



ROLE OF YOUTHS IN SUSTAINABLE WATER RESOURCE MANAGEMENT

India Water Week, JANUARY 14, 2015

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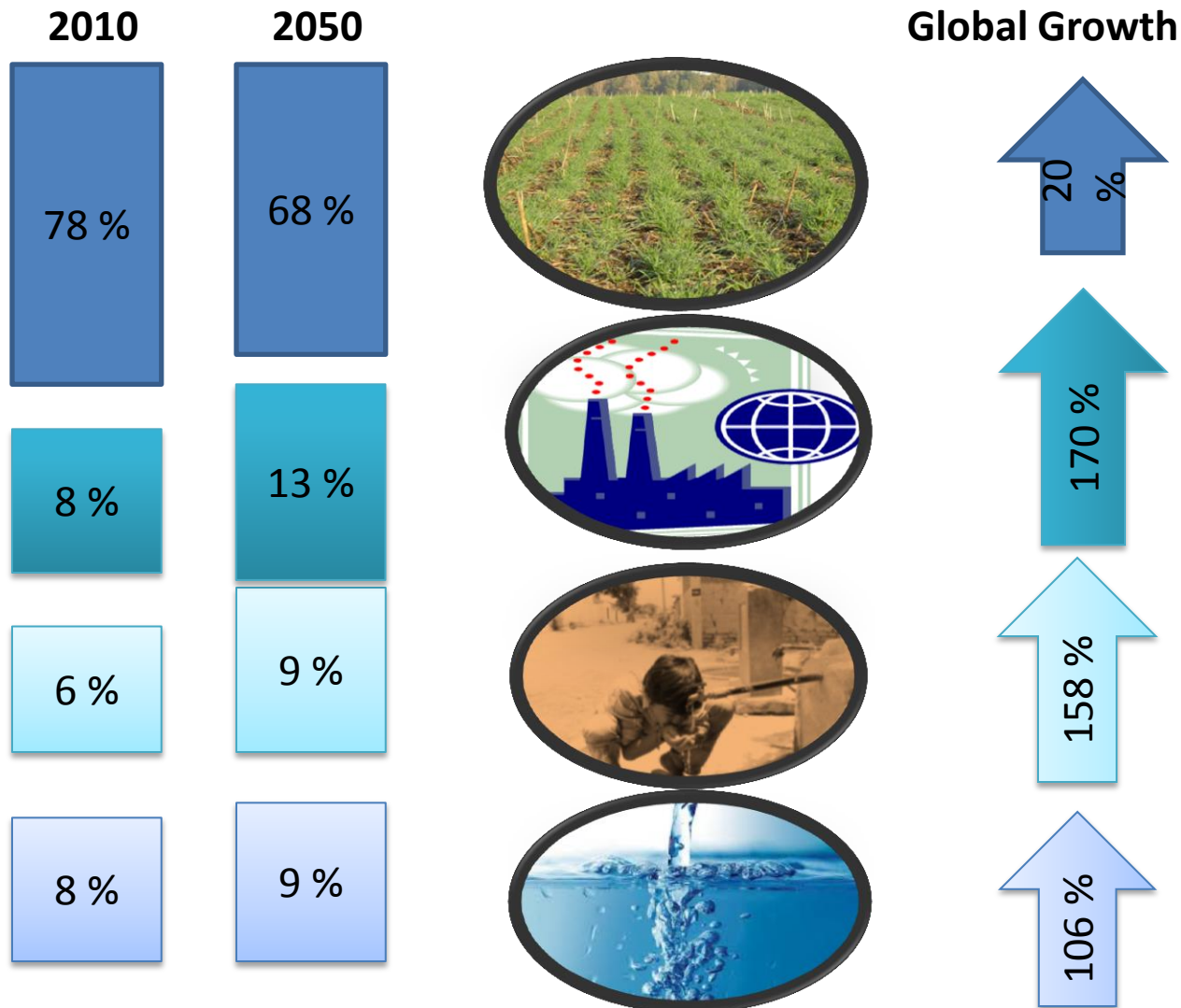
Water is related to

- Health
- Economic growth
- Food
- Energy
- All spheres of life

> 65% population below the age of 35



INDUSTRY ON A HIGH GROWTH PATH



A satellite image of the Earth showing the Western Hemisphere, with North and South America visible. The image is used as a background for the text.

1 BILLION PEOPLE LACK ACCESS TO SAFE WATER
MILLIONS HAVE BEEN SPENT ON SOLUTIONS
NEARLY HALF FAIL WITHIN A YEAR OF LAUNCH

POTENTIAL FOR RURAL OFF-GRID WATER SOLUTIONS

- 748 MILLION LACK ACCESS TO IMPROVED DW SOURCE
- 1.8 BILLION PEOPLE DRINK WATER FROM FAECALLY CONTAMINATED SOURCES*

INDIA

- 138 MILLION HH LACK ACCESS TO TREATED WATER**
- 17.9 % HH TREATED WATER IS AVAILABLE**
- 38 MILLION PEOPLE ARE AFFECTED BY WATER BORN DISEASES ANNUALLY & 4,00,000 DEATHS CAN BE ATTRIBUTED DUE TO CONTAMINATED WATER*

*WHO GLASS 2014 & **CENSUS OF INDIA 2011

RISING UNEMPLOYMENT

200 MILLION WITH OUT JOB – MANY OUT OF EDUCATION

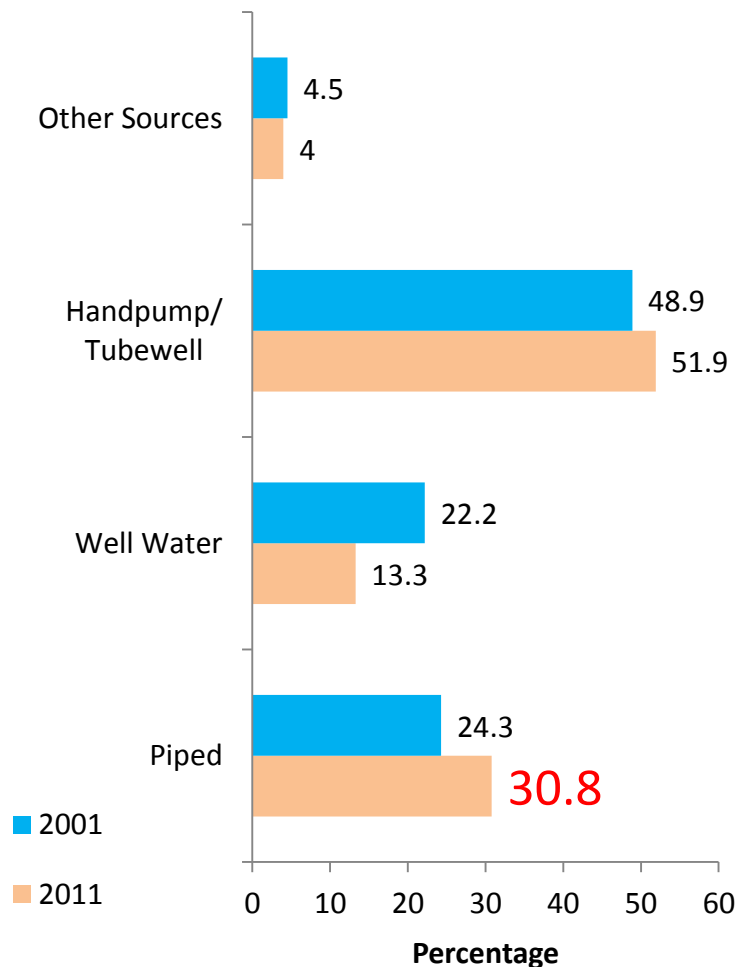
WIDENING SKILL GAPS

PROJECTED SHORTAGE OF ABOUT 83-86 MILLION HIGH-AND MEDIUM-SKILL AND
SURPLUS OF ABOUT 89-94 MILLION LOW-SKILL WORKERS BY 2020

HIGH NUMBER OF PEOPLE IN VULNERABLE EMPLOYMENT

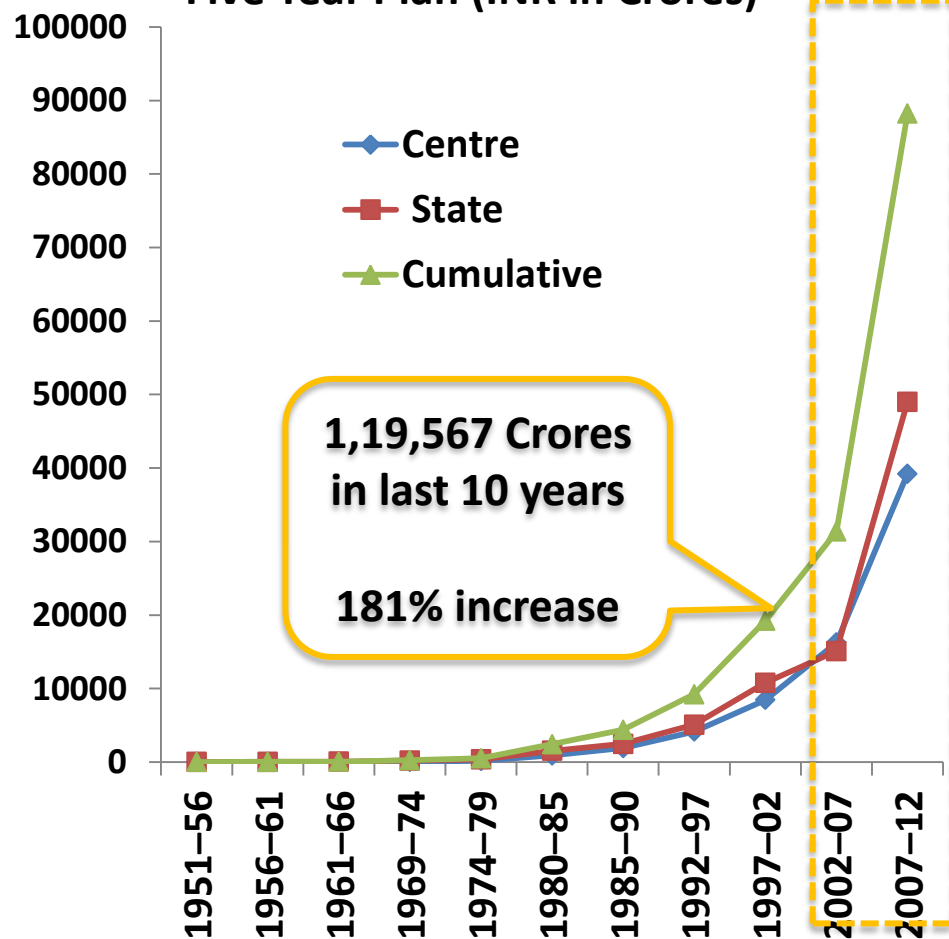
ABOUT 1.5 BILLION PEOPLE ARE FACING POOR WORKING CONDITIONS AND SUBSISTENCE-
BASED LIVELIHOODS, MOSTLY IN THE INFORMAL SECTOR

Rural Drinking Water Sources – Coverage of Population



Source : Census 2011

Rural Drinking Water Investments – Five Year Plan (INR in Crores)



Source : Available Government Data

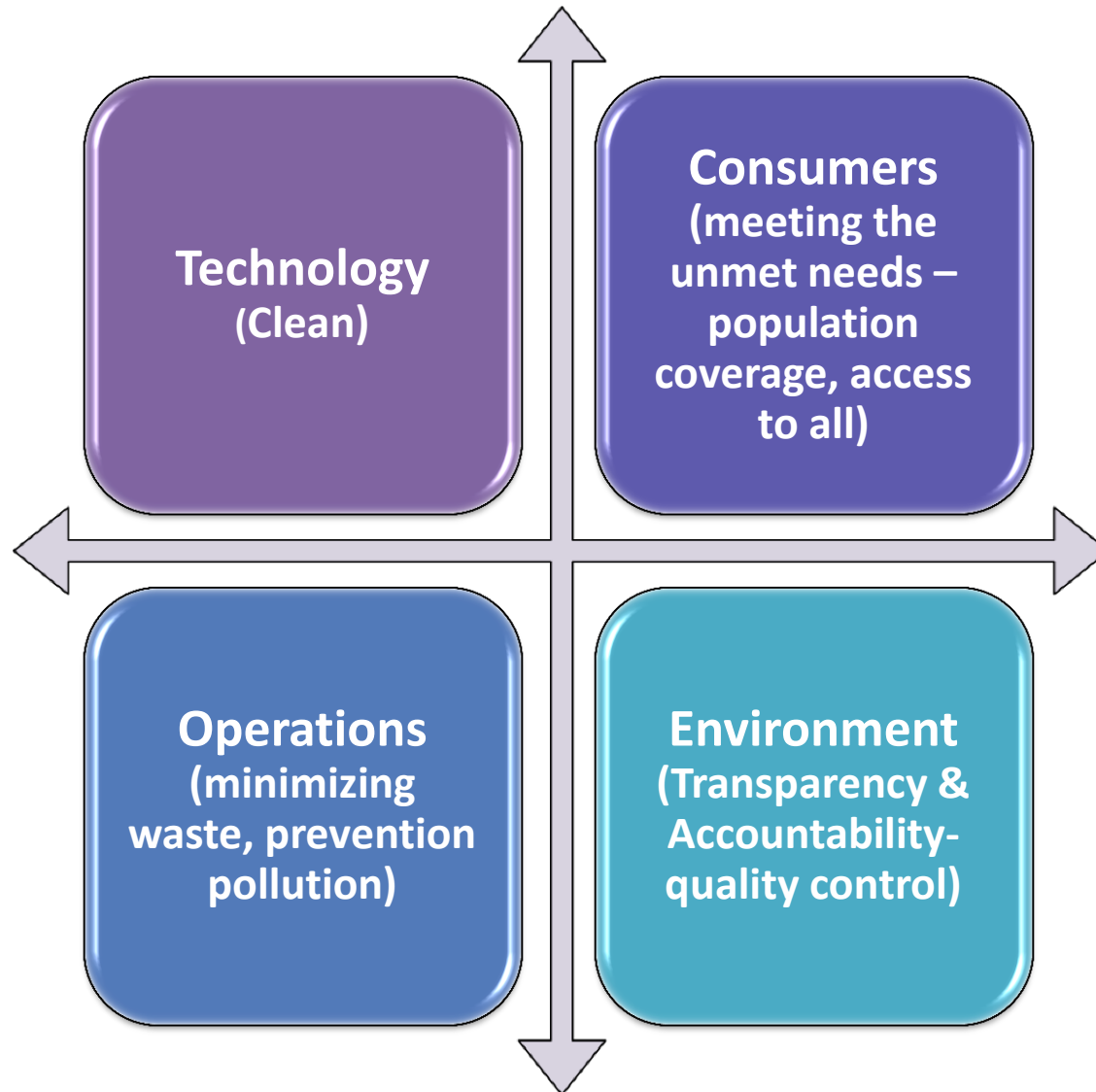
OUR MISSION



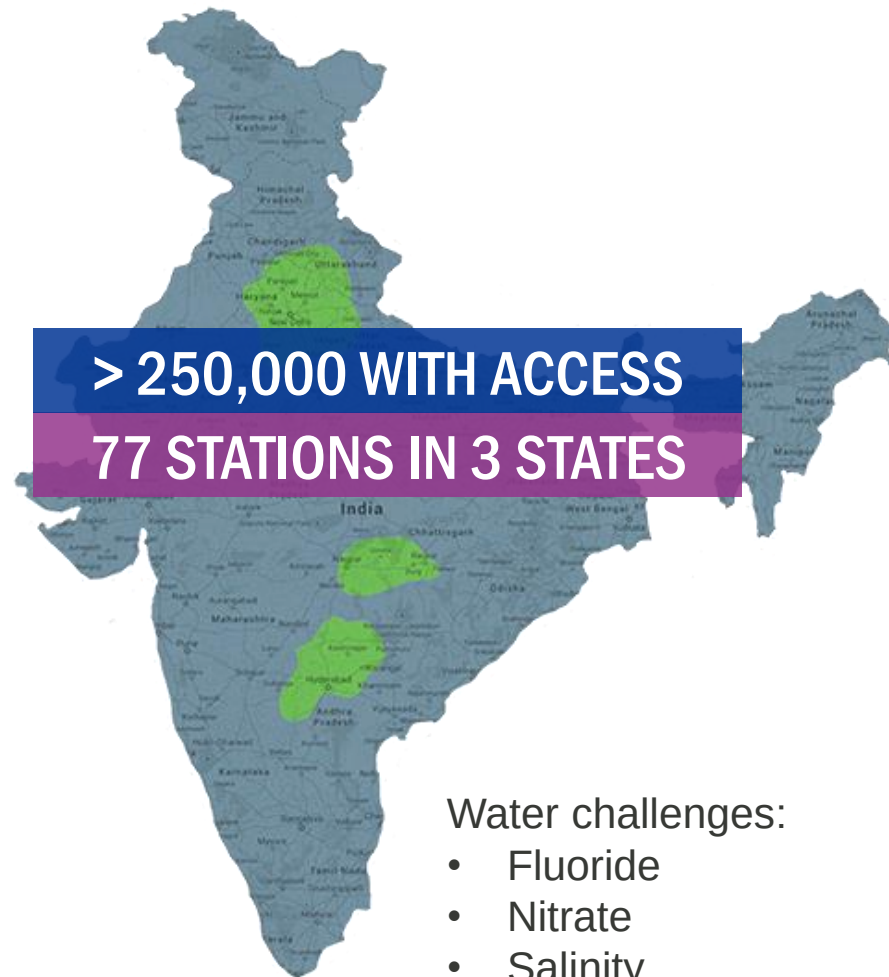
**BRINGING
WATER TO HER**

**SOLVING FOR
MILLIONS MORE**

SUSTAINABILITY



ACHIEVE CREDIBLE SCALE



Water challenges:

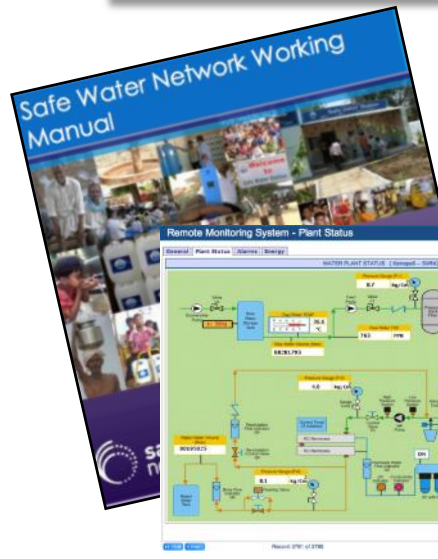
- Fluoride
- Nitrate
- Salinity
- Microbial

- Locally owned and operated systems, with external linkages as necessary
- Provide safe water access to local communities
- Use treatment technologies appropriate for water quality challenges
- Make water available to consumers at affordable prices

iJal Station “KIT”



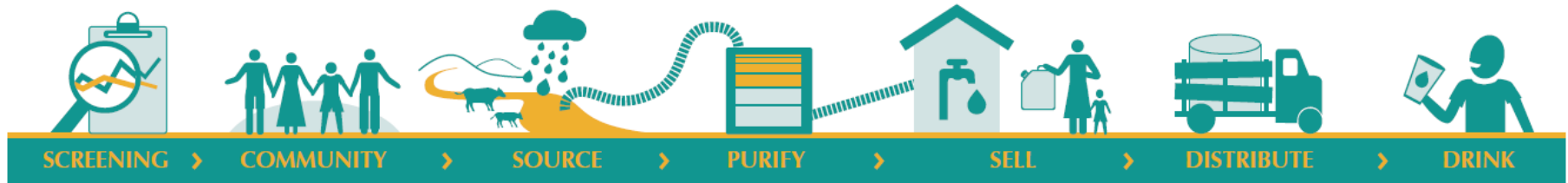
- Water purification system delivers to WHO standards
- Small business skills training
- iJal branding and consumer activation programs
- Remote monitoring system to track and manage performance
- Distribution to increase consumer convenience



*Serves safe water access to entire village
>2500 people*

VALUE CHAIN

Incentives and capacity-building throughout the value chain



...including cluster-level field support services:



LOCALY OWNED & OPERATED



LOCAL WATER SOURCES

We help communities protect their water sources for the long-term, addressing challenges to quality and sustainability.

TARGET: sustainable source water

LOCALY OWNED & OPERATED



TREATMENT TECHNOLOGY

We select responsive, cost-effective technologies to purify the water by eliminating a range of source water contaminants.

TARGET: affordable and reliable

LOCALY OWNED & OPERATED



LOCAL OPERATIONS

We develop the tools and skills necessary for local operators to own and operate Safe Water Stations for the long term.

TARGET: <2% downtime

LOCALY OWNED & OPERATED



CONSUMER FOCUSED SOLUTIONS

We don't have beneficiaries—
we have customers. We're committed
to providing our customers with
a reliable, affordable, convenient

**TARGET: +75% household
participation**

LOCALLY OWNED & OPERATED



MAINTENANCE RESERVES

Treated drinking water is priced affordably to ensure universal access while still covering operating and maintenance costs for future success.

TARGET: +25% operating margin

STANDARDIZING FOR SCALE



TECHNICAL TOOLKITS



REMOTE MONITORING



TABLET PROJECT MGMT



CONSUMER ACTIVATION



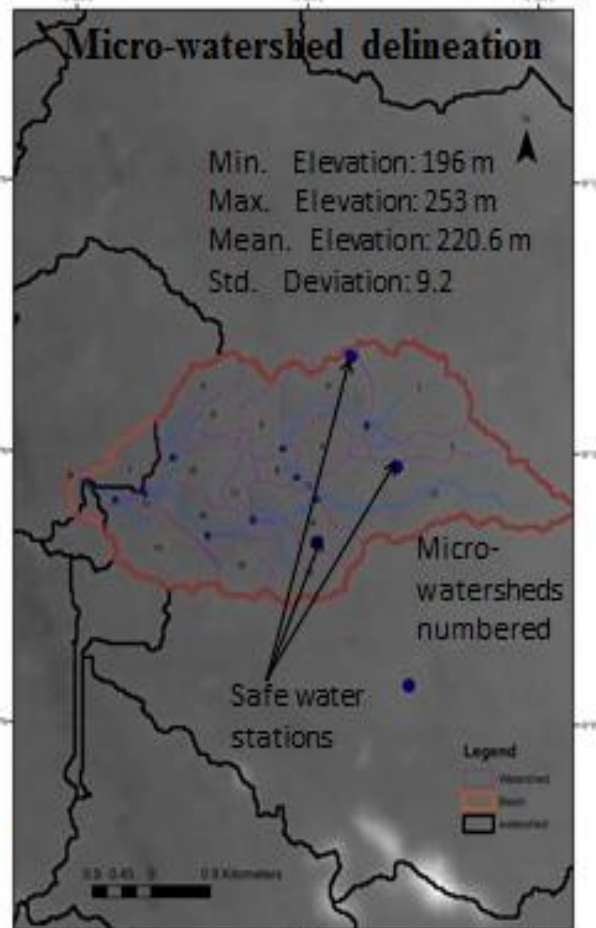
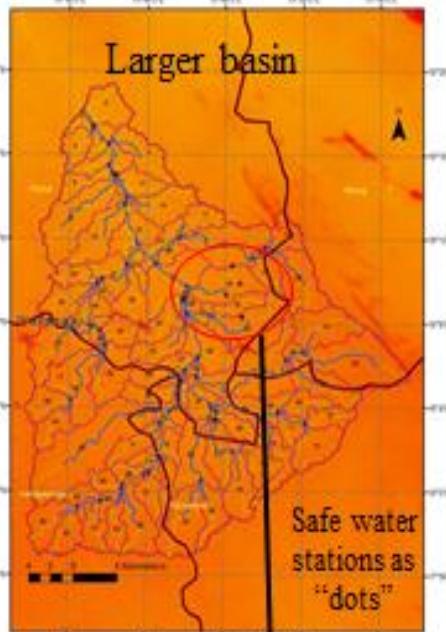
WATER MANAGEMENT

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- Figure 1 consists of two maps of the Betsigena Watershed. The left map is a false-color Landsat satellite image (ETM+) showing topography and vegetation. The right map is a land cover classification map derived from the satellite image, showing various land use categories. Both maps include a legend, a scale bar (0 to 1 Km), and a north arrow.
- Left Map Legend:**
- Betsigena Watershed (Black outline)
 - Landsat FCC Satellite Image
 - Red: Layer_4
 - Green: Layer_3
 - Blue: Layer_2
- Right Map Legend:**
- Betsigena Watershed (Black outline)
 - Agriculture (Yellow)
 - Bareness/Barren (Red)
 - Bushes (Brown)
 - Forest / Vegetation (Dark Green)
 - Open Area (Light Green)
 - Water (Blue)
 - Shrub (Light Blue)

Landuse for the watershed delineated using satellite data

WATERSHED DELINEATION

Delineation of the smaller watershed : sub-watersheds



Watershed area: 859 Sq Km

Micro-watershed: 16.5 Sq Km (3 SWWS located)

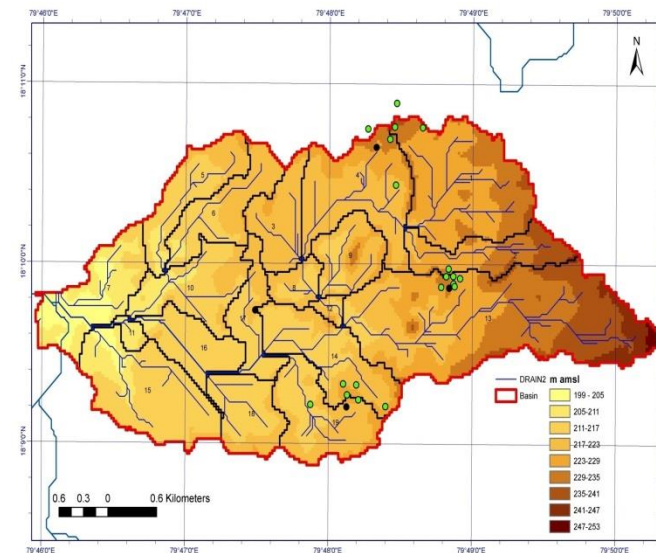
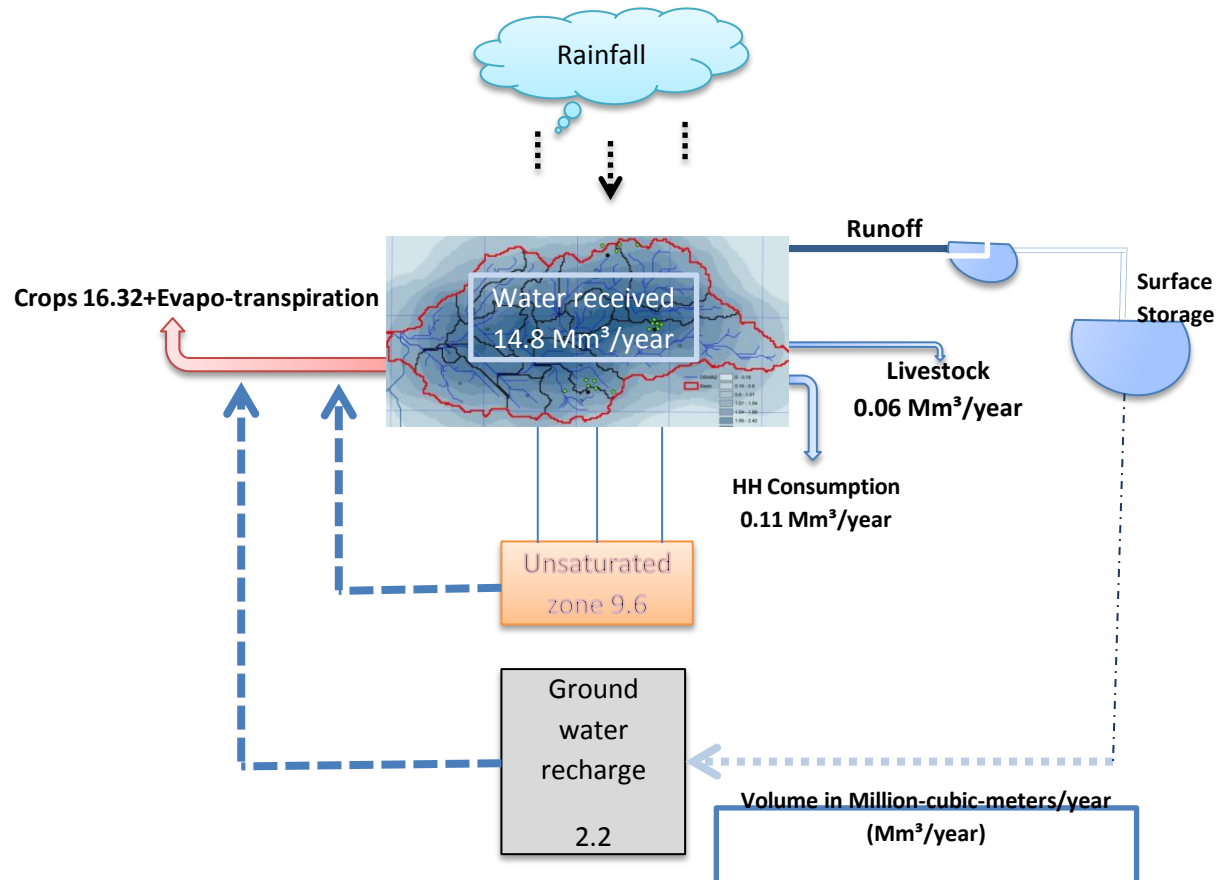


Figure 1. Delineation of smaller watersheds: sub-watersheds

WATER BALANCE STUDY

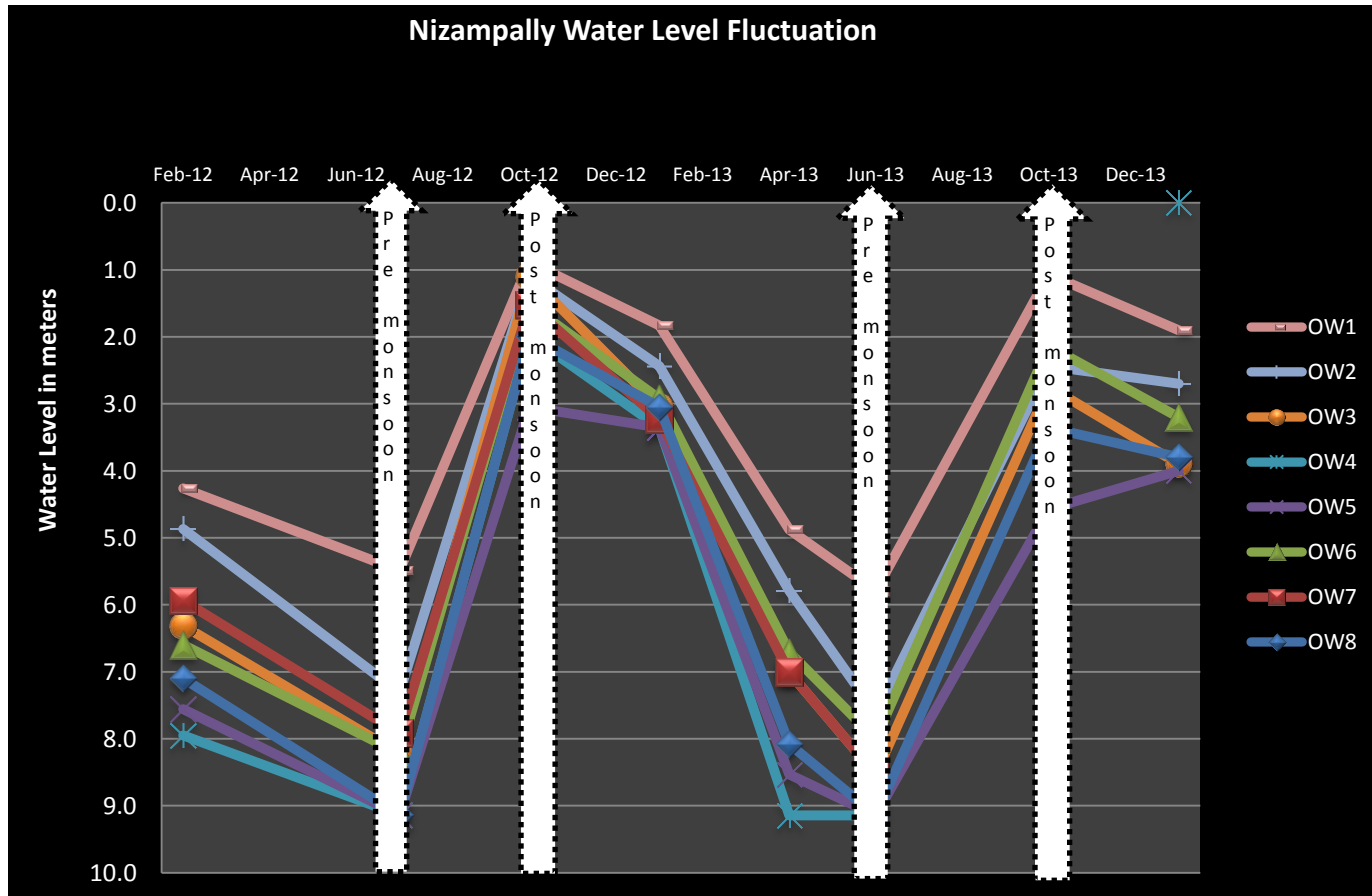


**Indian Meteorological
Department
**Stations under study:
Nizampally, Gangirenigudem,
Gorikothapally*

Note: There are following limitations of this case study:

- Information on vegetative cover and forest area is not available, this influences recharge to ground water body and Evapo-transpiration
- No data is available on canal water coming from outside of micro-watershed and return flow from irrigation to ground water body

WATER LEVEL FLUCTUATION



ENVIRONMENTAL IMPACT

Annual ground water withdrawal of iJal Stations in KL	5030
Percentage of use of annual precipitation	0.03%
Use of Chemical Fertilizer & Pesticide in Agriculture Average tons/acre	0.52
Disposal of dissolved solids in the Reject water tons	0.04%
Percentage of dissolved solids from reject	2.8%

To offset the effect of 5K cubic meter water - 30 % water use efficiency in two hectare paddy crop will bring the balance

Reject water from three Safe Water Stations is 0.04%, it is negligible and will not have any negative impact

Improving water use efficiency in agriculture and optimum use of chemical fertilizers recommended

TRAINING & CAPACITY BUILDING

OPERATIONAL

Q3:14 Operating Metrics (61 Stations)

	<u>Plan</u>	<u>Actual</u>		<u>Status</u>
Volume (L)	16M	11M	-32%	●
HH Penetration	53%	46%	--	●
Technical Downtime	<2%	1%	--	●
Capacity Utilization	70%	44%	--	N/A
WHO Water Quality	Pass	Pass	--	●

FINANCIAL

Q3:14 Financials (61 Stations)

	<u>Plan</u>	<u>Actual</u>	<u>Delta</u>
Revenue	\$48K	\$36K	-25%
Operating Expenses	36K	23K	-36%
Gross Profit	\$12K	\$13K	8%
Cash Disbursements:	<u>Plan</u>	<u>Actual</u>	<u>Cumm.</u>
Maintenance Reserve	\$7.4K	\$1.6K	\$21K
Capital Recovery	\$3.7K	\$3.3K	\$28K

CONSUMER

LIVELIHOOD

Post-launch

Maintenance

63

57

Regular users

69

67

Tried

92

96

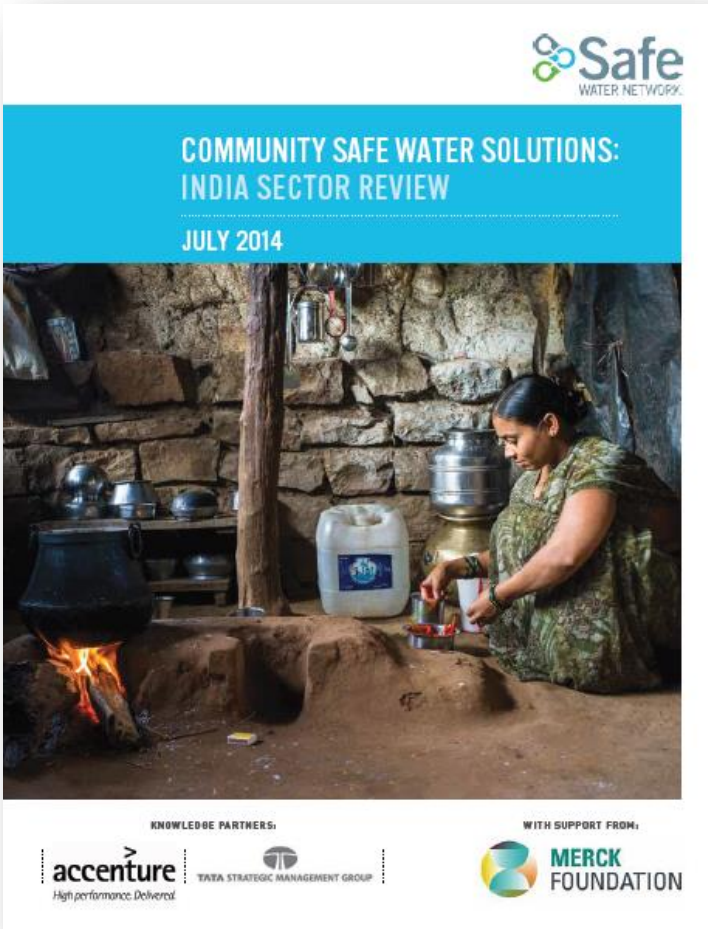
Available

94

100

Aware

MAINSTREAMING THE MODEL



KNOWLEDGE PRODUCTS
ONGOING

DONORS



NEWMAN'S OWN®
FOUNDATION



Tata Trusts & UL



Thank you