AGWATER SOLUTIONS

Improved livelihoods for smallholder farmers

Multiple Use Water Services - Does MGNREGA in India provide an Opportunity?

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Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) - Aims and Objectives

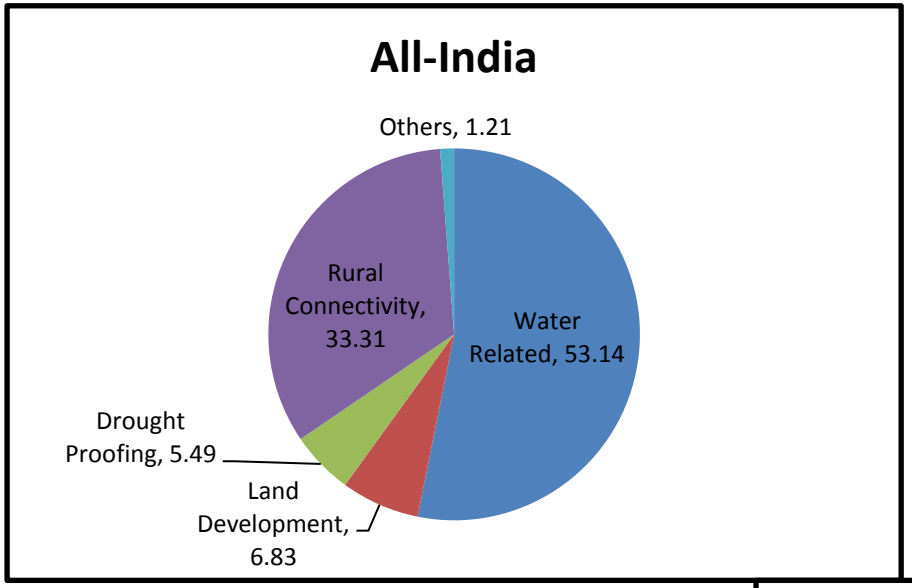
The objective of the Act is to enhance the livelihood security of the households in rural areas of the country by providing at least 100 days of guaranteed wage-employment in every financial year to every household whose adult members volunteer to do unskilled manual work

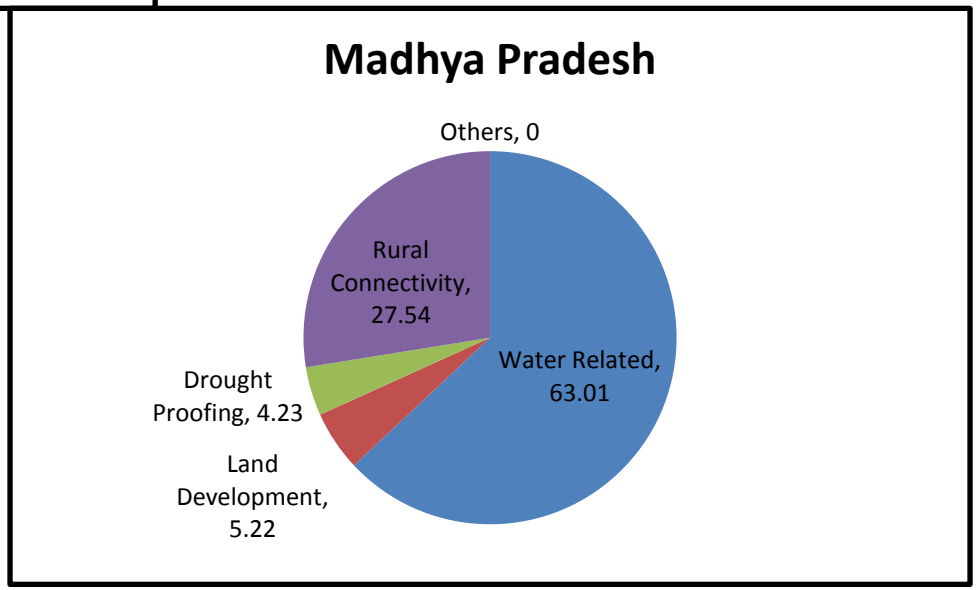
In addition to providing guaranteed employment, MGNREGA intends to foster conditions for inclusive growth ranging from basic wage security and recharging rural economy to a transformative empowerment process of democracy

Permissible works under the Act

- Water conservation and water harvesting
- Irrigation canals, including micro and minor irrigation works
- Provision of irrigation facility, plantation, horticulture etc on land owned by households belonging to certain Marginalized sections of society
- Renovation of traditional water bodies, including de-silting of tanks
- Flood-control and protection works, including drainage in waterlogged areas
- Land development
- Drought proofing, including afforestation and tree plantation
- Rural connectivity to provide all-weather access
- Any other work that may be notified by the Central Government in consultation with the State Government

Per cent of Total Expenditure on Completed Activities Allocated to Different Categories of Works -2009-10





Per cent of Total Expenditure on Completed Activities Allocated to Different Works -2009-10

Nature of Work	All-India	Madhya Pradesh
Flood control and protection	5.71	1.93
Water Conservation and Water Harvesting	17.26	17.66
Micro Irrigation Works	5.55	1.90
Provision of Irrigation Facility to Land owned by Eligible Farmers	10.71	37.53
Renovation of Traditional Water Bodies	13.91	3.99
Land Development	6.83	5.22
Drought Proofing	5.49	4.23
Rural Connectivity	33.33	27.54
Any Other Activity	1.21	0.00
Total Expenditure (US Billion $ Appx)*	4.0	0.43

*Does not include the expenditure incurred on on-going works during the year

Type of Structures Being Built

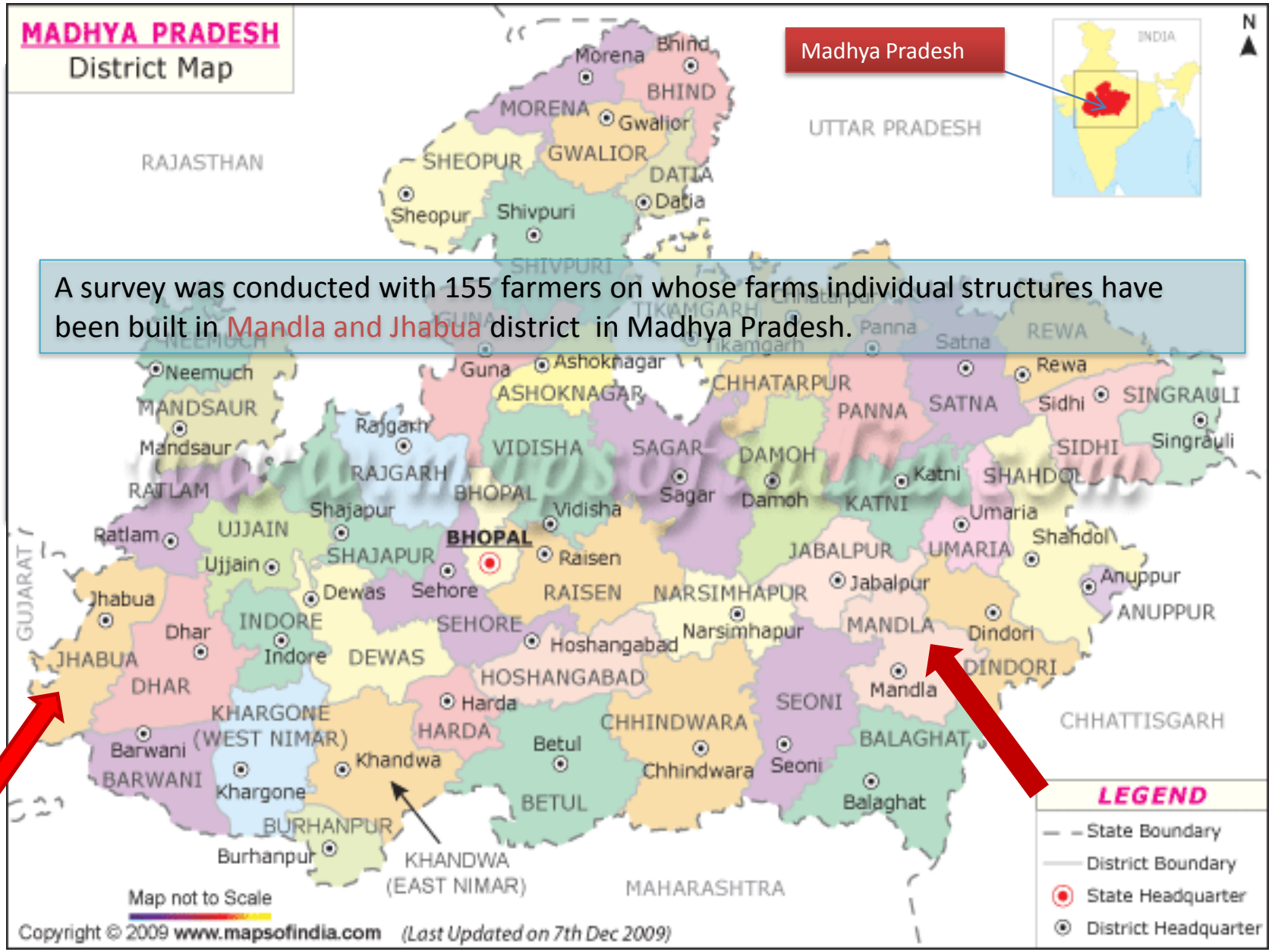
Type of Structures Built – Wells, Farm Ponds, Farm bunds, Gully plugging

Farm ponds and wells add to the on farm water storage availability. Farm bunds and gully plugging contribute to improved on farm management/usage of available water without adding to the storage.

A sample of 155 households selected from two districts of Madhya Pradesh

Type of Structure	Number of HHs	Percentages
Farm Ponds	25	16
Farm Bunds	34	22
Gully Plugging	0	0
Wells	96	62
Total	155	100

MGNREGA – Survey Site



Quality of Assets Built

Two Requirements

- **Assets be built without use of machinery.**
- **Ratio of wage to material 60:40 (Minimum)**

Are assets being built under MGNREGA of fairly good quality?

What criterion to use for evaluation engineering vs beneficiary perception

Four criterion – analogous but distinct - used for evaluation

Satisfaction criterion
Contrasting criterion
Existence criterion(Expected asset life)
Robustness (Durability) criterion

Findings: Impressions of NREGA structures

More than **90 percent feel that the structures built under NREGA are quite durable** and that these structures would last at least equal to or even more than the structures built under non NREGA programs.

The structures built under NREGA are as **cost effective** (not accounting for institutional and transaction costs) as those made under any other program.

However the **transparency of expenditures** made under NREGA **is lacking.**

A large majority of farmers are **satisfied with the quality of construction of these structures**. Almost 80 percent of the farmers feel that the quality of structures built under NREGA is either similar to or even better than those built under other programs

Preparing on farm bunds has improved moisture retention, leading to a significant **increase in crop yield during kharif season**. It has however, had **no effect on availability of water** and changes in farming practices **during the rabi season**.

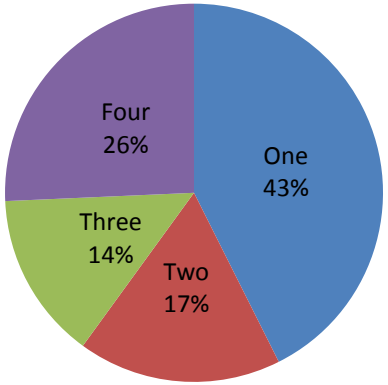
Multiple Uses of the Created Water Structures

Most of these structures (wells and farm ponds) are **multiple use structures** and have contributed, in varying extent, to making water available for irrigation, livestock, drinking and sanitation

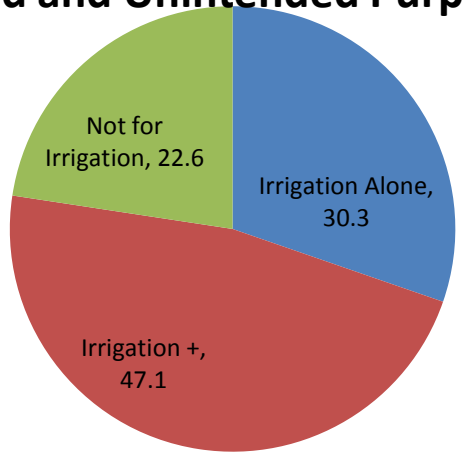
Nature of Water Use	Number of Households
Irrigation alone	47 (30.3)
Drinking alone	4 (2.6)
Livestock alone	15 (9.7)
Sanitation alone	0 (0)
Irrigation+ Drinking	4 (2.6)
Irrigation+ Livestock	13 (8.4)
Drinking+ Livestock	7 (4.5)
Drinking+ Sanitation	1 (0.6)
Livestock+ Sanitation	2 (1.3)
Irrigation+ Drinking+ Livestock	4 (2.6)
Drinking+ Livestock+ Sanitation	6 (3.9)
Irrigation+ Livestock+ Sanitation	10 (6.5)
Irrigation+ Drinking+ Sanitation	2 (1.3)
Irrigation+ Drinking+ Livestock+ Sanitation	40 (25.8)
Total	155 (100)

Objectives

Multiple uses of Single use Structures- Per cent of Beneficiaries According to Number of Uses of Created Structures



De-Facto Uses -Use of Structures for Intended and Unintended Purposes



Mere availability of water does not necessarily imply usage for single/multi purposes

Extent and Multiplicity of Use Depends upon

- The type of water structure
- The quantity of water available in the structure and seasonality of water availability
- The suitability of quality of available water for different usages
- Location/ Siting of the structure vis-à-vis location of the farm and house of the beneficiary
- Access to specific complementary equipment (DE / EM for irrigation; bucket/rope for drinking etc)
- Production/ marketing constraints in utilization of available water for multiple uses
- Use of water for a given purpose does not imply sufficiency/adequacy/ appropriate quality of water
- Trade-offs involved in using available water for single vs multiple uses in case of less than required water available

Summary: Multiple Use Opportunities

We feel MGNREGA is a good model for addressing questions of making irrigation water available to small farmers on a sustainable basis.

Though built **by design** as irrigation water structures, a number of beneficiaries have been using these structures, by default, for purposes other than the intended purpose as well. Opportunities thus exist for making these structures multiple use structures by design

MUS by design can help attain more productive usage of water and improved efficiency of the investments going in to MGNREGA program.

Better understanding of multiple use requirements of beneficiaries and their increased involvement in choice, design and location of works could help in improved multiple uses of the constructed structures

To begin with MUS can be attempted through convergence of MGNREGA works with the works carried out by different departments of the government such as rural drinking water supply. A similar convergence program with some of the activities carried out by Ministry of Water Resources and Ministry of Agriculture is already in place.

THANK YOU