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## **EXPLORING THE POTENTIAL OF MGNREGA FOR THE REVITALIZATION OF RAINFED AGRICULTURE IN INDIA**

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### **ABSTRACT**

Though MGNREGA happens to be an employment generation program at its core; initially encompassing activities under different heads to provide employment to the village communities; it has casted its potential towards rejuvenating rainfed agriculture along with short and long term environmental benefits. Within this context the present study sheds light on the intensity and distribution of works under different heads pertaining to revitalization of rainfed production systems i.e. water conservation and water harvesting, renovation of traditional water bodies and drought proofing for the year 2012-13. The study shows that with majority of the rainfed areas confined to five major states and primarily falling under semi-arid conditions, activities under MGNREGA with emphasis on watershed development and soil moisture conservation have appeared to be a potent tool to deal with the prolonged crisis of water scarcity in rainfed agriculture.

**KEYWORDS:** MGNREGA, Rainfed Agriculture, Water Conservation, Water Harvesting, Drought Proofing

### **INTRODUCTION**

The National Rural Employment Guarantee Act, enacted on 25<sup>th</sup> August 2005, and rechristened as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on October 2<sup>nd</sup>, 2009 is one of the most creative initiatives in the field of science policy and the largest ever public employment program visualized in human history involving Rs.34,600 crores in a period of just five years since its implementation, indicating the gigantic size of this program intended to benefit the poor (Khera, and Nayak, 2009; Ambasta et. al. 2008).

At its core MGNREGA is essentially an employment generation program, but eventually it has shown potential for augmenting agricultural activities especially in the rainfed areas, mainly through works associated with water harvesting, water conservation, drought proofing and renovation of traditional water bodies. Rainfed farming has been a complex, diverse and risk prone affair. With majority of rainfed agricultural regions concentrated in five states, it is characterized by low levels of productivity and low input uses which are mainly constrained by the unavailability of sufficient amount of water.

During the period of 1985 to 1995, the growth rate of rainfed production systems was higher in comparison to the irrigated agriculture. But post 1995 years witnessed a deceleration in the overall growth in agriculture, particularly of a higher magnitude in the rainfed situations compelling the government to accord high priority to the holistic and sustainable development of rainfed areas through integrated watershed development approach. For decades the rainfed areas have been on the leeward side of the skewed public investments which has further aggravated the associated problems with these areas. In spite of the fact that a large section of the mainstream media has consistently attacked the program for being an

example of 'waste and sops', the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has undoubtedly emerged as the strongest available instrument for investments in rainfed areas (Tiwari et al. 2011). The national flagship program is spending 65 % of its funds on watershed related NRM activities for creating durable assets to build production and livelihood system for sustained income. Within this context the present study intends to shed light on the intensity and distribution of works under different heads pertaining to revitalization of rainfed production systems i.e. water conservation and water harvesting, renovation of traditional water bodies and drought proofing for the year 2012-13.

### **MGNREGA: A VIABLE SOLUTION FOR RAINFED AGRICULTURE?**

The utilization of MGNREGA for rainwater harvesting and its plausible application for the revitalization of rainfed agriculture initially appeared more of a surrealist juxtaposition than a viable strategy to deal with the problems looming larger over the agricultural sector and indirectly over the food security to the millions of marginalized, undernourished and poor. In fact the program lacked an overarching approach and was just focused to provide some sort of relief from the gallows of exclusionary development.

With over four decades of muddled experiences in wage employment programs which suffered from perennial weaknesses, MGNREGA opened up an element of doubt regarding its success even before its inception. The enactment of MGNREGA in 2005 came about partly as a result of a sustained campaign by academics and activist across India. Though the program was enacted as a diluted version of the 'citizen's draft' but nevertheless it signified a huge step forward as a social security mechanism for the rural poor (Khera & Nayak, 2009; Ambasta et al. 2008).

Owing to its diversity across agro-ecological zones, the solutions to rainfed agricultural crisis inevitably involves planning and implementation at the local level for effective mitigation of the concurrent problems which in turn requires funding at the panchayat level. From this perspective MGNREGA envisages a unique environment for planning and execution unavailable earlier in the entire planning history for the creation of developmental assets such as drought proofing and watershed structures at the grass root level and this is precisely what makes MGNREGA stand out of the queue.

Watershed development is seen as the principal strategy for holistic development of rainfed areas, though in the initial stages it was conceived mainly as a measure for moisture conservation and soil stabilization. The new "Watershed Plus" approach to watershed development tabled out in the 10th plan seeks to ensure convergence of all other programmes that promote economic activities and generate increased employment opportunity (Mujumdar, 2006). As the scheme has progressed greater attention has been bestowed on the provision for watershed development. Under the latest list of permissible works under MGNREGA that spells out 18 different<sup>1</sup> types of works, the five topmost works relate to the structures for augmenting the rainfed agriculture of the region. Off these the water conservation and water harvesting works includes the construction of contour trenches, contour bunds, boulder checks, gabion structures, underground dykes, earthen dams, stop dams and springshed development. Under the arena of drought proofing included are afforestation and tree plantation while the other three works focuses on irrigation facilities and renovation of traditional water bodies.

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<sup>1</sup> List of works as per the operational guidelines – 4<sup>th</sup> edition, 2013. Due to demands from the sates for inclusion of new works under MGNREGA and building a stronger positive synergy between MGNREGA and agriculture and allied rural livelihoods the list of permissible works under the scheme has been revised making it more elaborate, specific and unambiguous. On the other hand the first edition of operational guidelines included only nine works.

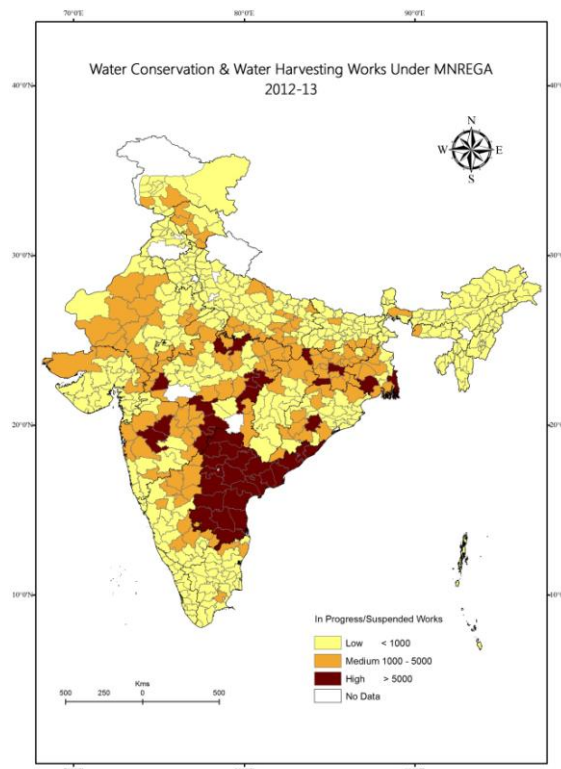
**Table 1: List of Permissible Works under MGNREGA (4<sup>th</sup> Ed.)**

<ol style="list-style-type: none"> <li>1. Water conservation and water harvesting including contour trenches, contour bunds, boulderchecks, gabion structures, underground dykes, earthen dams, stop dams and springshed development.</li> <li>2. Drought proofing including afforestation and tree plantation;</li> <li>3. Irrigation canals including micro and minor irrigation works;</li> <li>4. Provision of irrigation facility, dug out farm pond, horticulture, plantation, farm bunding and land development.</li> <li>5. Renovation of traditional water bodies including desilting of tanks;</li> <li>6. Land development;</li> <li>7. Flood control and protection works including drainage in water logged areas including Deepening and repairing of flood channels, chaur renovation, construction of storm water Drains for coastal protection;</li> <li>8. Rural connectivity to provide all weather access, including culverts and roads within a village, wherever necessary;</li> <li>9. Construction of bharat nirman rajiv gandhi sewa kendra as knowledge resource centre at the Block level and as gram panchayat bhawan at the gram panchayat level;</li> <li>10. Agriculture related works, such as, nadep composting, vermi-composting, liquid bio-manures;</li> <li>11. Livestock related works, such as, poultry shelter, goat shelter, construction of pucca floor, urine Tank and fodder trough for cattleshed, azolla as cattle-feed supplement;</li> <li>12. Fisheries related works, such as, fisheries in seasonal water bodies on public land;</li> <li>13. Works in coastal areas, such as, fish drying yards, belt vegetation;</li> <li>14. Rural drinking water related works, such as, soak pits, recharge pits;</li> <li>15. Rural sanitation related works, such as, individual household latrines, school toilet units, Anganwadi toilets, solid and liquid waste management.</li> <li>16. Construction of Anganwadi Centres.</li> <li>17. Construction of playfields.</li> <li>18. Any other work which may be notified by the central government in consultation with the state government.</li> </ol>
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## DATA AND METHODS

The present research work mainly utilizes district wise data for 2012-13 for different works under MGNREGA. The works included were under the following categories – a) water conservation and water harvesting, b) renovation of traditional water bodies, c) drought proofing works. The data has been analyzed using the Geographic Information System software ArcGis 10. Using cross tabulation, the distribution of such works among the major rainfed states in India has been analyzed, namely – Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh and Karnataka.

## RESULTS AND DISCUSSIONS



**Figure 1: Water Conservation & Water Harvesting Works Under MGNREGA, 2012-13**

Water conservation and water harvesting structures have been the most important construction activities under MGNREGA with 180 districts having more than 1000 works each under this category. Undoubtedly Andhra Pradesh has been the most important region in this regard with 22 of its districts having more than 5000 works each under this head. The intensity of works at all India level under water conservation and water harvesting head shows 398 districts with less than 1000 works, 140 districts having 1000-5000 works each and 40 districts with more than 5000 works each, out of which 22 alone are in Andhra Pradesh.

Down below the order 6 such districts are in Andhra Pradesh and 5 in Madhya Pradesh which shows that though the water conservation and water harvesting works are upbeat in rainfed regions but they are highly concentrated only in one state i.e. Andhra Pradesh while majority of the rainfed regions are spread over five states namely Rajasthan, Madhya Pradesh, Andhra Pradesh, Maharashtra and Karnataka. Within 1000-5000 works range the highest number of works are reported to be in Madhya Pradesh followed by Rajasthan, Jharkhand and Maharashtra. Down below the ladder major areas in Tamil Nadu, Karnataka, Southern Andhra Pradesh, Gujarat, Central Madhya Pradesh and Western Rajasthan.

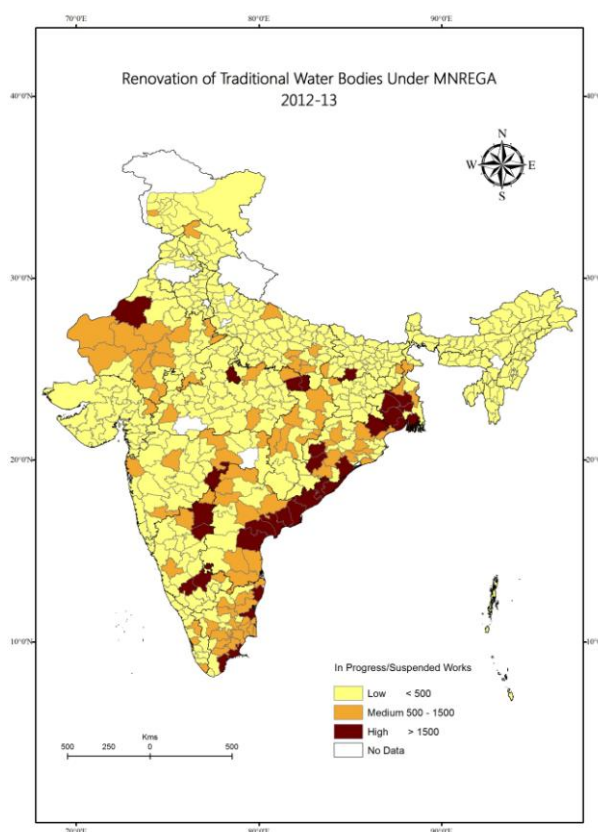
**Table 2: Water Conservation and Water Works**

Major States	In Progress/ Suspended Works (District-Wise)		
	<1000	1000-5000	>5000
Rajasthan	17	16	0
Madhya Pradesh	20	23	5
Maharashtra	11	15	6
Andhra Pradesh	0	0	22
Karnataka	17	12	0

Another important work which has been up in the ante has been the renovation of traditional water bodies. However the intensity of works under this head has been relatively lower and more dispersed than water conservation and water harvesting works. The most concentrated efforts in this regard is visible in Rajasthan which has the maximum number of districts having 500-1500 works each along with 17 districts having less than 500 works each and one district with over 1500 works under its belly. At all India level 457 districts lie in below 500 works zone while 89 in the 500-1500 works zone and 32 in above 1500 zone. Most of the districts having more than 1500 works each within its umbrella are located in the coastal districts of Andhra Pradesh and Odisha. Apart from Rajasthan, districts in Tamil Nadu too have majority of its districts having 500-1500 traditional water bodies under renovation.

**Table 3: Renovation of Traditional Water Bodies**

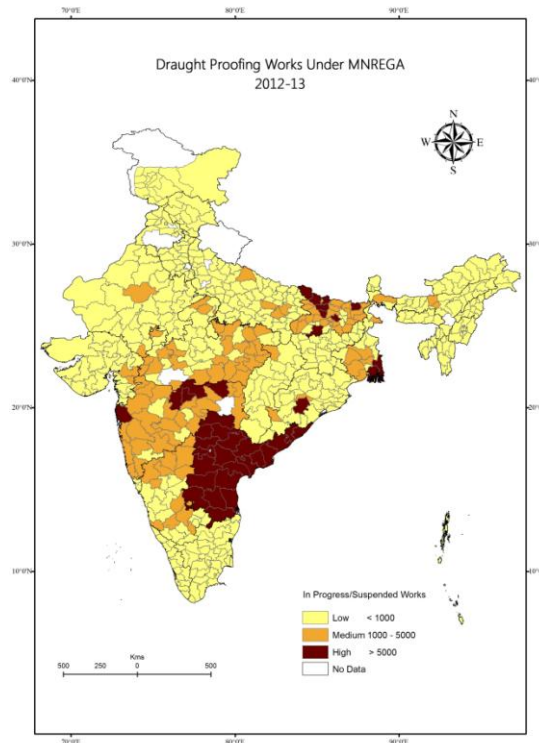
Major States	In Progress/ Suspended Works (District-Wise)		
	<500	500-1500	>1500
Rajasthan	17	15	1
Madhya Pradesh	42	4	2
Maharashtra	25	6	1
Andhra Pradesh	6	8	8
Karnataka	21	4	4



**Figure 2: Renovation of Traditional Water Bodies under MGNREGA, 2012-13**

The major rainfed states with only 28% (approx.) of the total works do not seem to hold a priority as far as distribution of works under this head is concerned. With the major chunk of the districts falling under 'less than 500 works' category, the renovation of traditional water bodies appears to be low in the agenda. Maharashtra, Karnataka, Madhya Pradesh, Gujarat and Jharkhand have almost all their districts having less than 500 works under this category.

Another prominent work category having significance for rainfed agriculture is drought proofing that focuses on afforestation and tree plantation. Very much similar to the water conservation and water harvesting works, there is a very high concentration of drought proofing works in Andhra Pradesh alone with 22 of its districts in the ‘above 5000 works’ category and none below that. Another striking aspect of the distribution and intensity of drought proofing works has been the concentration of ‘1000-5000 works category’ districts in Madhya Pradesh, Maharashtra and Northern Karnataka. Barring these regions, districts in all other parts have less than 1000 works each under drought proofing.



**Figure 3: Drought Proofing Works Under MGNREGA, 2012-13**

**Table 4: Drought Proofing**

Major States	In Progress/ Suspended Works (District-wise)		
	<1000	1000-5000	>5000
Rajasthan	31	2	0
Madhya Pradesh	22	26	0
Maharashtra	4	23	5
Andhra Pradesh	0	0	22
Karnataka	17	12	0

At the national level 436 districts had less than 1000 works each, while 104 districts were lying in the medium category with 1000-5000 works under this head. Up in the ladder 38 districts, majority of which lies in Andhra Pradesh, had more than 5000 works each under drought proofing. Taking a note of the major rainfed states, a much skewed scenario swells out with only Andhra and Maharashtra having the major chunk of drought proofing works. Thus apart from rainwater conservation and rainwater harvesting, works under other categories the other two categories do not appear to be evenly distributed across the rainfed regions which raises concerns over the optimum potential utilization of MGNREGA for augmenting rainfed agriculture.

This negligence is further reinstated by the fact that there are only 25 districts in the country where both water conservation and drought proofing works numbers more than 5000 each out of which 22 are located alone in Andhra Pradesh. Thus contrary to the wide belief Rajasthan lacks far behind in water conservation and drought proofing works. The largest share of the cake i.e. 342 districts each have less than 1000 works under water conservation and drought proofing. Down the line there are 89 districts each having 1000-5000 works related to water conservation and water harvesting and less than 1000 works related to drought proofing. Closer to the cliff, only five districts each have more than 5000 works related to water conservation and water harvesting and less than 1000 works related to drought proofing.

Looking at drought proofing from priority perspective, there are there are only seven districts each having more than 5000 works related to drought proofing and less than 1000 works focusing on water conservation and water harvesting. Moving upwards six districts have each having more than 5000 works related to drought proofing and 1000-5000 works focusing on water conservation and water harvesting. Thus drought proofing and water conservation works have not gone hand in hand with majority of the districts having less than 1000 works under both the heads.

**Table 5: Drought Proofing & Water Conservation Works Cross Tabulation**

		Water Conservation & Harvesting Works - District-Wise: in Progress/ Suspended Works			Total
		<1000	1000-5000	>5000	
Drought Proofing	<1000	342	89	5	436
	1000-5000	49	45	10	104
	>5000	7	6	25	38
<b>Total</b>		<b>398</b>	<b>140</b>	<b>40</b>	<b>578</b>

Similar to the water conservation and drought proofing works, the districts undergoing works under renovation of traditional water bodies and drought proofing as well do not appear to be cohesive strategy with least focus on renovation of traditional water bodies. Out of the total, 359 districts had less than 500 works under renovation of traditional water bodies along with less than 1000 works under drought proofing. On the opposite end, only 10 districts each had more than 1500 works related to the renovation of traditional water bodies along with more than 5000 works under drought proofing.

The second highest number of districts i.e. 81 had less than 500 works under renovation of traditional water bodies along with less than 1000-5000 works under drought proofing. On the other hand 12 districts which had traditional water bodies renovation works in excess of 1500 had less than 1000 drought proofing works. Thus on one hand through the example of Andhra Pradesh, MGNREGA has shown its potential for the development of augmentative infrastructure to support rainfed production systems while on the other hand the mismatch between works under different heads points to a loopholes and the requirement for better strategic integration of MGNREGA with the rainfed production systems.

**Table 6: Drought Proofing & Renovation of Traditional Water Bodies Works Cross Tabulation**

		Renovation of Traditional Water Bodies Works - District-wise: in Progress/ Suspended Works			Total
		<500	500-1500	>1500	
Drought Proofing	<1000	359	65	12	436
	1000-5000	81	13	10	104
	>5000	17	11	10	38
<b>Total</b>		<b>457</b>	<b>89</b>	<b>32</b>	<b>578</b>



## CONCLUSIONS

Though there have been several parallel programs to address the issue of revitalization of rainfed agriculture, MGNREGA has shown the potential for planning and implementation at the local level for effective mitigation of the concurrent problems which in turn requires funding at the panchayat level. With majority of the rainfed areas confined to five major states and primarily falling under semi-arid conditions, the slew of the activities related with conservation of soil moisture under MGNREGA such as water conservation and water harvesting, renovation of traditional water bodies and drought proofing shows their maximum concentration in these areas and thus have appeared to be a potent weapon to fight the prolonged crisis water availability in rainfed agriculture.

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