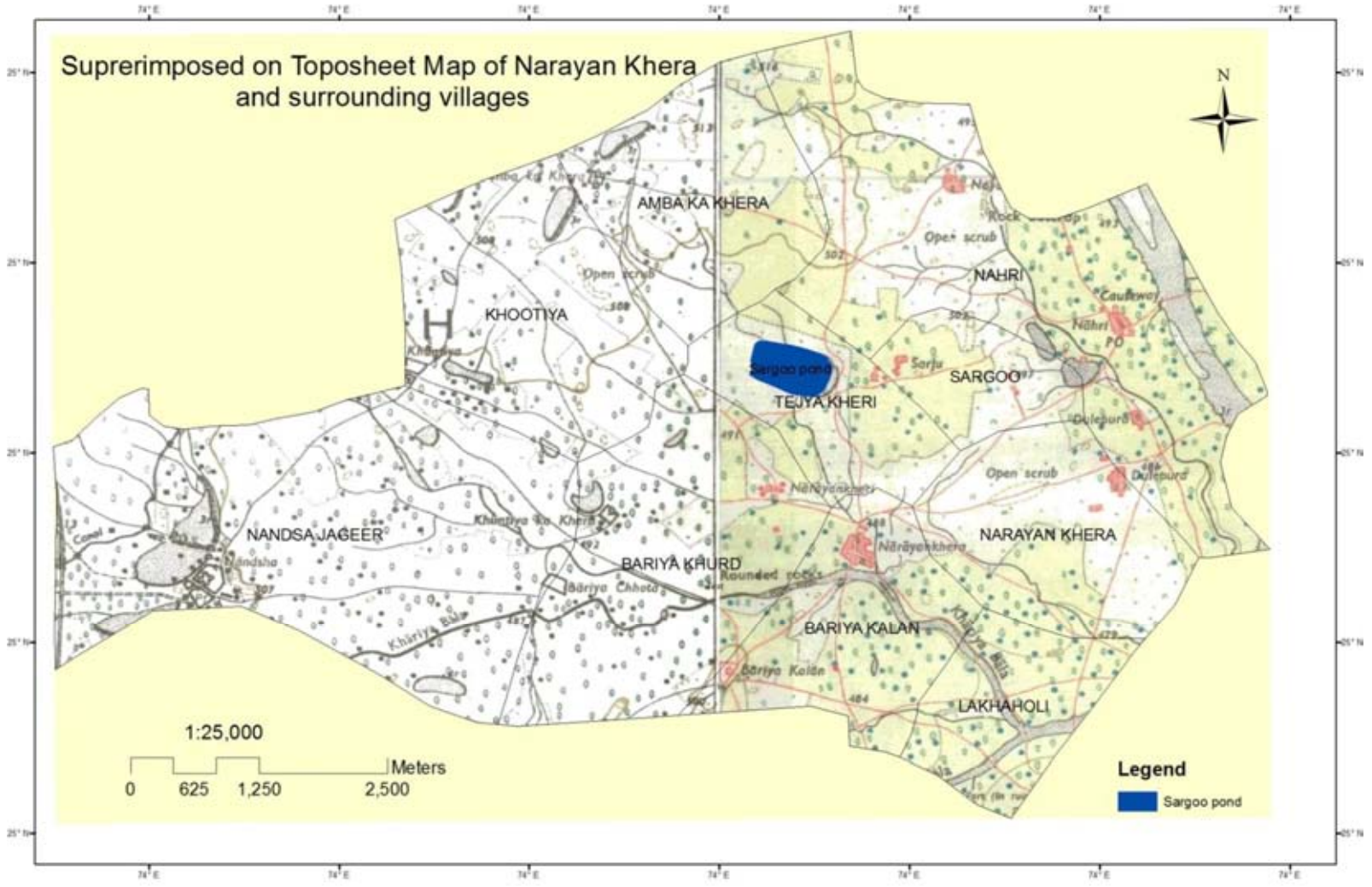
Line of Action

- Phasing of the project
- Selected 8 Gram Panchyats in 1st phase

Gram Panchyat	Population
Naryan Khera	3049
Jhadol	4900
Nandsa	4657
Deveriya	2902
Mokhunda	4577
Palara	3263
Galwa	3531
Khemana	5314

Narayan Khera: - A Case Study

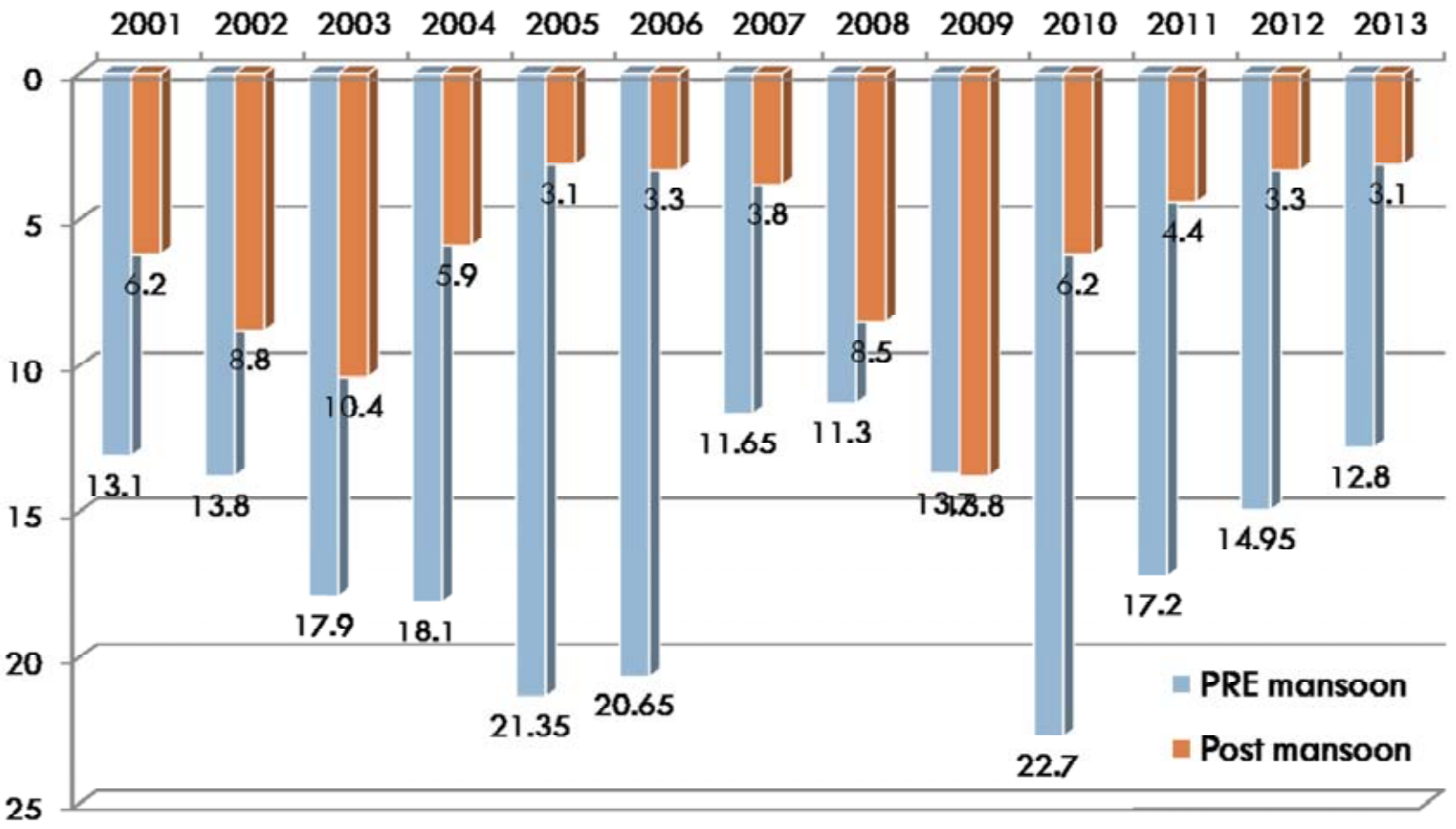
Narayan Khera



Water resource at Narayan Khera

- **Total Area** — 401 Hector
- **Surface Water Catchment Area:**
  - Sargu Tank : — 12,00,0000 Cubic Meter
  - Anicut : — 900 Cubic Meter
- **Drinking Water Source**
  - Open Wells / Tubewell — 5 (4/1)
  - Hand pumps-public — 10
  - Hand pumps-private — 4
- **Agriculture Water Source**
  - Open Well — 65
  - Tube Well — 4
- **Water Quality**
  - Nitrate — 6.6 - 38 mg/ L
  - Fluoride — 1.0-5.0 mg/ l
  - TDS — 582-1523 mg /l
- **Sanitation:**
  - House Hold Without Toilets — 144

Water Table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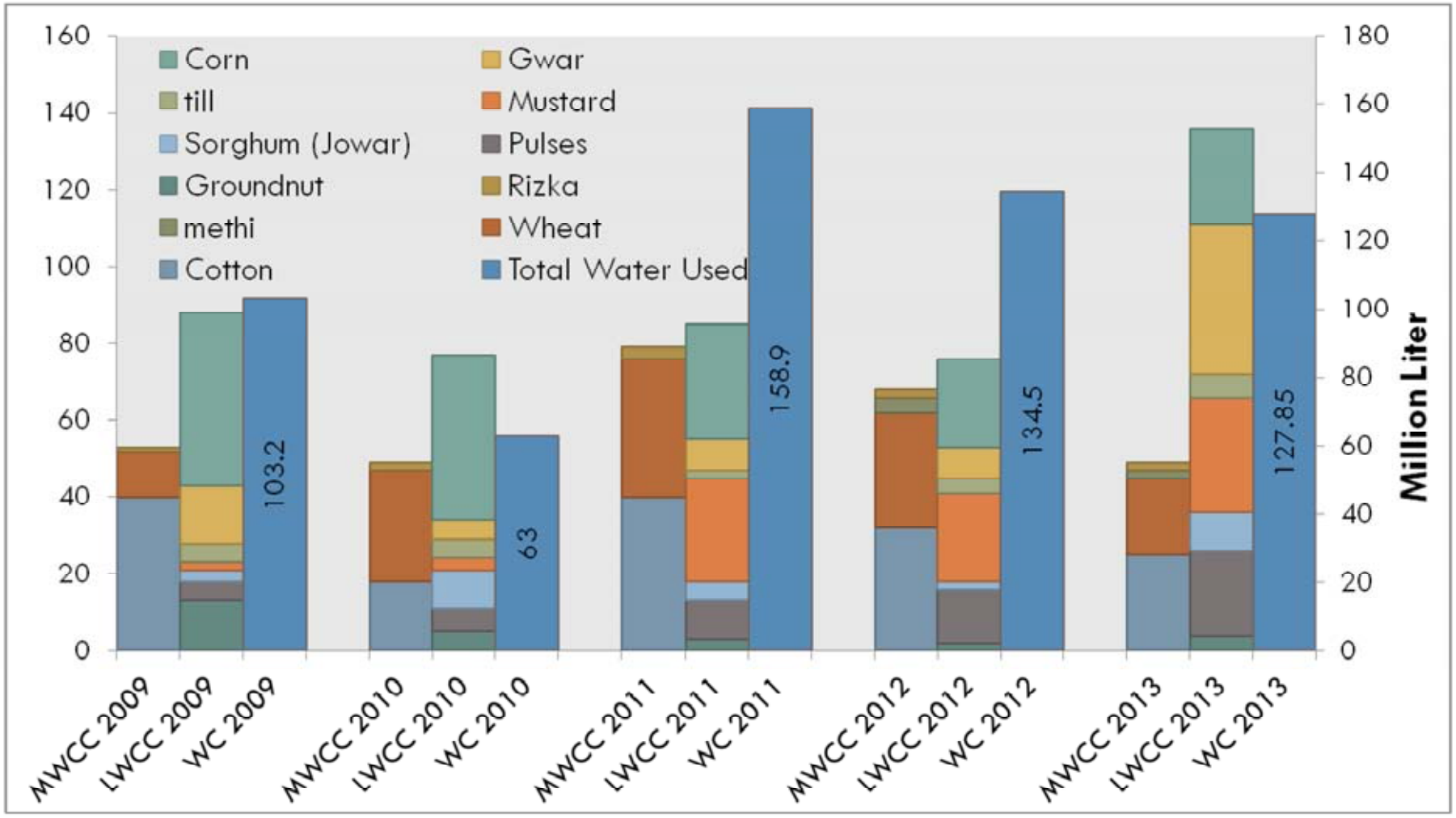
PRE mansoon
Post mansoon

Crop Pattern



Work Executed…

- Construction of Sub surface barrier (cost Rs.1.5 lakh)
- Construction of OHSR capacity 70KL (cost Rs. 8.88 Lakh)
- Laying of rising pipe line 800 meters
- Strengthening of distribution system
  - Extension of distribution pipe line (1920 mt.)
  - Removing leakages from the distribution system including household connections.
  - Closing all household level underground storage
  - Taps on household connection mandatory with own Cost for preventing wastage of water.

IEC Awareness

PUBLIC PARTICIPATORY APPROACH

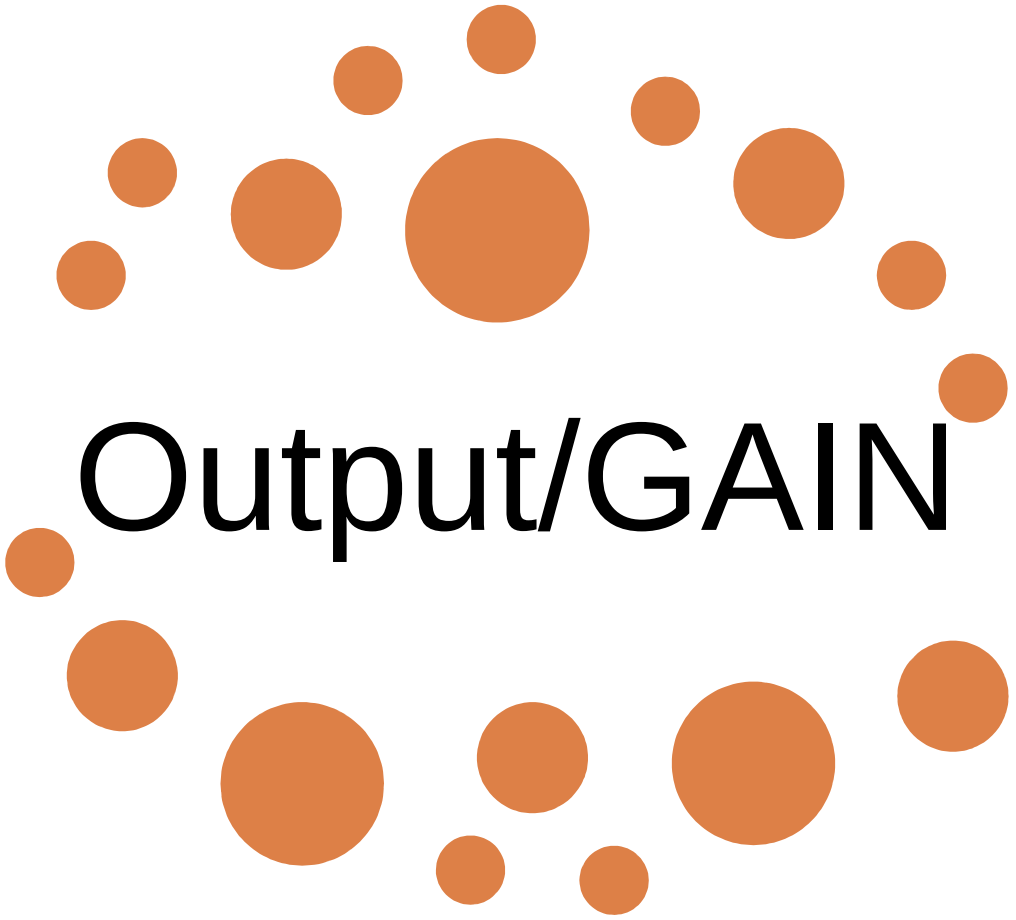
VWSC Meetings and Women Meetings

Awareness Camp (Video Show, Rally,Puppet show)

Youth Rally


राष्ट्रीय पेयजल सुरक्षा पायलेट प्रोजेक्ट
छात्रों एवं युवाओं द्वारा जल बचाओ
जल संरक्षण एवं स्वच्छता पर जागरूकता रैली
जल ही जीवन है।

Experience sharing during night choupal


Output/GAIN

Output/gain

Particulars	2010	2013	Remark
Rainfall	657 mm	635 mm	
Source for DWS	TW 1, OW 1	TW 1, OW 1	No New Source Constructed
Sustainability of source	281 days	365 days	Water supplied through tankers from 07.05.2010 to 29.07.2010
Production	70 KL	50 KL	Demand responsive approach with user participation
Pumping Hours	5.5 – 6.0 Hrs	3.0 – 3.5 Hrs	Conservation of natural resources
Power Consumption	1475 KWH (Monthly)	985 KWH (Monthly)	Energy Conservation
Household Connections	Legal 56 Illegal 14	Legal 153 Illegal 0	Increase in Access & reliability of supply, Development of Ownership feeling by participatory management
	Without Tap 66	Without Tap 0	
HH with underground tank	62	8	Awareness towards safe drinking water

Output/gain

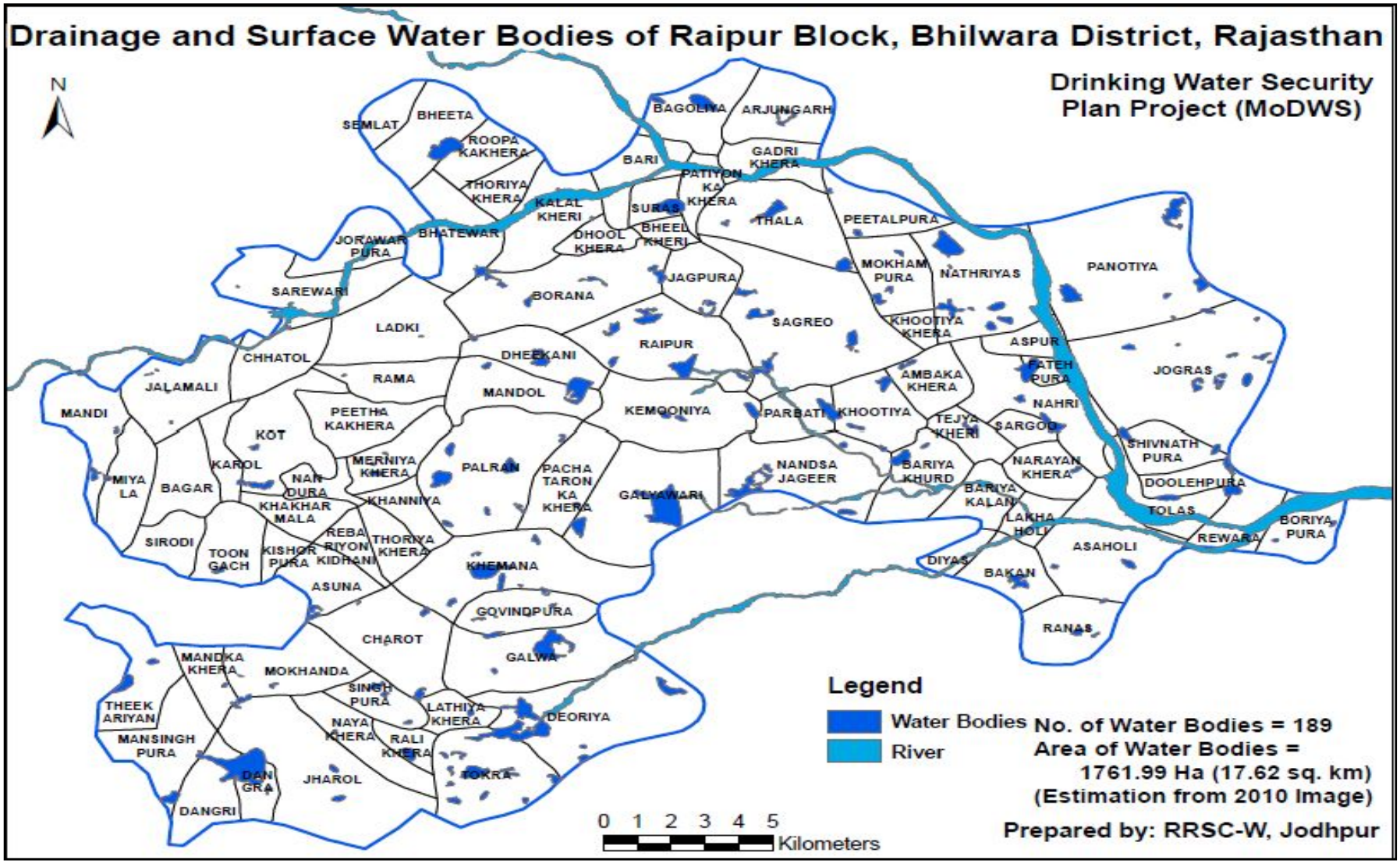
Particulars	2010	2013	Remark
Supply Pressure	-0.9 to 1.5 mt.	3.0 to7.0 mt	Removal of leakage Fixing of taps Closing of UG Tanks
Tail end conn. Not getting water	15	0	
Access to water supply	44 %	100 %	Extension of piped system (7 Households have migrated)
Reliability of Supply	70%	100%	
Quality of water supplied	Fluoride in Source 2.5	Fluoride in Source 1.2	SSB construction
	Risk of pollution - High	Risk of pollution - negligible	Leakage removed and mandatory tap
User Satisfaction	25-30%	90-95%	
O & M Cost recovery	Rs .1120 per month @ Rs. 20	Rs .4590 per month @ Rs. 30	


Future PLAN

Proposed works

S. N.	Particulars	Qnty.	Est. Cost (Rs Lacs)	Remark
1	**Source Sustainability** (a) Strengthening of Sargoo Talab	1	16.75	Silt clearance, deepening and strengthening of earthen wall for Ground water recharge
	(b) Recharge shafts near water bodies	5	4.27	Bore hole with recharging arrangement for GW recharge
	(c)RWH Tanka in Govt. schools	3	8.48	At Narayankhera, Khuntiya & Tejyakheri
	(d)Recharge through abandoned bore holes	8	3.92	Ground water recharge
2	Implementation of water safety plan such as removal of leakages, flow meters, sanitation sealing of DW sources	1	5.19	To ensure safe and potable water availability
3	Training and capacity building with IEC, sign board etc.		15.51	for O & M practices, crop changes, improved irrigation techniques and sanitation linkage
4	Service improvement works for all five		82.57	Access of potable water to all

Drainage and surface water bodies



Leakage Removal & Taps Fixing

Thanking You