Multiple Use Water Services in India
Scoping Study

Scaling Up Community-based MUS through MG-NREGA

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Cover Photo: Land development works on poor community member's land, Kodankara, Kerala.
Photo: Barbara Van Koppen

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Acronyms and Abbreviations

INR	Indian Rupee
AFPRO	Action for Food Production
BDOs	Block Development Officers
BPL	Below Poverty Line
BPOs	Block Program Officers
CAG	Comptroller and Auditor General
CSE	Center for Science and Environment
IHD	Institute for Human Development
IIM-B	Indian Institute of Management, Bangalore
IISc	Indian Institute of Science
IITK	Indian Institute of Technology, Kharagpur
IRC	International Water and Sanitation Center
IWMI	International Water Management Institute
MDWS	Ministry of Drinking Water and Sanitation
MG-NREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MG-NREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MoRD	Ministry of Rural Development
NCAER	National Council of Applied Economic Research
PRI	Panchayati Raj Institution
SC	Scheduled Castes
SPS	Samaj Pragati Sahyog
ST	Scheduled Tribes
W_{LOCAL}	Wages prevailing in the local agricultural labor market
$W_{MG\text{-}NREGS}$	Wages offered under MG-NREGS

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EXECUTIVE SUMMARY

The Mahatma Gandhi National Rural Employment Guarantee Act of the Government of India provides a legal guarantee for 100 days of employment per year to adult members of any rural household willing to undertake public works at the prescribed minimum wages. In 2010-11, the program provided more than 2 billion person-days of employment to roughly 50 million rural households. With an annual outlay of close to USD 9 billion, MG-NREGA is arguably the world's largest rural livelihoods security program. The Act provides for a bottom-up participatory approach to planning and implementation of public works. Studies by IWMI and others suggest that well over half of the assets created under Mahatma Gandhi Rural Employment Guarantee Scheme (MG-NREGS) are water-related and that while a significant proportion among these were possibly designed for single-use but *de facto* multiple use structures. Given its emphasis on decentralized, participatory planning processes, MG-NREGS may be viewed as the world's largest laboratory for community-based MUS. This country-report focuses on exploring investment opportunities for the Rockefeller Foundation in the context of scaling up community-based MUS through MG-NREGS.

Data from a study of 140+ best-performing MG-NREGS water assets in 75 villages across 8 districts of Bihar, Gujarat, Kerala and Rajasthan shows that, on an average, these assets were able to recover their investments in a little over a year. We also found that MG-NREGS implementation deeply influences and is, in turn, influenced by the farm and non-farm labor markets. While the wage-benefits of MG-NREGS are clear from the data on number of person-days of employment generated, the quantification of non-wage benefits and their distribution requires deeper investigation. Wherever village communities have taken enthusiastically to the idea of MG-NREGS and where their enthusiasm has been supported by an able, well-staffed administration and capable local governance institutions and leadership, the results have been exemplary. IWMI studies indicate that five factors make or mar successful MUS implementation via MG-NREGS: (a) Contextual fit; (b) Village preparedness and attitude towards MG-NREGS; (c) Proactive and well-equipped MG-NREGS administration; (d) Empowered and enlightened village communities; and (e) Incentives and inventive flexibility.

Via this country report, we propose the creation of a MUS NREGA Network and, as a start, a three-district pilot project which will, through an *action-research – capacity building – experience sharing* protocol, aim to overcome the barriers to MUS and maximize the net positive outcomes from MG-NREGS. The Network will target three primary outputs: a) Science-based knowledge products – research papers and policy briefs – aimed at making practical policy recommendations; b) Improved capacities of local government *Panchayati Raj* Institutions (PRIs) and MG-NREGS administration; and c) wider dissemination and interaction to promote cross-learning, including with African partners. The 12-month pilot will be hosted and incubated within IWMI-India. At the end of the pilot, we expect that the initiative will spin-off into an independent entity for expanding its work and activities to other parts of the country in partnership with IWMI and IRC.

1. WHAT IS MUS?

Multiple-Use water Services (MUS) is a participatory approach that takes the multiple domestic and productive needs of water users who take water from multiple sources as the starting point of planning, designing and delivering water services. The MUS approach encompasses both new infrastructure development and rehabilitation as well as governance.

MUS emerged in the early 2000s when professionals from the water sub-sectors, in particular the domestic water, hygiene and sanitation (WASH) sector, and the irrigation sector began to see the untapped potential of providing water beyond the confines of conventional single-use mandates (Moriarty *et al.*, 2004). Cross-sectoral action-research documented in more than 100 cases of MUS innovation in over 20 countries (www.musgroup.net; Van Koppen *et al.*, 2009), economic analysis (Renwick, 2007), and policy dialogue in national and international forums, such as the World Water Forums in Mexico (2006) and Istanbul (2009), have confirmed this potential (Figure 1). Focusing on where sub-sector interests overlap leads to single-use sectors better achieving their own mandates while generating additional benefits. MUS offers three main advantages compared to single-use water service delivery models: 1) more livelihoods improvements, 2) more environmental sustainability, and 3) strengthened integrated water resource management (IWRM).

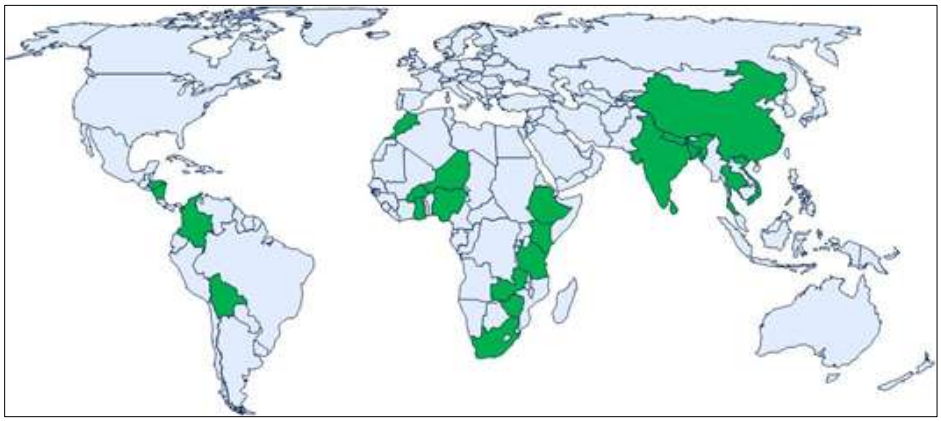


Figure 1: Countries where MUS has been applied

Livelihood returns

In terms of livelihood improvements, MUS concurrently improves health, food security, and income, and reduces women's and girls' drudgery, especially among the poor in rural and peri-urban areas where their multi-faceted, agriculture-based livelihoods depend in multiple ways on access to water. Livelihood benefits mutually reinforce each other. Thus, MUS gives "the most MDG per drop" (Renault 2008). Livelihood benefits tend to be more durable because participatory planning empowers communities to articulate their own priorities, thus enhancing ownership and willingness to pay for services. From the domestic sector perspective, adding income opportunities improves the ability to pay, hence, MUS unlocks new financing streams.

Livelihood returns from MUS investments are also more durable because they are holistic. People in many rural communities have practiced their own forms of 'integrated water resource development and management' for self-supply for many generations. Similarly, every water manager of a system designed for a single use has come to realize that people use a system for more than one purpose, planned or not. Prohibiting these other-than-planned *de facto* uses, for example by declaring such uses illegal, has typically been in vain. MUS turns the problem of unplanned uses into an opportunity to leverage investments, avoid infrastructure damage from unplanned use, and generate broader livelihood returns.

Environmental sustainability and justice

In terms of environmental sustainability and water efficiency, MUS recognizes that people use and re-use conjunctive water sources in ways that optimize, for them, the efficient development and management of rain, surface water, soil moisture, wetlands, and groundwater, and other related natural resources within their local environment. Even within the homestead, households can use up to nine different water sources, as found in Thailand (Penning de Vries and Ruaysoongnern 2010) Local knowledge and coping strategies for mitigating seasonal and annual climatic variability by combining multiple sources is at the heart of community resilience. Such efficiency and resilience will become ever more important as the impacts of climate change become more visible.

The MUS focus on the poor puts people and multiple uses at centre stage instead of casting allocation issues in terms of monolithic 'use sectors' that fail to differentiate between vested interests and multiple small-scale uses for basic livelihoods. Instead, MUS considers the distribution of water use by individuals, each with multiple water needs. Quantification of the distribution of water use is revealing. In rural South Africa, for example, 0.5 percent of users use 95 percent of the water resources. More than doubling current estimated water access by every rural user from 116 to 277 liters per capita per day would require the 0.5 percent large-scale users to share only six percent of their current water uses (Cullis and Van Koppen 2007). Focusing on the poor, MUS especially safeguards poor people's rights to water, food and livelihoods and their fair share of the resource in quantitative terms, and exposes poor people's greater vulnerability to unsafe water in qualitative terms.

A focus on community integrated water management

Last but not least, in opening up new livelihood and environmental opportunities, MUS recognizes that the natural intersection of multiple uses and multiple sources starts locally, at household and community level. MUS is bottom-up IWRM, starting with local users as clients and active participants instead of 'aid recipients'. MUS complements past IWRM efforts in two new ways. First, while IWRM tended to be a 'push' from the top-down (e.g. by establishing basin organizations), MUS is a 'pull' for integration from below, where human well being and water resources are integrated.

Second, past IWRM efforts tended to prioritize governance over infrastructure development. The 's' in MUS stands for "services" in the sense of reliably ensuring the availability of water in certain quantities and qualities, at certain times, and at a certain sites, during the full project

cycle and after the construction phase. Services result from the appropriate balance between sustainable infrastructure investments and water governance. Infrastructure investments to harvest and store water in the rainy season for use in the dry season increase the pie of available water resources for all. This win-win solution reduces competition for water in open basins where there are still uncommitted water resources available for development. Yet, in many IWRM debates that focused on sharing an inevitably limited pie, this solution tended to be ignored. Obviously, infrastructure development is a precondition to improve access to and control over water for the 'have-nots', even if that implies that the 'haves' need to save water when basins are closing.

Key questions

In the light of these untapped livelihood, resource and integration opportunities, the key question is: How can scaling up be accelerated? The question has two sides: first, what are the barriers and constraints that currently limit the scaling up of MUS and what is their comparative importance? (e.g., financing, governance, policy, awareness, implementation capacity); and, second, what are the opportunities for scaling up MUS modalities in terms of scaling pathways, overcoming challenges, and potential key partner institutions? These are the questions the Rockefeller Foundation posed to the International Water Management Institute (IWMI), in collaboration with the International Water and Sanitation Centre (IRC).

Geographic focus

The geographic focus of the scoping studies is five countries where IWMI and IRC see strong potential for scaling up MUS modalities: India and Nepal in Asia, and Ethiopia, Ghana, and Tanzania in Africa (linked to the Alliance for a Green Revolution in Africa). The answers to these questions are presented in five stand-alone country reports and one synthesis report. The present country report discusses the findings in India.

The research objective and questions are elaborated next. This is followed by an analysis of empirical MUS related research in Africa and South Asia with the aim to further conceptualize scaling up of MUS for investigation in the five countries and to enable a structured synthesis of the results. The section on theory of change discusses four MUS modalities and related scaling pathways, i.e. "what" can be scaled up. The chapter concludes with a section on the practice of change, i.e. "how" MUS has been scaled in the past, and can continue to be scaled up through networking.

Study objective and questions

Objective

The objective of this study is to conduct country-specific research on the barriers that limit the scaling up of a multiple use services modalities to water management, the comparative importance of these barriers, and possibilities for overcoming these challenges for poor and vulnerable people in South Asia and Africa.

Research questions

- What are the different MUS modalities that have emerged, and how are they related to specific scaling pathways?
- What are the most important barriers limiting greater adoption of these modalities?
- What specifically could be done to overcome these barriers?
- What specific organizations are well placed to overcome these barriers?
- What geographic conditions would be most suitable for scaling up each kind of MUS model?
- What kinds of policy incentives are needed in each case?
- What kind of capacities and skills need to be built?
- What kind of information dissemination and engagement/partnership building needs to occur?
- What is the optimal sequencing of interventions needed to enable broader scaling up?

Theory of change: MUS modalities and scaling pathways

We define scaling up MUS as: better institutionalization of more robust MUS modalities and achieving a wider geographic spread. For people in rural and peri-urban communities, multiple uses from multiple sources is already a wide spread practice. The holistic development and management of multiple sources for multiple uses continues, both as multiple uses of systems designed for a single-use, and also as self-supply, whereby users themselves invest in the development and management of water sources for multiple purposes. These practices are often informal, sometimes without formal institutions even knowing about them. For people in many communities, the notion of "MUS" is an articulation of what they do every day.

Scaling up MUS is primarily a matter of institutional transformation of water services delivery by government agencies, NGOs, financing agencies and donors, who conventionally structure their respective policies and water development programs into isolated and vertical sub-sectors (Van Koppen *et al.* 2009). Each sub-sector focuses on and budgets for the development of services for a single use, which is the sector mandate. This is often accompanied by pre-determined technologies and related management structures. Sub-sectors structure their accountability to tax payers and other financers by justifying their budget allocations according to their performance on a single livelihood dimension such as improved health through safe water for domestic uses, or improved health through nutrition, or food security, or income. Formal professional training in colleges and universities is structured along similar lines. This compartmentalization, with vested professional interests, is the main reason for single-use services, and, hence, the main barrier that MUS proponents have sought to overcome.

The 'theory of change' adopted by most MUS proponents was to gradually channel existing institutions and financing streams towards MUS as a win-win strategy to better meet sector mandates while generating additional benefits. Accordingly, MUS proponents started addressing sectoral divides in essentially four ways or four "MUS modalities" as shown in Table 1. This gradual channelling allows for leveraging of existing human, technical, institutional and financial resources.

The following description of the four MUS modalities is the 'ideal-typical' case. The precise content, relevance, current robustness and scaling potential greatly differ by country. Differences among and between modalities are a function of the entry point. They are not mutually exclusive but overlap and mutually support each other. Each modality contributes knowledge and resources to the common pool, which renders the whole more than the sum of the components. Ultimately, for example, the community-based MUS modality, in which community members articulate and negotiate the public water services they prioritize, would encompass all other three.

Table 1: MUS modalities

MUS modality	Priority setting	Implicit priority use and site	Primary investors in infrastructure and funding earmarks	Primary scaling partners
Domestic-plus	WASH –sector, including local government, line agencies and NGOs	Domestic, near homesteads	Sub-sector, funding earmarked for domestic and some other uses, specific service levels, and often to a limited set of technologies; co-investments by users	WASH sector, with support for productive uses; sector working groups, and research centres, in learning networks
Productive-plus	Agricultural line agencies (irrigation, fish, livestock, trees), NGOs	The single productive use of the line agency, siting where appropriate	Sub-sector, funding earmarked for specific productive and some other uses; often a limited set of technologies; co-investments by users	Agricultural line agencies and NGOs, with support for drinking water quality and other domestic needs; sector working groups, and research centres, in learning networks
Self-supply MUS	Users	Multiple uses, siting where appropriate	Users, limited by available technology choice	NGOs and private sector for technology supply, with support for drinking water quality, other domestic uses, productive uses and government support for market support, regulation; sector working groups, and research centres, in learning networks
Community-based MUS	Users	Multiple uses, siting where appropriate	Government or NGOs, with less earmarking of funds or with convergence; co-investments by users	Local government, with support of NGOs and line agencies; multiple sector working groups, and research centres, in learning networks

Domestic- and productive-plus modalities

The first two modalities are known as domestic-plus and productive-plus. Those who pursue these modalities work to scale up from within their own water sub-sector by widening the scope of public investments for their mandated single use to encompass other uses. Sub-sectors often subsidize capital investments in infrastructure, while communities are usually responsible for operation and maintenance. In +plus modalities, the implicit priority for either water for domestic uses near homesteads or crops in fields (or fisheries, or livestock watering)

continues to be set by sub-sector professionals, not local users. Planning and budgeting from the top-down and a narrow range of options continues to be the norm. Planning remains 'formal' in the sense of strong involvement of government and public donors and NGOs closely collaborating with government.

However, in the +plus modalities, the sub-sectors open up their mandate. This tends to happen in a step-wise fashion. The subsequent steps from single-use to multiple-use progress from: ignoring or denying non-planned uses or declaring illegal to: turning a blind eye on these uses ("not my job") to: implementing marginal practices on the ground to accommodate multiple uses to: accommodating *de facto* multiple uses at management level to: fully integrating multiple uses from multiple sources in planning, design and use (Renault 2010). Especially in the WASH and irrigation sub-sectors, these +plus modalities have developed into fairly robust scaling models.

These steps were supported by valuation studies that identified the range of *de facto* uses and calculated the returns (Meinzen-Dick, 1997; Bakker *et al.*, 1999; Renwick 2001). In +plus approaches, the water sub-sectors are investors interested in all returns on their investments, instead of investors who may go so far as to criminalize livelihood returns only because they were not planned.

A strong argument in favour of +plus modalities is that relatively small incremental investment costs generate major livelihood benefits and avoid damage caused by unplanned uses. The benefit-cost ratio of these incremental investments is high, as confirmed by the in-depth financial evaluation of both domestic-plus and irrigation-plus scenarios conducted by Renwick (2007).

The domestic-plus modality builds on the water services ladder. While the WASH sector assumes that water quantities at higher service levels are still primarily, if not exclusively used for domestic uses, empirical research confirms that poor rural and peri-urban users in agrarian societies use and re-use water for livestock and other productive uses well below even basic service levels (see Figure 2). Similarly, studies have shown how higher service levels in terms of quantities, nearby availability and reliability lead to more productive uses. Hence, domestic-plus consists of providing higher levels of service, roughly doubling or tripling current supplies.

As domestic-plus modalities maintain a priority for meeting people's domestic and sanitation needs near to or at homesteads or residential areas, productive uses also tend to concentrate there. This site is especially relevant for women, who tend to have a stronger say over income from productive activities around their homes than from distant household production. Further, for the land-poor, sick and elderly, the homestead may be the only place where they are able to use water productively. Thus, the relatively small incremental improvements to domestic water supply systems result in relatively high benefits from small-scale productive uses, principally backyard gardening, livestock and home-based industries. Renwick (2007) calculated that intermediate MUS service levels of MUS at 50 to 100 litres per capita per day

generate income which allows repayment of the infrastructure investment and operational costs within 6 months to 3 years.

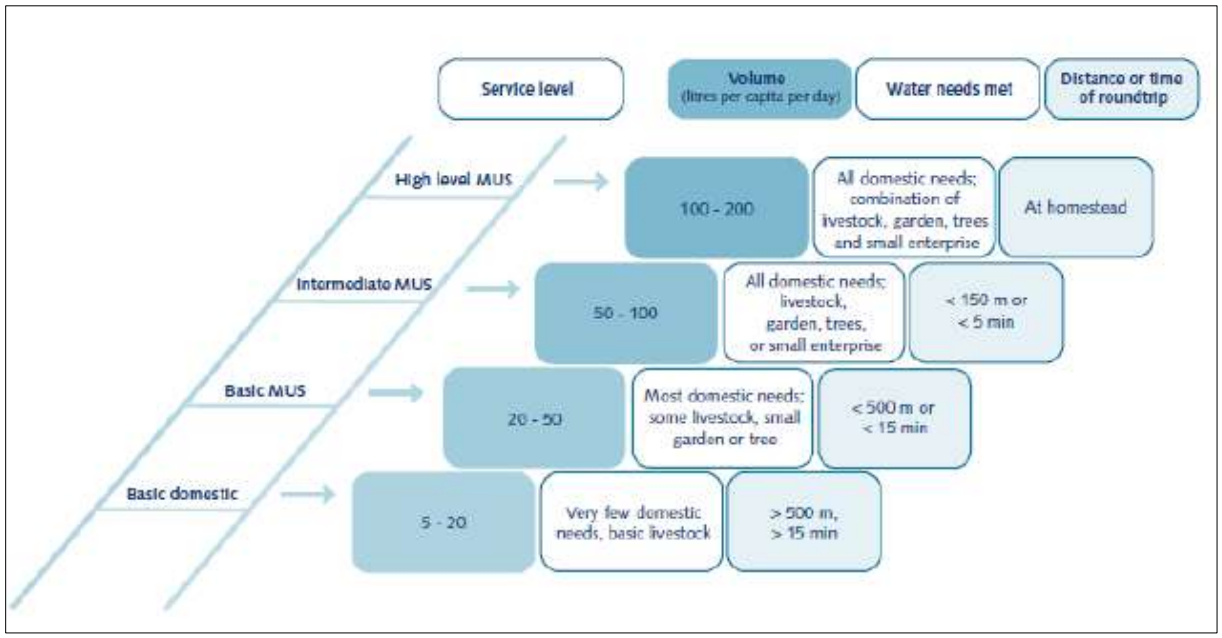


Figure 2: The domestic-plus water ladder (Renwick, 2007; Van Koppen *et al.*, 2009)

At any step on this service ladder, at least 3-5 liters per capita per day should be safe for drinking and cooking. This quantity of safe water is important for domestic water supplies, and for the many situations in which people drink water from other sources. Higher quantities of water of lesser quality for personal hygiene and sanitation are equally important for health (Van der Hoek *et al.* 2002). Scaling up domestic-plus happens mostly via the WASH sector, increasingly in collaboration with local governments.

The **irrigation-plus modality** most frequently applied in India, Vietnam, and China, is the FAO Mapping Systems and Services for Multiple Uses (MASSMUS) methodology for the modernization of large-scale irrigation systems. Relatively small incremental improvements are added on to existing irrigation infrastructure, which mostly improve access to surface water (cattle entry points, washing steps, small diversions for laundry, bridges, roads, etc.). Conjunctive use of seepage for groundwater recharge for irrigation and domestic uses are considered in planning for lining canals or not. In areas where canal water is the main source of water, water is supplied year-round and reservoirs are filled for residential areas. MASSMUS has specific domestic water and gender modules. MASSMUS makes many recommendations that can be applied to small-scale schemes as well, but they have not been systematized into a robust MUS modality as yet.

Other productive-plus modalities

The fisheries sector also conducted research on the better integration of fish and other products into water bodies, e.g. dams or irrigated fields as a 'productive-productive' approach (Nguyen-Khoa *et al.*, 2005). Ancient and modern small village reservoirs have been operated

and studied from various productive and domestic entry points, including irrigation, fisheries, forestry, livestock and domestic uses (Palanisami and Meinzen-Dick, 2001; Venot *et al.*, 2011). Documentation and implementation of these productive-productive and productive-domestic approaches is still fragmentary. With more consolidated effort and coordination they could well crystallize into robust MUS modalities.
Scaling up irrigation-plus and other productive-plus modalities is largely through technical line agencies and NGOs. Line agency collaboration with local government tends to be underdeveloped.

User-driven MUS

In the user-driven and community-based modality, water users define the water systems they need for their multiple uses. Government agencies and NGOs avoid setting a priority for any water use, or a specific technology. These approaches are more recent and most are still being piloted.

"Self-supply for multiple uses" is the one user-driven MUS modality. Here, users themselves invest in most infrastructure capital costs, often on an individual or household basis, although some communal arrangements may be included. Examples are self-financed wells, pumps, water harvesting techniques, gravity flows, drilling options, and water quality point-of-use treatment devices. Users decide about the purchase, installation and uses, which are often multiple. Scaling up self-supply is largely through market-led supply chains which are often highly effective and sustainable. Public sector support can focus on things like technological innovation, market development for supply chains, credit for purchase, and awareness raising.

The second user-driven MUS modality is **"community-based MUS".** In this modality, government or NGOs fund the bulk of mainly communal infrastructure construction or rehabilitation costs, but the choice of the technology, siting, and lay-out is in the hands of the community. Community members, including women and marginalized groups, are empowered to articulate their needs and demands, access information, and make choices regarding their assets and resources. This MUS modality applies the general principles of community-based natural resource management (CBNRM) to water resources. (Water sub-sectors divides probably contributed to the delay in adopting community-based management compared to land or forestry resources for example). Community-based MUS can be implemented on a project basis or align with the global trend toward decentralization of decision-making of public support through local government, or as a combination of both. An example of the latter is the SADC/Danida supported IWRM Demonstration Projects in five SADC countries (SADC/Danida 2009a and 2009b).

Integration in local government is important because local government agencies are permanent institutions, which not only provide a potential solution for financial and institutional sustainability of communal water systems, but also offer considerable scope for nation-wide scaling. Decentralized decision-making through local government about the allocation of public resources can lead to community-based MUS without any explicit intention, but as a result of a community's own prioritization for improving the use of multiple sources for multiple uses. This

is the case, for example, in India's Mahatma Ghandi National Rural Employment Guarantee Scheme (MG-NREGA), as elaborated in the India country study.

In scaling through local government or through programs interacting more directly with communities, the major challenge is to match bottom-up needs with top-down state and other funds. Institutional support should facilitate participatory planning, ensure inclusion of women and marginalized peoples, and build capacity for making informed choices to articulate long lists of community needs into priority-ranked, time- and budget-bound undertakings, or small 'bankable projects'. These projects are meant to be matched with available top-down financing streams. This can be achieved either by loosening some of the strings on financing and removing or modifying single-use and single-livelihood constraints, or by converging parallel financing streams and pooling them into one project.

In community-based MUS, communities plan and solicit external support based on their overview of all multiple uses and multiple sources for their livelihoods. At this level they can tap efficiencies of developing infrastructure for multiple uses and combining and managing multiple conjunctive sources, which saves funds. Also, communities can negotiate their water needs *vis-à-vis* the needs of other users in the same watershed and at higher levels. Inter-basin transfers may also warrant negotiation. They can formally voice their concerns through local government agencies, up to watershed, district and higher levels as the issue at stake requires, without depending on the top-down establishment of new governance layers like watershed and basin organizations where the more vocal social groups tend to dominate. In this way, community-based MUS is the lowest appropriate level for pro-poor IWRM.

The practice of change: MUS networking

The 'theory of change' of scaling via one of the four modalities or a combination thereof is one side of the coin. The other side is the 'practice of change'. In the past, MUS innovation and scaling was primarily the result of the effective crafting of networks of MUS proponents from local to global level into communities of practice or learning alliances, primarily through the global MUS Group (see www.musgroup.net). A 'right mix' provides for well-informed and rigorous evidence-based innovation, in which next generic lessons and local specificities are continuously identified. The same network also ensured continuous dissemination and advocacy of this evolving body of knowledge. Such a network also brought the 'right mix of people' together, encompassing water users organizations and professionals from the different sub-sectors; academics, policy makers, and implementers; experts at the lowest local level up to national and global levels; donors and financing agencies and government officials. This scoping study also analyses such past innovation and networking and recommends partners for future networking to implement the high-potential MUS scaling pathways.

2. GEOGRAPHIC FOCUS: INDIA

India was selected because of the potential of massive scaling up of community-based MUS via the Mahatma-Gandhi National Rural Employment Guarantee Scheme (MG-NREGS). While the primary goal of MG-NREGS is employment creation for the poor, the decision on how to allocate the available labor is decentralized to district and local government agencies and community leaders. IWMI researchers found that over half of the selected works were for water and drought proofing and most assets were for multiple uses from multiple sources. This confirmed the integrated nature of local water management and people's preference for holistic public water services, if they have a say in the allocation of public resources. Indeed, given its emphasis on decentralized, participatory planning processes, and the fact that the majority of MG-NREGS assets are used for multiple uses, MG-NREGS can be viewed as the world's largest laboratory for community-based MUS.

This country report focuses on exploring investment opportunities in the context of community-based MG-NREGS water assets. Section 5 of the report summarizes the results from field studies on MG-NREGS water assets and the ways in which the local labor markets influence, and are, in turn, influenced by, MG-NREGS implementation. Sections 5 and 6 identify drivers of and barriers to successful MG-NREGS implementation at the village level, and explore challenges and opportunities for improvement. Section 8 outlines an investment proposal for a MUS-NREGS Network which will aim to fill the knowledge and capacity gaps to scale up MUS in rural India.

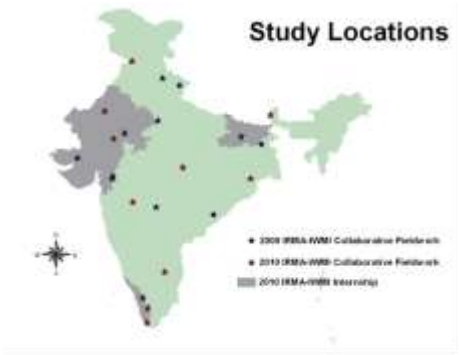


Figure 3: Student research study locations
Source: Shah *et al.* (2010)

The report is based on the research conducted by IWMI and partners over the past 2 years and on a review and synthesis of the literature on the performance and impact of MG-NREGA implementation in India since 2005. It brings together insights from authors' fieldwork in Dahod (Gujarat) and in Palakkad, Thrissur and Trivandrum (Kerala); field studies carried out by scores of Masters students under IWMI supervision in 30 districts across 12 Indian states (Figure 3); and meetings with key stakeholders in Delhi, Gujarat and Kerala during the period July to October 2011.

3. MG-NREGS: EMPLOYMENT GUARANTEE AND WATER SECURITY THROUGH COMMUNITY-BASED MUS

The National Rural Employment Guarantee Act (later renamed the *Mahatma Gandhi National Rural Employment Guarantee Act*) was enacted in 2005. The Act provides a legal guarantee for 100 days of employment per year to adult members of any rural household willing to undertake public works at the prescribed minimum wages[1]. Starting from the 200 most *backward* districts in 2005-2006, the implementation of the program spread to an additional 130 districts in 2007-2008 and to all 615 districts of India by 2008-2009 (Figure 4). In 2010-2011, the program provided more than 2 billion person-days of employment to roughly 50 million rural households (MoRD 2011). With a total outlay of close to USD 9 billion per annum, MG-NREGS[2] is arguably the world's largest rural livelihoods security program.

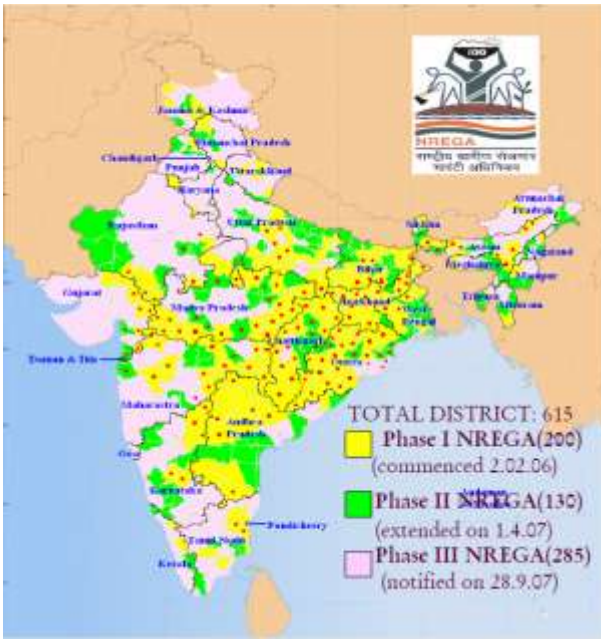


Figure 4: Phase-wise spread of MG-NREGS implementation
Source: MoRD (2010)

However, it is not only its grand size that makes MG-NREGS unique. MG-NREGS provides for a participatory approach to planning and implementation of public works. All those interested in getting wage employment under the program are required to apply to the *Gram Panchayat*[3]. The works to be carried out under the program are recommended by the *Gram Sabha* – the general body of the *Gram Panchayat*; and approved by the *Zilla Panchayat* at the district level in consultation with the MG-NREGS administration. The MG-NREGS guidelines (see Box 1) provide a list of permissible works and work categories including water conservation and water harvesting, restoration of traditional water bodies, irrigation works, drought proofing, and flood control. Subject to some general conditions, such as 60:40 ratio of wages and materials, and technical feasibility, village communities are free to choose any work to be taken

[1] In 2010-11, the prevailing wage rate for unskilled manual labor under MG-NREGA was INR 120 (≅ USD 2.50)/day.
[2] The National Rural Employment Guarantee Act is the central Act that provides a legal guarantee of employment to people. Implementation of the Act is done by state governments. For this purpose, each state government is supposed to frame an employment guarantee *scheme*, usually called the National Rural Employment Guarantee Scheme . In this note, MG-NREGA and MG-NREGS are used interchangeably to mean the scheme being implemented in each state in accordance with the national Act.
[3] *Gram Panchayats* represent the basic unit of administration in the *Panchayati Raj* system of decentralized governance in India. The three-tier system also consists of *Block Panchayats* (called *Taluka Panchayats* in Gujarat) and *Zilla Panchayats* (District-level *Panchayat*). Together, the decentralized governance institutions are often referred to as *Panchayati Raj* Institutions.

under MG-NREGS. Further, while a third of the workers must be women, in reality, women's participation in MG-NREGA has been close to 50 percent overall and as high as 90% in some places. All this is implemented with the support of a dedicated administrative set-up in each state (see Box 1 and 2). Moreover, MG-NREGS promotes inter-sectoral convergence across the different government programs and schemes for more effective planning and investments in rural areas. National guidelines have been developed with various other ministries (http://www.nrega.net/csd).

Box 1: Summary of the key provisions and guidelines of MG-NREGS

1. Objective: a) To guarantee 100 days of wage employment in a financial year to any rural household whose members volunteer to do unskilled manual work; b) To create durable assets and strengthen livelihood resource base of the rural poor.
2. Adult members of any rural household may apply for employment if they are willing to do unskilled manual work.
3. Such a household will have to apply for registration with the local Gram Panchayat in writing or orally.
4. After due verification, the Gram Panchayat will issue, free of cost, a Job Card to the household as a whole which will bear the photographs of all adult members willing to work under NREGS.
5. A Job-Card holding household may submit a written application for employment (minimum 15 days) to the Gram Panchayat, stating the time and duration of work sought.
6. The Gram Panchayat will issue a dated receipt of the written application for employment, against which the guarantee of supplying work within 15 days applies.
7. Employment will be given within 15 days of application, failing which an unemployment allowance in cash has to be paid.
8. At least one-third of the people provided with work has to be women.
9. Wages are to be paid according to the Minimum Wages Act 1948 for agricultural labor in each state but not less than INR 120/day.
10. Wages have to be paid on a weekly basis and not later than 15 days.
11. Each district has to prepare a shelf of projects that can be undertaken under MG-NREGS; categories of permissible works are as follows:
    - Water conservation and water harvesting
    - Drought proofing including plantation and afforestation
    - Irrigation canals including micro and minor irrigation works
    - Provision of irrigation facility, plantation, horticulture, land development to land owned by households belonging to the SC/ST, or to land of the beneficiaries of land reforms, or to land of the beneficiaries under the *Indira Awas Yojana*/BPL families
    - Renovation of traditional water bodies including de-silting of tanks
    - Land development
    - Flood control and protection works, including drainage in water-logged areas
    - Rural Connectivity to provide all-weather access
    - Any other work that may be notified by the Central Government in consultation with the State Government
12. The maintenance of assets created under the Scheme (including protection of afforested land) will be considered as permissible work under MG-NREGA.
13. At least 50 percent of works have to be allotted to Gram Panchayat for execution. The other Implementing Agencies can be Intermediate and District *Panchayats*, line departments of the Government, Public Sector Undertakings, Cooperative Societies with a majority shareholding by the Central and State Governments, and reputed NGOs having a proven track record of performance.
14. Self-Help Groups may also be considered as possible Implementing Agencies.
15. A 60:40 ratio or higher has to be maintained between wage and material cost.

16. Work has to be provided within 5 km of the village radius; else, extra 10 percent wages are payable.
17. Worksite facilities such as crèche, drinking water, shade have to be provided
18. Social audit has to be done by Gram Sabha.
19. Grievance mechanisms have to be put in place to ensure responsive implementation;
20. All accounts and records have to be made available to anyone for scrutiny after paying a specified fee.

Box 2: MG-NREGS administrative set-up in Kerala

Each state is supposed to design its own MG-NREGA scheme and its own administrative set-up to align with the local self-governance institutions (*Panchayati Raj*) and line departments at the state, district and block levels (see Annex 2 for the overview of relevant ministries).

In Kerala, the Commissioner Rural Development functions as the Employment Guarantee Commissioner. The Mission Director heads the NREGS Cell, supported by Program Officers (Figure 5).

There are 14 districts in the state. The District Collectors are designated as the District Program Coordinators and are supported by Joint Program Coordinators. At the Block level, Block Program Coordinators (BPOs) manage the scheme. The Block Development Officers (BDOs) are designated as BPOs. There are 152 Blocks in the state which are co-terminus with the second tier of *Panchayat Raj* system. The Secretary, *Gram Panchayat* is the implementing officer at his/her level. There are 978 *Gram Panchaya*ts in Kerala.

The budget cycle for monsoon works is as follows:

2 October	Discussion**s** with *Gram Sabha* about works.
15 October	Consolidation of *Gram Sabha* works.
25 October	Preparation of action plan.
1 November	Scrutinizing plans for technical viability.
30 November	Final decision of action plan.
31 December	Final labor budget.
10 January	Approval from *District Panchayat*.
20 January	Submission of works to state level.
31 January	Submission of works to central national government.
28 February	Approval of state budget.
10 March	Approval of labor and workplan.
1 April	Finalizing spillovers.
15 April	Approval of spill over work and financial budget.
2 May	*Gram Sabha* meeting. June**:** implementation action plan. (Field visit *Palakkad Gopalakrishnan* Block Program Officer MN-NREGS)

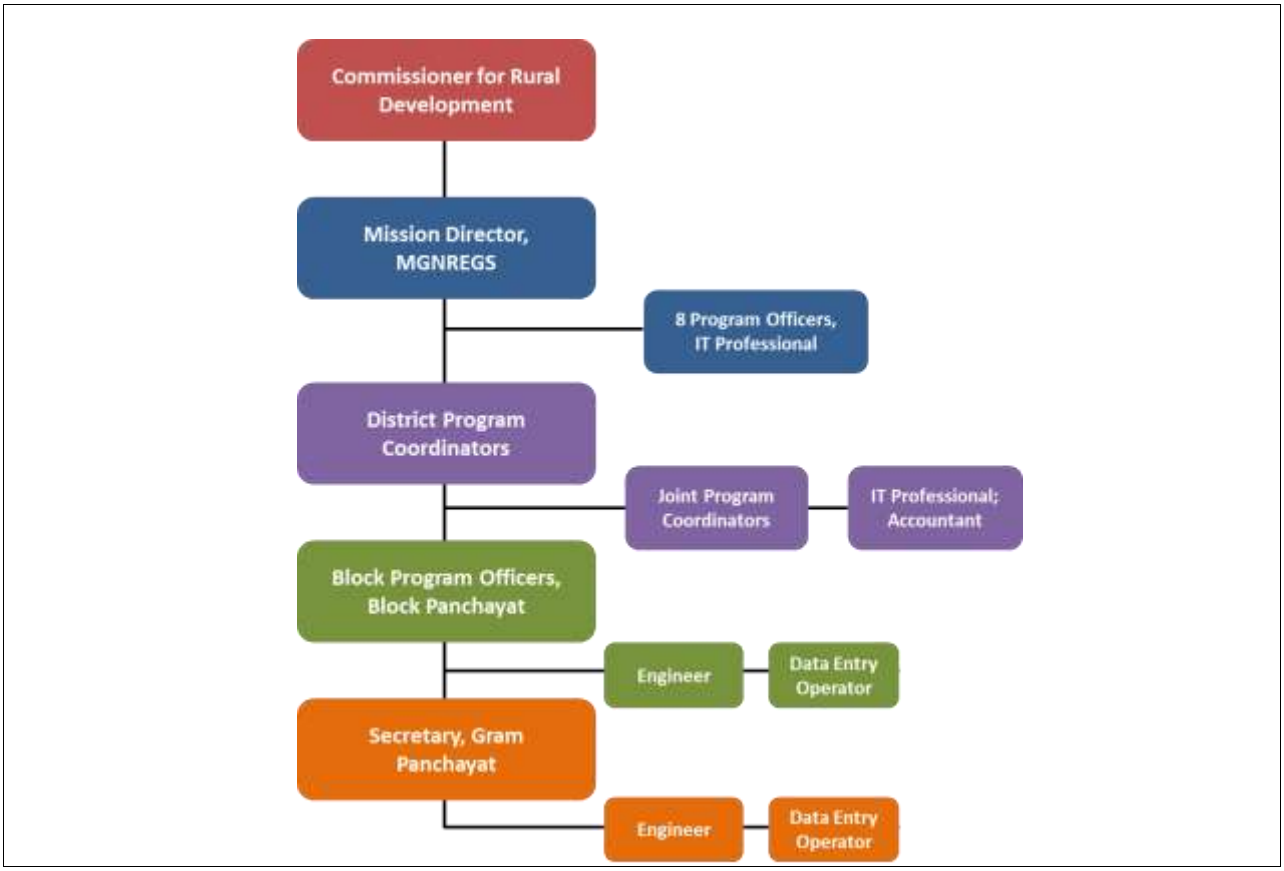


Figure 5: MG-NREGS administrative set-up in Kerala

Data on the MG-NREGS website and field studies by IWMI show that well over half of the assets created under MG-NREGS are water-related (MoRD 2011, Shah *et al.* 2010, Verma 2011). Over half of the water assets surveyed by IWMI in Madhya Pradesh were possibly designed for single-use but *de facto* multiple use structures (Malik 2011; Figure 6). Malik (2011) also found that 40% of the designed single-use structures were serving three or more purposes. We found similar results in Bihar, Gujarat, Kerala and Rajasthan (Verma 2011; Figure 7) even though these studies did not specifically look for multiple uses. Another study conducted by AFPRO (2010) found that MG-NREGA assets in Gumla (Jharkhand) initially constructed only for irrigation were also serving fisheries and sericulture and leading to much more significant outcomes than planned.

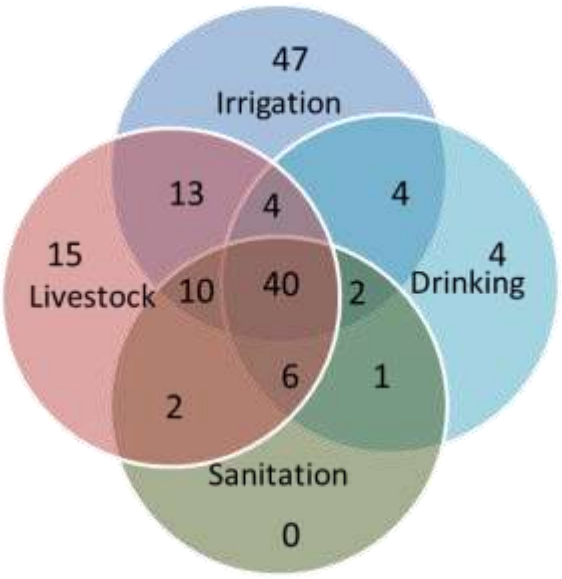


Figure 6: *De facto* MUS at play in MG-NREGS water assets in Madhya Pradesh
Data Source: Malik (2011)

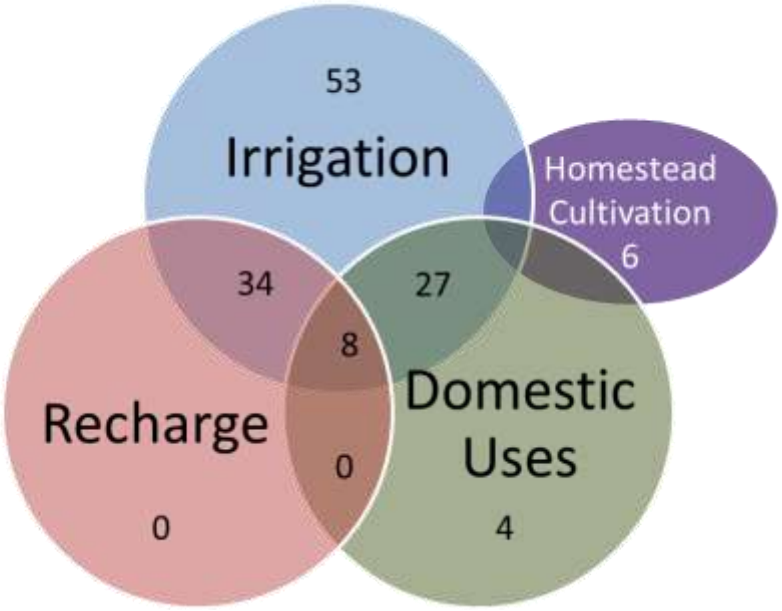


Figure 7: Multiple use incidences in Bihar, Gujarat, Kerala and Rajasthan
Data Sources: Kumar and Chandra 2010 (Bihar), Gaur and Chandel 2010 (Gujarat), Nair and Sanju 2010 (Kerala) and Singh and Modi 2010 (Rajasthan).

MG-NREGS is also one of the few self-targeting programs of the Government of India. Experience of targeted anti-poverty and social security programs in India has been poor. Most targeted programs fail to reach the desired group because of corruption and embezzlement.

MG-NREGS self-selects its clientele since the better-off are unlikely to be willing to work for minimum wages. All this has meant that MG-NREGS has become the flagship social security program of the Government of India. This is not to say that everything is working as it should. Instances of deep-rooted corruption, political favoritism and poor quality of MG-NREGS assets have resulted in sharp criticism and disenchantment with the program. It has also been noted that unless the intent of MG-NREGS as a legal right is not effectively communicated, it is in danger of getting branded as '*raahat kaam*' or 'relief work' in the minds of its intended beneficiaries. Further, it can be argued that by completely bypassing the better-off rural population, the program alienates the village elite who, either formally via constitutional bodies like *Gram Panchayat* or informally via their economic and social clout, tend to be the opinion leaders in villages.

Shah (2009) suggests that it is important to distinguish between the scheme's wage and non-wage benefits. While the poor may benefit from both, the better-off in the village would be primarily interested in the latter. Aiyar (2009) and Shah (2009) point out that trivial non-wage benefits and concentration of wage-benefits on the non-poor would strengthen the case for cash transfers. Verma (2011) likewise surmises that unless good quality rural assets are created under MG-NREGS, the program might eventually get replaced by an information technology driven direct cash transfer program as that will not require a huge administrative set-up like MG-NREGS. Cash transfer programs might be able to deliver social security and income guarantees at lower costs and more effectively, but the significant water security opportunity that MG-NREGS offers will be lost. The challenge therefore is to enhance the stake of both groups in maximizing the net positive impacts of the program. MG-NREGS is not only the world's biggest employment guarantee and social security program but also a massive rural water security program (Shah *et al.* 2010; Verma 2011a).

4. Performance of MG-NREGS as community-based MUS: The experience so far

There have been a large number of studies on the performance of MG-NREGS across the country on varying themes such as adherence to implementation protocol (IITK 2010); overall success and failure of MG-NREGS (Ambasta *et al.* 2008; Mukherjee and Ghosh 2009; NCAER 2009); performance and quality of MG-NREGS assets (CSE 2008; AFPRO 2010); income, employment and productivity impacts (Kareemulla *et al.* 2010); participation of women and disadvantaged groups (ISWSD 2008; NFW 2008); labor market interactions (IIM-B 2008; IHD 2008); and social and environmental impacts (Uppal 2009, Indian Institute of Science 2010, Tiwari *et al.* 2011). While the wage-benefits of MG-NREGS are clear from the data on number of person-days of employment generated (more than 2 billion for 2010-11), the quantification of non-wage benefits and their distribution requires deeper investigation.

Given the centrality of water investments in MG-NREGS, IWMI too has been involved in several studies over the past two years. In 2009-2010, IWMI supported exploratory field studies of 40 MG-NREGS works in 11 districts of 9 Indian states. In 2010-2011, IWMI again supported field studies in another set of 11 districts in 9 states, specifically focusing on MG-NREGS interactions with local labor markets. These two studies were synthesized and results presented to the Ministry of Rural Development, which is, Government of India – the nodal agency responsible for implementation of MG-NREGS (Shah *et al.* 2010). In the same year, IWMI also supported case studies of 140+ best-performing MG-NREGS water assets in 75 villages across 8 districts of Bihar, Gujarat, Kerala and Rajasthan (Verma 2011). In this section, we first briefly summarize the results of our own research and then discuss findings from available literature sources to provide an overview of some of the key results on MG-NREGS impacts and performance drivers.

Non-wage benefits of MG-NREGS

Data from a study of 140+ best-performing MG-NREGS water assets in 75 villages across 8 districts of Bihar, Gujarat, Kerala and Rajasthan show that, on an average, these assets were able to recover their investments in a little over a year (Verma 2011; Table 2, Table 3; Figure 8). Our studies also show that while people preferred private assets, public assets benefitted a larger area and more people, leading to higher returns on investments. While creation of new assets too was highly beneficial, investments in expanding, deepening, improving and renovating existing assets provided the highest returns[4].

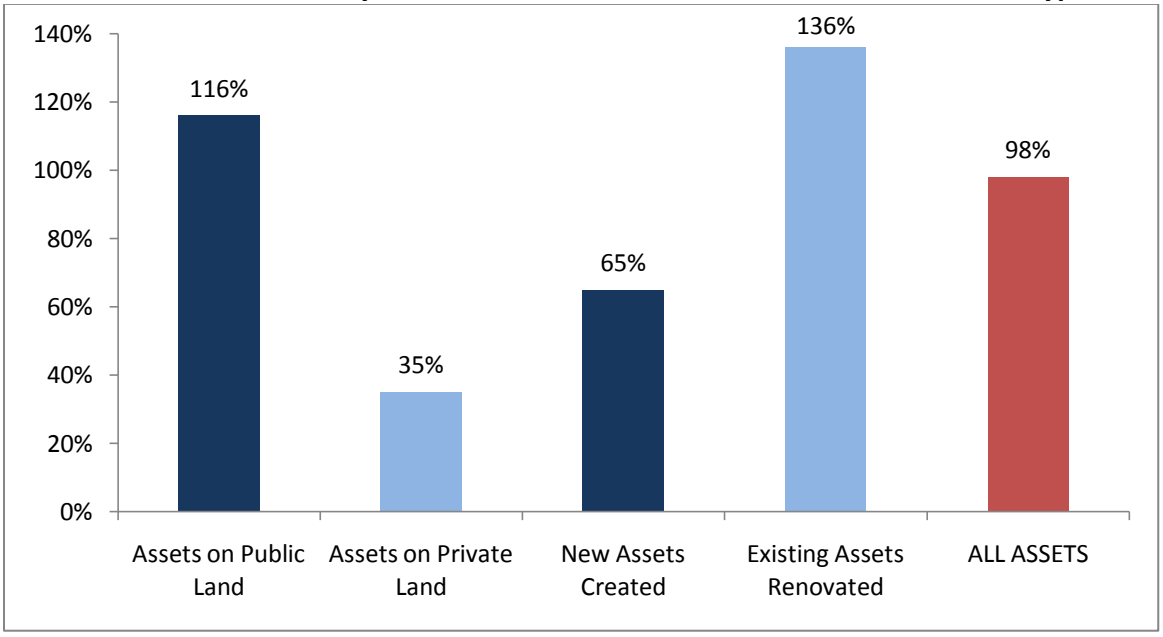
[4] It is worth noting here that the valuation of returns on investment included only some uses that could be easily quantified. For instance, for assets which were used for irrigation as well as for pisci-culture, we estimated benefits from both uses. However, where assets provided or enhanced benefits from availability of water for bathing and washing, for livestock use etc., our valuation did not include these since these were more difficult to quantify in rupee terms.

Table 2: Types of water assets studied and their uses

	Public Assets	Private Assets	Existing Assets	New Assets	All Assets
Sample size	99	44	83	60	143
Average Investment	INR 468,826	INR 323,124	INR 343,952	INR 185,579	INR 335,291
Average Labor days generated	2,285	1,662	2,197	2,160	2,184
Uses of assets	Irrigation Recharge Domestic Livestock Pisciculture Fishing	Irrigation Domestic Pisciculture	Irrigation Domestic Pisciculture	Irrigation Recharge Domestic Livestock Pisciculture Fishing	
Average Area benefitted (Ha)	18.93	4.29	14.86	14.86	14.86
Average Incremental Profit (INR/ Ha)	INR 25,900	INR 20,532	INR 25,739	INR 22,358	INR 27,873
% of investment recovered in one year	116%	35%	136%	65%	98%

Source: Verma 2011

Table 8: Benefits from one year use as a ratio of investment in different asset types



Figure

Source: Verma 2011

Across the four states, we did not notice any issues regarding the maintenance and upkeep of private assets. It was clear that the beneficiary had to take care of the new or renovated asset once MG-NREGS investments were made. However, this was not so clear in the case of public assets.

In Kerala, of the 23 public ponds, only one was being maintained by the community. Villagers, including those who were directly benefiting from the asset, asserted that it was the responsibility of the *Gram Panchayat* to regularly clean and maintain the assets. Community participation in general upkeep was absent (Nair and Sanju 2010). Likewise in Gujarat, Gaur and Chandel (2010) found no mechanisms in place for the maintenance of public assets. Part of the reason they ascribed for this was that the benefits from public assets, though much higher, were diffused over a larger group of beneficiaries. Hence, there was little interest among individual users for regular maintenance. In Rajasthan, Singh and Modi (2010) noted that while communities were *vigilant* about the maintenance of public assets in both Dungarpur and Tonk, they were either incapable or unwilling to contribute monetarily for asset maintenance. In Bihar, Kumar and Chandra (2010) concluded that public assets were clearly unsustainable due to poor maintenance and recommended that special provisions be made for the *Gram Panchayats* to undertake repair and maintenance work on a regular basis.

Thus, while in terms of return on investment, public assets performed much better, more work and thinking needs to be done regarding the maintenance, ownership and sustainability of public assets created under MG-NREGS. Public assets that disproportionately benefited some influential small groups of powerful farmers were more likely to be taken care of, much like in the case of private assets. But assets which offered small benefits to a large number of people spread evenly across the board were most likely to degenerate in the medium to long run. This incentive-deficit (Shah 2009) and the paradox between equity and effectiveness were painfully apparent in an overwhelming majority of the cases.

Several of our inferences echoed in other MG-NREGS studies as well. The Indian Institute of Management, Bangalore (IIM-B) conducted a study in select districts of Andhra Pradesh and Karnataka and offered recommendations on improving sustainability of MG-NREGS assets, ensuring timely payments and launching an awareness campaign to improve the community's understanding of MG-NREGS (IIM-B 2008). Uppal (2009) found that the impact of MG-NREGS assets is not restricted to direct economic benefits and that participation in MG-NREGS reduced the likelihood of households resorting to child labor.

MG-NREGS Interactions with labor markets

MG-NREGS deeply influences and is, in turn, influenced by the farm and non-farm labor markets. The design of MG-NREGS implicitly assumes that every village has poor people who demand more work than is locally available at the government-determined minimum wage rate. This is probably true for many villages in India, but not always. As a result, we found that interactions with local labor markets critically influence the performance of MG-NREGS.

A. Labor market influences on MG-NREGS

During our interactions with villagers across the country, we found four distinct types of MG-NREGS interactions with local, especially agricultural, labor markets and institutions (Table 3).

Type I – Insignificant: In Godda (Jharkhand), Koraput (Orissa) and Nalanda (Bihar) villages, the total volume of MG-NREGS work on offer was small compared to the demand and compared to the total size of the local labor market. Here, MG-NREGS had no perceptible impact on the working of the local labor markets, nor was the scheme able to animate the village community. A possible explanation for this could be the virtual non-existence of *Panchayati Raj* Institutions in the villages. In Jharkhand, for example, *Panchayat* elections had not been held since 1978 for various reasons. In 2010, *Panchayat* elections were held, but the government was yet to notify *Panchayati Raj* rules and devolve powers to elected representatives. In the absence of *Panchayati Raj* Institutions, private contractors and hastily formed beneficiary groups were put in charge of MG-NREGS implementation at the village level (Chakrabarty 2010).

Type II – Misfit: A booming local labor market, with work going aplenty at much higher than official minimum wages, made MG-NREGA a '*misfit*' and difficult to implement for lack of labor. In such cases, there was neither interest in the scheme's wage benefit nor in its non-wage benefit. We got a glimpse into this from our studies in Mudra, Kutch where people have hit jackpots by selling their land at very high prices and are now able to access limitless work opportunities at twice the MG-NREGA wage rate or more. Here there were no job seekers; yet the block and district administration was relentlessly pressuring *Panchayat* leaders to find people to implement the program. Somewhat similar was the situation in Uttarakhand and Himachal villages where prevailing agricultural wages were equal to or far above the minimum wages. As a result, there was general indifference towards the program and it required an unusually enthusiastic *Panchayat* leadership to goad people into taking on MG-NREGA works. Ahmed (2010) found the same situation in Navsari villages in Gujarat; where groundwater level was high and farmers could plant two crops, tempting able-bodied workers away from MG-NREGS by offering high wages.

Type III – Significant: This category represents instances where MG-NREGA presence is large enough to catalyze widespread interest in the community and also to significantly change the structure, conduct and performance of agricultural labor markets. We found this, to some extent, in Dholpur (Rajasthan) and to a much greater extent, in Palakkad (Kerala), Chitoor (Andhra Pradesh) and Jalna (Maharashtra) villages.

Type IV – Potentially Significant: This represents cases where MG-NREGS wages are significantly higher than local wages and the volume of potential MG-NREGS work is also significant and yet, MG-NREGS invokes a lukewarm response from the people owing to administrative bottlenecks or lack of awareness, or both. In Narmada (Gujarat), the prevailing local agricultural wages were roughly a third of the MG-NREGS wages on offer. The local Panchayat rallied to initiate MG-NREGS works in the village but was discouraged by a passive block administration. Further, there were long delays in the payment of MG-NREGS wages which prompted villagers to give up on MG-NREGS. Likewise, in the Mandla (Madhya Pradesh)

villages, people took to MG-NREGS work enthusiastically but were reported to have shifted back to lower-paying work since they depended heavily on weekly wage payments while MG-NREGS wage payment took as long as 6 months.

Table 3: Distinct types of MG-NREGS interactions with local labor markets

	Type I – Insignificant	Type II – Misfit	Type III – Significant	Type IV - Potentially Significant
Wage Rates	$W_{MG\text{-}NREGS} > W_{LOCAL}$	$W_{LOCAL} > W_{MG\text{-}NREGS}$	$W_{MG\text{-}NREGS} > W_{LOCAL}$	$W_{MG\text{-}NREGS} > W_{LOCAL}$
Opportunities	MG-NREGS work insignificant vis-à-vis local demand	Booming local labor market offering much greater opportunities	MG-NREGS significant vis-à-vis local demand	MG-NREGS potentially significant but poorly implemented
Impact	Impact of NREGS insignificant	Local labor market situation renders NREGS *misfit*	Impact of NREGS significant	Impact of NREGS insignificant
Examples	Godda (Jharkhand), Koraput (Orissa), Nalanda (Bihar)	Kutch (Gujarat), Uttarkashi (Uttarakhand), Kangra (Himachal Pradesh)	Dholpur (Rajasthan), Palakkad (Kerala), Chitoor (Andhra Pradesh)	Narmada (Gujarat), Mandla (Madhya Pradesh)

A group of villagers with whom Verma (2010) interacted in Rajsamand (Rajasthan) were unhappy about that fact that there were too few high quality assets being created under MG-NREGS. However, they reported that the biggest positive impact of MG-NREGS was that the market wage rates stabilized at much higher levels than before. Earlier, laborers were commonly hired at rates ranging between INR 30 and INR 60 per day; post-MG-NREGA implementation, the bargaining starts at INR 100 per day. MG-NREGA created a respectable wage floor for local labor markets.

Where local wage rates are higher than MG-NREGS, as in Kutch (Gujarat) and Uttarkashi (Uttarakhand), MG-NREGS managers were under pressure to raise the effective MG-NREGA wage rate by over-measuring the actual work done. In a field study of Rohtak villages in Haryana, Shah and Indu (2009) found this happening in large number of villages. Farm labor is scarce and expensive. At INR 200 per day, the standard farm wage rate is way above the MG-NREGA rate of INR 135 per day. In many villages like Bhataul, poor families with job cards did apply for work with the *Panchayat*. The *Panchayat* applied for and got works worth INR 112,000 sanctioned for canal cleaning. However, as the MG-NREGA wage rate was low, the *Panchayat* found it difficult to get labor and could spend only INR 25,000. This happened despite the fact that farmers were being paid to clean canals for taking water to their fields, something they would have done anyway. Now that MG-NREGA funds are allowed to be used on private land belonging to small farmers, the *Panchayat* Pradhan (leader) expected that demand for MG-NREGA work may increase. Shah and Indu (2009) found the same problem afflicting MG-NREGA work in Mahla village in Sangur District, Punjab. The Mahla *Panchayat* too got INR 112,000 MG-NREGA works sanctioned but was in a poor bargaining position *vis-à-vis* unwilling workers, so the money got spent, but only half of the planned work could be completed.

B. MG-NREGA influences on labor markets

Much as MG-NREGA is influenced by the prevailing labor markets, it also transforms labor markets in several ways via its implementation. The most obvious impact is the increase in the income of laborers and tightening of farm labor markets, which reduces distress labor and leads to a rise in wage rates. MG-NREGA work has been found to be particularly appealing for poor women. This is so because despite constitutional provisions of equal wages for men and women, open market wage rates are often higher for men. MG-NREGA, on the other hand, strictly implements the equal wages policy. This policy and the convenience of finding work close to home (as MG-NREGA promises) has had a significant additive impact on the labor force with several women entering the labor market for the first time.

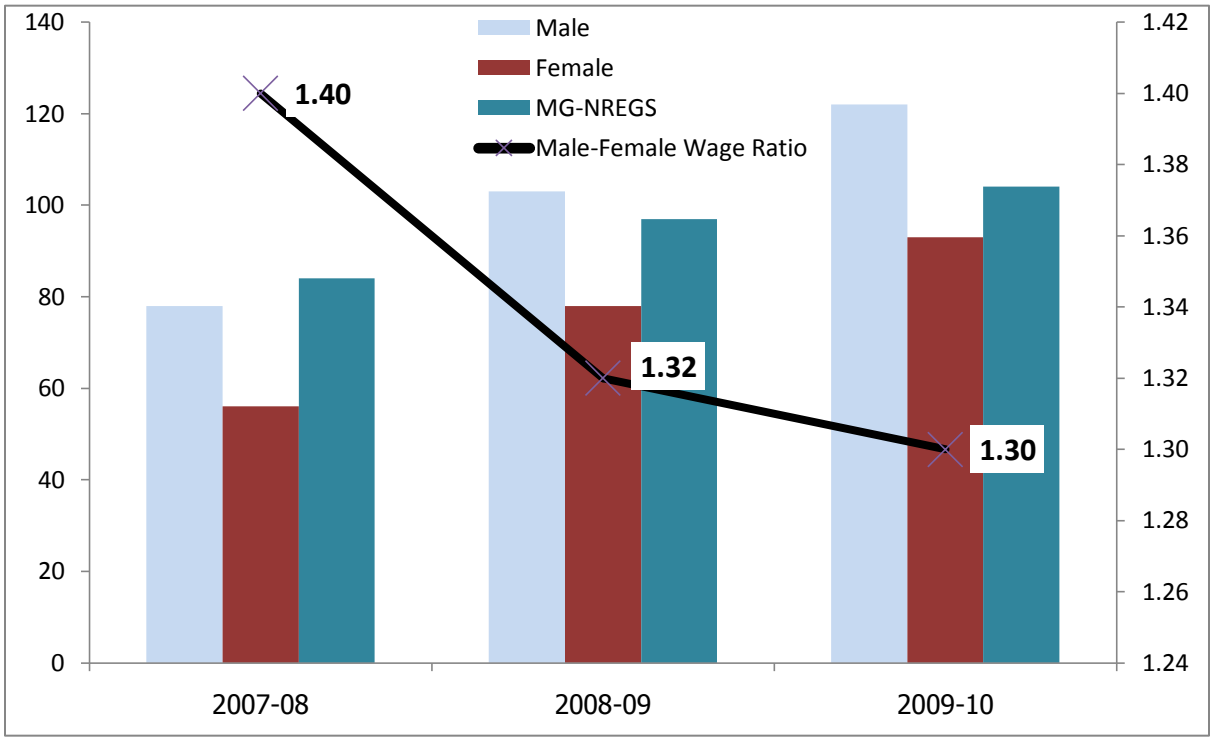


Figure 9: Male-Female Wage Ratio over the years
Source: Verma 2011a

In Palakkad (Kerala), the labor market got vertically segmented: women, old people and the infirm choosing MG-NREGA, but able-bodied men demanding higher wages in farm jobs (Shah *et al.* 2010). Likewise in Rajsamand and Dungarpur (Rajasthan) where migration to urban centers offers relatively higher incomes for men, much of the MG-NREGS workers were found to be women and older men who had discontinued migration. Women found MG-NREGS work attractive since it gave them extra cash they could spend on themselves and on household items. Previously, they had to wait for their men to return home during festivals (Verma, 2010). In our survey of 75 villages in 4 states, we found that the ratio of male-female wage rates, on an average, declined from 1.40 in 2007-08 to 1.30 in 2009-10 (Verma 2011a).

Farmers in locations that depend heavily on migrant workers complained about a reduction in the inflow of migrants and the demand for higher wages and better facilities by migrant workers. Shah and Indu (2010) found that in many villages of Punjab and Haryana, MG-NREGA is reducing the inflow of migrant labor, and even those workers who come often prefer to work on MG-NREGA works. However, our overall impression was that while MG-NREGA reduced distress migration to a large extent, opportunistic migration continued as before. MG-NREGS wages could not match up to the wages able-bodied men could earn by migrating to urban centers where the wages are much higher.

5. Drivers of MUS Success in MG-NREGS

We find that the implementation of MUS through MG-NREGS has produced variable results in different parts of the country. In fact, MG-NREGS performance has been found to be different from village to village. Wherever village communities have taken enthusiastically to the idea of MG-NREGS and where their enthusiasm has been supported by an able, well-staffed administration and capable local governance institutions and leadership, the results have been exemplary. In certain cases, we find that incentives have been used effectively to animate local MG-NREGS functionaries whose role can be critical in ensuring high quality implementation. On the other hand, where either of these factors is found to be missing, the implementation of the scheme, the quality of rural water assets created, and therefore the benefits to village communities have diminished. In this section, we discuss four broad drivers that together facilitate successful MG-NREGS implementation.

Contextual Fit: MG-NREGS is essentially a demand-driven program and has the greatest potential to make an impact where it is most needed. In terms of water supply enhancing assets, we found that water scarcity was the major driver of success. Likewise, as discussed in **Table** 3, the prevailing labor markets would, to a large extent, determine the demand for, and therefore the success of MG-NREGS. In locations like Mundra (Kutch), MG-NREGS is a misfit and is unlikely to excite village communities. In general, therefore, MG-NREGS is most likely to be suitable for villages where rainfed cropping dominates, leading to forced migration in search of work post-monsoon. Much of India's tribal areas represent such dryland ecologies. MG-NREGS is also likely to attract greater enthusiasm where water scarcity is driving down cropping intensity and shrinking agricultural labor markets. Pockets of such desperation can be found all over western and peninsular India. Finally, MG-NREGS has great potential where population density, lack of agricultural dynamism and poor access to markets and economic (as opposed to physical) water scarcity[5] are forcing migration such as in North Bihar and eastern Uttar Pradesh.

Village Preparedness and Attitude towards MG-NREGS: A key to the success of MG-NREGS is how the local village leaderships view this program. Where the program is seen purely as an employment guarantee *project*, lasting benefits are unlikely to accrue. Where enlightened and ambitious *Panchayat* leaders have viewed MG-NREGS as an opportunity to demonstrate their technical and managerial skills by facilitating the creation of beneficial assets, the program is likely to have a significant and positive impact on local water security (Shah *et al.* 2010). . MG-NREGS water assets are most likely to exploit multiple sources and serve multiple uses where the participatory processes envisaged in MG-NREGS are adhered to, in letter and in spirit. Where MG-NREGS works are selected, prioritized and implemented top-down by the block and district administration, there is a greater probability that the implementation would suffer from single-use mindset and other traditional biases. This sentiment is also echoed by Mukherjee

[5] Economic water scarcity, as opposed to physical water scarcity, relates to the lack of access to water (in this case, irrigation). North Bihar, eastern Uttar Pradesh (and much of Eastern India) does not face physical water scarcity. In fact, water is available aplenty in the form of shallow groundwater. However, poor electricity infrastructure means that farmers have to use expensive diesel to run their irrigation pumps and this forces them to economize on irrigation leading to low agricultural productivity and intensity (Verma *et al.* 2009; Verma 2010b).

and Ghosh (2009) who concluded that, "*Effective functioning of PRIs is the most important element for the successful execution of NREGA. The findings from primary and secondary data reveal that capacity building - both physical capacity in terms of human and technical resources and capacity in conceptualization, planning, execution and monitoring of projects among PRI functionaries are of absolute necessity in overcoming the shortfall and in achieving the desired goal of NREGA.*"

Proactive and well-equipped MG-NREGS Administration: The MG-NREGS administration can make or break the program at all levels. At the highest level, the administration must ensure timely funds, staffing and capacity for sufficient technical supervision and the scope and flexibility for innovative links at the village level. Our field study in Bihar found much of these present in the Harnaut block of Nalanda District – which happens to be the Chief Minister's constituency. Likewise, in Vaishali District, much of the best works were initiated when a local leader was the Minister for Rural Development. In Rajasthan, Singh and Modi (2010) attributed the visibly better implementation of MG-NREGS in Dungarpur to a keen district administration and a higher density of Junior Technical Assistants (JTAs). While JTAs in Tonk was assigned 10-12 *Gram Panchayats*, JTAs in Dungarpur supervised only 3-4 *Gram Panchayats* each. This ensured greater and better quality supervision. Finally, some of the best performing assets were those where water impounding structures (check dams, anicuts, pynes[6], ponds) were linked to perennial water sources. While they may not be present everywhere, identifying such opportunities and maximizing their benefits is often the handiwork of an involved local administration and a proactive village leadership.

Getting the Incentives Right: The maintenance and upkeep of public assets created under MG-NREGS is challenging due to the conflict between equitable distribution of benefits and incentive concentration. There is also the question of engaging better-off farmers in MG-NREGS by enhancing their stake. The MG-NREGS administration in Sabarkantha district of Gujarat seems to be doing something different and effective. Gaur and Chandel (2010) note that *Village Mates* in Sabarkantha are extremely proactive and competitive amongst themselves in the creation of well-performing assets. They attribute this to the linking of their remuneration to continuous MG-NREGS work flow. However, in several other places, we found beneficiaries indifferent, almost passive recipients of the benefits of MG-NREGS. Private assets were routinely maintained and cared for by the owners while public assets were ignored.

[6] Articifial channels constructed to use river water in agricultural fields.

6. BARRIERS TO MUS SCALING VIA MG-NREGS

Given the nation-wide scope, dominance of water and water-related works, and focus on participatory decision making and planning at the village level, MG-NREGS is the largest instance of community-based MUS implementation in the world. While not all MG-NREGS works would be multiple use, our overarching hypothesis is that: if the participatory decision making processes envisaged in MG-NREGS are followed, village communities will identify, prioritize and execute works taking multiple sources and multiple uses into consideration.

In this section, we discuss barriers to successful and broad-based adoption of the MUS approach through MG-NREGS works.

Ambasta *et al.* (2008) concluded that the massive potential of MG-NREGS was not being realized owing to staff shortage; delays in payment of wages; lack of proper planning and participation; and a mockery of Social Audits, among other factors. This conclusion incorporated insights from a 2007 audit report by the Comptroller and Auditor General of India on NREGA (CAG 2007) and field inputs from the National Consortium of Civil Society Organizations[7] (SPS 2008). A study by Samarthan (2008) posited that lack of preparedness, top-down implementation drive, inadequate flexibility, and insufficient technical capabilities of MG-NREGS administration were responsible for preventing MG-NREGA from achieving its objectives. Inferences from our field studies tend to echo the conclusions of both these studies.

We discuss below the major bottlenecks to effectiveness and barriers to adoption and scaling up MUS modalities via MG-NREGS.

Legal right vs. Relief work: While MG-NREGS is now being implemented in over 600 districts across the country, awareness of the Act and the provisions of the Scheme is highly variable. In several places, surveys have found that people lack clear understanding about their rights and about the processes to be followed. In several villages, people view MG-NREGS as another benevolent *relief* scheme that the government machinery is implementing, unaware of the legal entitlement enshrined in the Act. Even when village communities are aware of the basic legal provisions, there seemed to be doubts about the exact provisions of MG-NREGA. For instance, Pankaj (2008) found a high level of awareness about the provision for 100 days of guaranteed wage employment in Bihar (94.49% respondents) and Jharkhand (96.20%). However, the author notes that the quality of awareness was poor in both states and few respondents knew about the prescribed minimum wages (22.89%), promised work conditions (10.72%), works planning process (2.47%), of the role of the *Gram Panchayat* (27.42%). Such a situation encourages a top-down approach to works planning, prioritization and implementation.

[7] The consortium is an informal collective of civil society organizations working closely with PRIs in 45 districts of ten states to help them plan, implement and social audit NREGA works.

Capacity of MG-NREGS Administration: Ambasta *et al.* (2008) identified under-staffing and lack of capacity building as the main roadblocks to effective MG-NREGS implementation. The authors note that nearly 600,000 Employment Guarantee Assistants and more than 50,000 each of Assistant Program Officers and Technical Assistants are required to effectively implement MG-NREGS, and that "*this order of magnitude of trained people is just not available in rural India*". In our field studies too, we found that the work burden on technical staff was critical to the overall quality of assets created under MG-NREGS (Singh and Modi 2010). Nearly every other study and report on MG-NREGS has identified staffing and capacity gaps in MG-NREGS administration. This issue came up prominently in our discussions with Mr. D.K. Jain (Joint Secretary, MG-NREGA, Ministry of Rural Development, Government of India). This is not so surprising considering the challenges imposed by the scale of implementation. Several states have not been able to fill a large number of fresh vacancies created under MG-NREGS.

Capacity of PRIs: MG-NREGS implementation design imposes stringent demands on the ability and responsiveness of local self-governance institutions and village leaders. Synchronizing work-demand with work-identification, approval and implementation is critical to effective asset creation. In places where PRIs are absent, weak, corrupt or unresponsive, MG-NREGS is, at best, ineffective and at worst, it becomes a victim of local politics, systemic corruption and other malpractices. In the course of our field studies, we found some instances of enlightened and ambitious *Panchayat* leaders using MG-NREGS as an opportunity to demonstrate their technical and managerial qualities (Shah and Indu 2009; Shah *et al.* 2010). However, we also found that in several cases, the *Panchayat* leadership played "*a totally passive or dysfunctional role, sometimes marginalizing the Gram Sabha, and at others, indulging in favoritism and political one-upmanship*".

Rigid Protocol vs. Inventive Flexibility: Depending on how capable, inventive and flexible PRI and MG-NREGS administrators are, its guidelines can as crippling as they are facilitating. As several studies have noted, MG-NREGS is, at present, not entirely demand-driven. Its implementation is often dependent on strict adherence to protocol which almost discourages flexibility and inventiveness. For instance, we found several village leaders and administrators unwilling to even consider certain types of works because they thought these works would be difficult to implement under the 60:40 labor-material ratio guideline. Since adherence to this ratio is required by the guidelines, protocol seems to suggest that the material component should not exceed 40% of the total cost.

However, we also found instances where the MG-NREGS administration was willing to be flexible about this to incorporate the demands of the community. In such cases, the administrators argued that even when the 60:40 ratio was breached in some works, they were able to manage the ratio within permissible limits at the block/district level by also undertaking other works where material costs were negligible. Likewise, we found that proactive leaders and administrators were able to come up with inventive ideas to undertake works demanded by the community which would not have been possible solely under MG-NREGS. Doing so upheld the *spirit* of the guidelines while allowing inventive deviations from the *letter* of the protocol. Sadly, such instances were few and far between (See Box 3).

Box 3: Limited focus on drinking water and sanitation works

One of the things that surprised us was the paucity of drinking water and sanitation works being undertaken under MG-NREGS. If communities are setting priorities for works to be undertaken in the village, we expected drinking water and sanitation to figure more prominently. Various reasons can be listed why this might be so.

1. MG-NREGA guidelines stipulate certain categories of works that may be undertaken as part of the scheme. These include: 1) Water conservation and harvesting; 2) drought proofing and afforestation; 3) irrigation facilities; 4) renovation of traditional water bodies; 5) land development; 6) flood control; 7) rural connectivity; and 8) any other work notified by the central government in consultation with the state government. Some of us argued that since there is no explicit drinking water and sanitation category defined under the MG-NREGS guidelines, communities as well as the administration might not be aware that such works can be undertaken.
2. MG-NREGA guidelines stipulate a 60:40 labor-material ratio and drinking water and sanitation works are likely to be more capital intensive.
3. Some of us felt that since the government claims high coverage under drinking water supply schemes and is running parallel programs dedicated to providing protected water supply (such as the Rajiv Gandhi National Drinking Water Mission), perhaps drinking water and sanitation works are being discouraged under MG-NREGS.
4. Further, some of us argued that while the Ministry of Water Resources is widely recognized as a key partner for convergence under MG-NREGS; its mandate is largely focused on productive uses of water.
5. There might be selection biases in favor of productive assets and against reproductive assets among the community itself. In other words, the priorities and concerns of women might not be getting adequately represented and addressed in ***Gram Sabhas*** (which are, traditionally, male-dominated).
6. There might be selection biases among the NREGS administration, presumably dominated by male engineers and biased towards productive assets.
7. Another reason could be that while drinking water and sanitation provision technologies are (wrongly) considered to require high engineering skills, labor available under MG-NREGS is unskilled.
8. Lastly, some domestic water technologies and most sanitation technologies are household-owned, while MG-NREGS favors communal systems. This is being discussed. For example, a proposal to allow five working days for home pit latrine digging is now being considered (Bhaskar Vijai, Director Drinking Water Government of India).

While these are no more than hypotheses at the moment, our field experience suggests that a combination of several of these factors might be in play. In theory, MG-NREGA guidelines do provide for overcoming most, if not all, these hindrances. For instance, the government actively promotes convergence between MG-NREGS and other on-going development programs and schemes to overcome the limitations caused by the 60:40 material-labor ratio rule. Thus, if a desirable work is capital intensive, MG-NREGS funds can be used to contribute the labor component while other schemes and programs can contribute capital. Ahmed (2010) reports on one such successful and acclaimed initiative from Pipalva village in Junagadh District of Gujarat where MG-NREGS converged with the Total Sanitation Campaign[8]. Likewise, in Warangal District of Andhra Pradesh, MG-NREGS convergence was achieved with a local drinking water supply scheme for desilting of the *Kothamatu cheruvu* tank bed leading to an improved discharge for the scheme (MDWS 2007).

[8] Pipalva village received presidential honor and was voted for the '*nirmal gram*' award as a result of this effort. A "*Nirmal Gram*" is an Open Defecation Free (ODF) village where the awareness of the community regarding the importance of maintaining personal and community hygiene is recognized.

Incentive Deficit: MG-NREGA applies to every person living in rural India and anyone willing to work at government-determined wages for manual, unskilled labor can participate and benefit from the scheme. Unless marred by large-scale and systemic corruption, this design means that the wage benefits of the scheme are self-targeting. Better-off people are unlikely to be willing to work for minimum wages and those who really need the wages are the most likely to get excited by the scheme. However, the non-wage benefits of MG-NREGS, in the form of rural assets, are for the entire village and, in theory, prone to elite capture. This is so because the scheme leans heavily on PRIs and the village elite tend to enjoy strong representation in or have political influence on the *Panchayat*.

On the one hand, this design creates some stake for the rural non-poor in the success of the program at the village level. On the other hand, large-scale capture of non-wage benefits might exaggerate inequity and breed cynicism. At the grassroots, therefore, the program is always trying to balance this difficult trade-off. Where PRIs are dormant, the program is run mostly as benevolent relief-works with the sole objective of providing some employment to the rural poor, almost at the mercy of the elite leaders. The non-wage benefits in such cases are only incidental and often negligible. In other places, where proactive local leaders recognize the greater potential of MG-NREGS, they are likely to use it to enhance their social and political capital while cornering a lion's share of the non-wage benefits. Other than this, there seem little or no incentives for the village elites to animate them to make the scheme a success. In fact, the rise in farm and non-farm wages resulting from MG-NREGS has led to a negative outlook towards MG-NREGS among the labor employers (see Shah *et al.* 2010).

Contextual Fit and Misguided Targets: While MG-NREGS is meant to be a demand-driven program, in several places it is being implemented by an administration running after supply-side targets. On the one hand, village communities are not always fully capable and prepared to take on decentralized water resource governance and planning of the kind envisaged in MG-NREGS. On the other hand, and possibly as a result of the former and a perverse pressure to achieve misguided targets, MG-NREGS administration is driving the implementation top-down, quite contrary to the core of the program design. In a bid to show superior MG-NREGS performance, administrators tend to go *easy* on several of the program's key provisions. In Punjab, Shah and Indu (2009) found that villagers were lukewarm to the idea of working in MG-NREGS and the administration allowed migrant workers from Bihar and Uttar Pradesh to work. When even their response was not forthcoming, they relaxed the work-wage norms to encourage greater participation. The result was that a lot of money got spent in the name of wage-employment but little work actually got done in terms of useful rural asset creation.

7. PROPOSED RF INVESTMENT: MUS-NREGA NETWORK

MG-NREGS is a path-breaking program and that its true potential goes far beyond its primary objective of guaranteeing unskilled wage employment. If implemented well, it can enhance local water security and empower village communities to plan and manage their shared resources. While implementation is still in the formative stages, it already offers numerous lessons for decentralized planning and implementation. We have also seen how, when the enabling conditions are met, the benefits of MG-NREGS assets are being maximized by village communities. We also discussed that if people in communities are involved in choosing the works to be undertaken, why aren't more systems coming up that are explicitly designed for multiple uses? Our experience so far suggests that the program is not always implemented the way it was original envisaged and that when the program is a misfit or when PRIs are weak in demanding and planning the works, the MG-NREGS administration attempts to deliver a top-down program misguided by supply-side spending targets.

In the long run, the success of MG-NREGA may be measurable in terms of its diminishing demand. Regions and people that require MG-NREGS work today should be able to improve their economic condition and reduce their need for unskilled wage labor over the years. This will happen if the assets created under MG-NREGS are truly demand-driven and designed in accordance with village priorities. Only then will they be able to effectively maximize their productivity and provide enhanced water security to lift people and places out of poverty.

These problems are compounded by instances of corruption, political gamesmanship, sectoral approaches to planning, disciplinary baggage and conventional single-use mindsets. At the operational level, a key unresolved challenge is the durability and sustainability of MG-NREGS public assets. Public assets, especially those that benefit a large number of users, produce greater returns on investment but tend to diffuse these benefits over a large user group. This makes their maintenance and upkeep difficult and their sustainability a challenge. At present, there seems little by way of institutional arrangements for maintenance and upkeep of common assets built under MG-NREGA. Then there is also the issue of incentive deficit where the program has to be careful to manage the trade-offs between equity, participation and effectiveness.

In this section, we propose the creation of a MUS-NREGA Network. To begin, we propose a two-district pilot project which will, through an action-research and capacity building experience-sharing protocol, aim to overcome the barriers discussed above and maximize the net positive outcomes from MG-NREGS. The Network will target three primary outputs: a) science-based knowledge products (research papers and policy briefs) aimed at making practical policy recommendations; b) Improved capacities of PRIs and MG-NREGS administration; and c) wider dissemination and interaction to promote cross-learning, including African partners.

Concept

At present, there is little role envisaged for NGOs in the implementation of MG-NREGS except in cases where NGOs are involved in conducting social audits or in the sporadic cases where NGOs are the implementing agencies for MG-NREGS works. Likewise, knowledge institutions have been working mostly on their own to highlight design and implementation issues in MG-NREGS except when the Ministry of Rural Development interacts with them through the Professional Institutional Network (PIN[9]). Implicitly, the program puts a lot of faith in the strength, willingness, fairness and techno-managerial capabilities of local self-governance institutions and PRIs. The program encourages MG-NREGS convergence with other, existing government schemes and programs. However, there is also tremendous potential for converging donor-supported programs that are being implemented by grassroots NGOs and other CSOs.

The implicit partner in scaling pathways for community-based MUS is the community (IWMI 2011). We propose a tripartite partnership of knowledge organizations, government organizations and civil society organizations with the community in this network (Figure 10). We propose to pilot this network in two high-potential district in Gujarat (Dahod District) and Kerala (Palakkad District) for the first year. Besides the high impact potential in the two districts, both districts offer experienced and accomplished field partners and an eager and responsive MG-NREGS administration. A brief note on the proposed partners is appended as Annex 2.

The NM Sadguru Water and Development Foundation based in Dahod, Gujarat has been working with the local tribal population for well over three decades. They have years of experience in implementing watershed activities and specialize in decentralized water harvesting and irrigation infrastructure. By virtue of their enormous experience and goodwill, NM Sadguru regularly conducts training programs for other NGOs and for government officials not only from Gujarat but also from several other states across the country. During the preparation of this country study, our team also interacted with Dahod District Administration and we met the District Development Officer, Mr. Vikrant Pandey who showed keen interest in this initiative and has promised full cooperation and support.

In Kerala, MG-NREGS implementation is being undertaken by the Kudumbashree Mission. Kudumbashree is the women oriented, community-based poverty eradication mission of the Government of Kerala. The mission aims to empower women through the creation of self-help groups and a wide range of other activities (see Annex 1). Our team interacted with Kudumbashree officials during our field study in Kerala and then again during the preparation of this note. As in the case of Gujarat, Kudumbashree and the Palakkad and Thrissur District administrations have shown keen interest in participation in this initiative.

[9] PIN is a network of knowledge institutions, think tanks, CSOs, and other professional institutes created by the Ministry of Rural Development, Government of India for concurrent monitoring, appraisal, diagnosis of implementation constraints, recommendations on remedial action and sustainable interventions, to enhance the quality of MG-NREGS implementation.

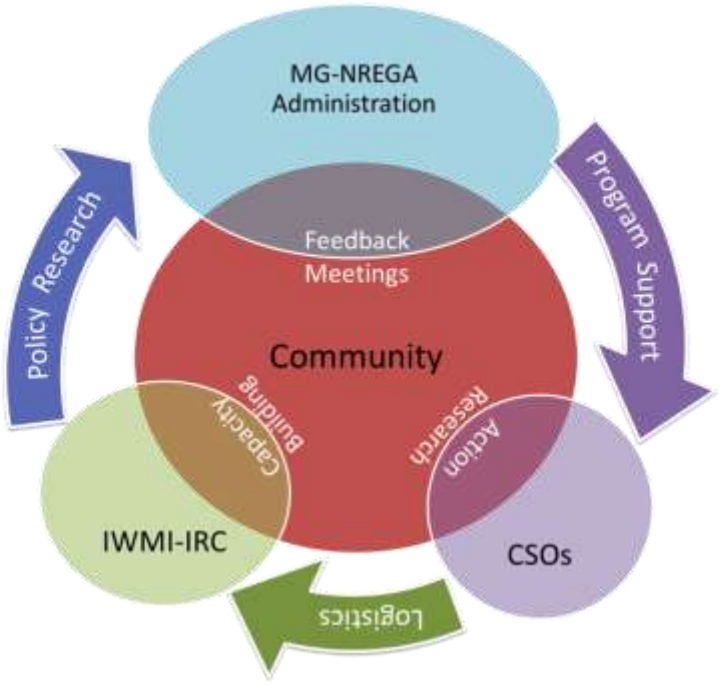


Figure 10: Proposed tripartite partnership with community under the MUS-NREGA Network

Community: Community is at the center of the Network and the network will interact closely with community members via field research, action research, training programs and feedback meetings.

Government Organizations: A key stakeholder in the Network would be the MG-NREGA administration at the national, state as well as district level. At the national level, the Ministry of Rural Development will provide programmatic support and feedback to the activities of the network. In addition, Network members will also collaborate with the MoRD-supported PIN Network to incorporate learning from studies carried out by PIN partners and vice versa. The state MG-NREGS administrations (in Gujarat and Kerala) will act as the nodal agencies in their respective states. In each of the two pilot districts (Dahod and Palakkad), the local district administration will: a) Implement MG-NREGS with support from the Network; b) Participate in capacity building and exchange programs; and c) Provide regular inputs and feedback to the Network.

Knowledge Organizations: IWMI and IRC will provide intellectual leadership to the initiative and, at the pilot stage, will incubate the Network by hosting a small secretariat in IWMI-India. IWMI-India is legally eligible for funding by international organizations. More specifically, IWMI/IRC will focus on: a) carrying out pan-India policy research; b) developing capacity building modules and conducting training workshops for state and national level MG-NREGS

administration; c) providing intellectual guidance and scientific inputs to action research; (d) dissemination; and (e) facilitating south-south exchange.

Civil Society Organizations: The Network will closely interact with civil society organizations at the national as well as the district level. At the national level, the Network will forge a partnership with the National Consortium of CSOs for NREGA for intellectual inputs and experience sharing. At the district level, NM Sadguru will provide field support in Dahod (Gujarat) (see Annex 2) while Kudumbashree will do the same in Palakkad and Thrissur (Kerala). Specifically, CSOs in each of the pilot districts will take responsibility for: a) implementing action research; b) conducting training programs for PRIs, district and block administration; and c) providing logistics and field support for MUS-NREGA Network activities.

Proposed Pilot: Activities and Outputs

For the initial 12-month pilot project, we envisage five overlapping, non-exclusive activities that the Network will undertake at the pilot stage. These are explained below and summarized in Table 4.

A. Knowledge Center for Policy Research

We have identified several issues which require a more in-depth scientific investigation to come up with practical policy recommendations and capacity building. Key among these are: a) interactions between labor markets and MG-NREGS; b) potentials to reconcile supply-driven high coverage targets and demand-driven participatory local planning for multiple uses from multiple sources; c) performance assessment of water works for multiple uses and multiple sources (cost-benefit, technical, institutional sustainability and incentive deficit and trade-offs between equity and effectiveness for rehabilitation of existing public works and new works); d) greater positive involvement of rural non-poor in MG-NREGS; e) involvement of female and male MG-NREGS wage-workers in work and site selection and prioritization of communal and individual works; f) reviewing the potential and challenges of adopting a river basin-watershed approach to MG-NREGS implementation (as is being suggested in Thrissur Kerala; see Box 4); and g) lessons from innovative GO-GO and GO-NGO convergence mechanisms

The MUS-NREGA Network will take a lead in carrying out policy-centric practical research on these issues and in disseminating the results with MG-NREGS policy makers at different levels.

B. Action Research and Idea Incubation

In close collaboration with the MG-NREGS administration and CSO partners, the MUS NREGS Network will carry out concurrent monitoring and evaluation of MG-NREGS works implementation, field test innovative ideas and replicate best practices from studies across the country in the selected pilot districts.

Box 4 Watershed Approach in Kerala

In Kerala, the Local Self Government Department has issued detailed guidelines to the PRIs to follow watershed-based planning and budgeting. To support the process, Kerala State Land Use Board (KSLUB http://kslub.kerala.gov.in/) and independent agencies like the Integrated Rural Technology Centre (IRTC http://www.keralaresourcemaps.in/) are supporting the process of preparing GIS open source software-based watershed resource maps as decision support tools.

The watershed may be of any size, but for good planning and implementation in two to three years, the size of the watershed is made viable (about 1000-5000 ha) and plans are prepared on an integrated basis for all the *Gram Panchayats* in the watershed. Attempts are also made to integrate the *Panchayath* resource maps and the watershed-based development master plan for convergence. The accredited technical support agencies enlisted under NREGA for each district in the state are also facilitating the process of developing watershed-based work plan and labour budgets for each *Panchayath*. Essentially the process envisages a detailed resource map for every *Gram Panchayat* integrated and dovetailed into a watershed master plan which is broken down into viable units and on the basis of the identified interventions, a detailed work plan and labour budget prepared. Action research will focus on how to harmonize hydrological watershed boundaries with administrative PRI boundaries.

The process of integration and harmonization and reconciliation of activities of PRIs, falling within the watershed is weak, which offers great opportunity for strengthening through action research.

Thrissur is proposed as the district to pilot-test convergence with watershed planning. Although a late beginner under MGNREGA, the district has done made achievements under the programme and was nominated for a national award. In terms of watershed-based planning and MUS, the district has an excellent track record in*: Gram Panchayat* level resource mapping; GIS watershed master plans; a unique convergence programme (Kodakara Block experiment); the Mazhaploima well recharge programme; Jalasurakha integrated watershed-based water security initiative; and the district won the President of India Bhujal Samwardhan Award 2010 for ground water augmentation for Adata *Gram Panchayath*.

C. Capacity Building for PRIs and Village Communities

One of the critical factors in the success of MG-NREGS at the village level is the preparedness of village communities and local self-governance institutions. The MUS NREGS Network will conduct techno-managerial as well as socio-technical training events with the objective of better demand generation from the village communities, improved works planning and prioritization, and developing institutional mechanisms for the sustainability of MG-NREGS water assets.

D. Capacity Building for MG-NREGS Administration

The training activities for MG-NREGS administration will have different objectives at different levels of governance. At the district and sub-district level, the MUS NREGS Network will provide technical support for improved planning and quality of works implementation. At the state level, the training will expose MG-NREGS administrators to the MUS approach of planning water assets; improved budgeting and priority setting processes in participatory planning; information and monitoring systems. At the national level, the capacity building activities will focus on encouraging and mainstreaming inventive flexibility and on better understanding of the importance of contextual fit of MG-NREGS under different socio-economic conditions.

E. Dissemination and Exchange

Inspired by the initiative of the Government of India, the Government of South Africa has initiated a public works program along on the lines of MG-NREGS. In fact, all over Sub-Saharan Africa, NREGA-inspired initiatives implemented by governments and NGOs can play a critical role in scaling up MUS and in improving local water security. We believe both MG-NREGA and similar community-based MUS initiatives elsewhere can learn a lot from each other. The MUS NREGS Network will support and encourage south-south exchange initiatives for senior administrators and policy makers as well as students, young scientists, media fellows, and fellows for study-tours and internships. Exchange will further be facilitated through the global MUS Group (www.musgroup.net)

Scaling up and scaling out

The 12-month pilot program suggested above would provide a foundation for a larger, country-wide initiative in the future. During the 12-month period, the MUS NREGS Network will:

1. Conduct research studies to identify high-impact, high-potential areas by carefully studying MG-NREGS interactions with labor markets and other variables such as agricultural productivity, irrigation intensity, etc.
2. Pilot a model interaction with the village communities including a training and capacity building program for PRIs;
3. Develop training material for MG-NREGS administration at the block and district level;
4. Initiate south-south exchange fellowships to support cross learning; and
5. Establish contacts and credibility with key stakeholders in the government and among CSOs.

This 12-month pilot will be hosted and incubated within IWMI-India. At the end of the pilot, we expect that the initiative will spin-off into an independent entity for expanding its work and activities to other parts of the country in partnership with IWMI and IRC.

Table 4: Proposed activities, objectives and outputs for the MUS-NREGA Network

	Activity	Objective	Outputs	Leadership
A. MUS-NREGA Knowledge Center				
	Policy research	Improved policies and guidelines to incorporate MUS approach	Research reports, Working papers, Policy Briefs	IWMI/IRC
	Case studies	Document best practices and facilitate cross-learning	Case studies of best practices and MUS-NREGA bright spots	IWMI/IRC
	Policy roundtables	Disseminate research findings among key policy makers	Workshop reports	IWMI/IRC
B. Action Research and Idea Incubation				
	Monitoring and evaluation	Concurrent feedback on implementation of NREGS in pilot districts	M&E Reports	NM Sadguru (Gujarat) / Kudumbashree (Kerala)
	Pilot testing	Field testing ideas and innovations in Mg-NREGS	Field reports	NM Sadguru (Gujarat) / Kudumbashree (Kerala)
C. Capacity Building of PRIs and Village Communities				
	Techno-managerial skills training	Preparation of development plans; synchronization of work-demand and work-schedule	Improved demand generation	NM Sadguru (Gujarat) / Kudumbashree (Kerala)
	Socio-technical training	Participatory planning process; Setting work priorities	Improved participation in decision-making	NM Sadguru (Gujarat) / Kudumbashree (Kerala)
D. Capacity Building of MG-NREGS Administration				
	National-level training	Scaling-up and Encouraging Inventive Flexibility; Contextual Fit of MG-NREGS	Demand-driven planning	IWMI/IRC
	State-level training	MUS Approach; Budgeting and Priority setting processes in Participatory Planning; MIS and M&E	Demand-driven planning	IWMI/IRC
	District-level training	Technical support for water-asset planning and quality control	Improved quality of MG-NREGS assets	NM Sadguru (Gujarat) / Kudumbashree (Kerala)
E. Dissemination and exchange				
	Network website	Wider dissemination of *MUS NREGS NETWORK* work and results, also through MUS Group	Greater adoption; Demand for scaling up *MUS NREGS NETWORK*	IWMI/IRC
	South-south exchange	Sharing lessons with other community-based MUS initiatives, also through MUS Group	Improved implementation	IWMI/IRC

8. Key Contacts and Stakeholders

Organization Type	Organization / Department	Contact Persons
Government of India	Ministry of Rural Development (MoRD)	Mr. D.K. Jain, IAS Joint Secretary, MG-NREGA Krishi Bhavan, Dr. Rajendra Prasad Road, New Delhi - 110001 Ph: 91-11-23385027, 91-11-23384703 E: dkjain@nic.in
Government of Gujarat	Commissionerate of Rural Development	Ms. Rita Teoatia, IAS Commissioner of Rural Development and Principal Secretary (Rural Development) Block No. 16, 3rd Floor, Dr. Jivraj Mehta Bhavan, Old Sachivalaya, Gandhinagar Ph: 91-79-23253462
		Mr. Pankaj Kamliya State Program Officer, MG-NREGA Block No. 16, 3rd Floor, Dr. Jivraj Mehta Bhavan, Old Sachivalaya, Gandhinagar Ph: 91-79-23253468; M: 91-9427489662 E: pankajkamliya@gmail.com
	Dahod District Administration	Mr. Vikrant Pandey, IAS District Development Officer District Panchayat, Dahod Ph: 91-2673-239066
Government of Kerala	Water Resources Department	Mr. V. Kurian Principal Secretary, Water Resources, Government Secretariat, Kerala
	Rural Development Department	Mr. Shajahan, IAS Director, MG-NREGA and Commissioner, Rural Development Government of Kerala
	Local Self Government Department	Mr. James Varghese, IAS Principal Secretary, Local Self Government Department, Government Secretariat, Trivandrum. Ph: 91-471-2517216; M: 91-9447156204
	Kudumbasree Mission	Ms. Sarada Muraleedharan, IAS Director, Kudumbasree Mission, TRIDA Building, Medical College PO, Trivandrum -695 011 Ph: 91-471-2554715; M: 91-9446566440

Organization Type	Organization / Department	Contact Persons
	Palakkad District Administration	Mr. K.V. Mohan Kumar, IAS District Collector, Palakkad
		Mr. George Project Director, NREGA, Palakkad District. M: 91-9447575912
Civil Society Organizations	NM Sadguru Water and Development Foundation	Mr. Harnath Jagawat, Director, NM Sadguru Foundation Post Box 71, Dahod - 389151, Gujarat Ph: 91-2673-238601; M: 91-9825047367 E: nmsadguru@yahoo.com
	National Consortium on NREGA	c/o Samaj Pragati Sahayog Village Jatashankar, Tehsil Bagli, District Dewas Madhya Pradesh - 455227 Ph: 91-7271-275757; 91-7271-275550

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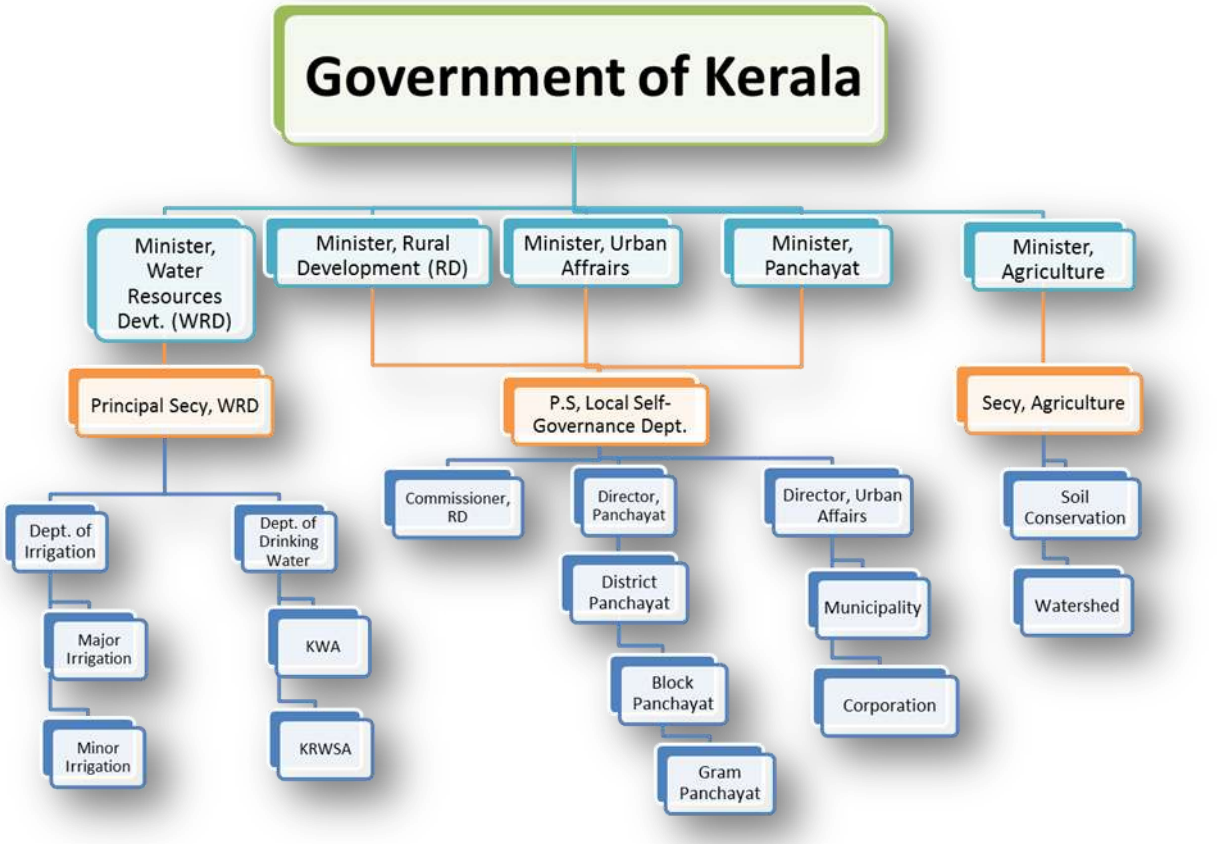
ANNEX 1: ORGANOGRAM OF MINISTRIES RELEVANT FOR MG-NREGS IN KERALA



ANNEX 2: BRIEF NOTES ON PROPOSED PARTNERS

1. Sadguru Foundation, Dahod

Established in 1974, Navinchandra Mafatlal Sadguru Water and Development Foundation is a non-governmental organization which is non-political, non-profit making, secular organization registered under the Public Charitable Trust Act, the Societies Registration Act (1860) and the Foreign Contribution (Regulation) Act. It is recognized by the Department of Rural Development of the government of 3 states (Rajasthan, Gujarat and Madhya Pradesh). The organization receives funding from state and central government, national and international donor agencies for its programs. Sadguru has an active presence in the tribal areas of Dahod, Panchmahals, Banswara, Jhalawar and Jhabua districts.

Mission: Sadguru endeavors to develop and expand environmentally, technically and socially sound natural resource interventions leading to poverty alleviation, through community participation and empowering women and other disadvantaged groups, to ensure equitable and suitable development.

Vision: Elimination of acute poverty among tribal and rural communities with natural resources restored, developed and expanded

Approach: Sadguru implements demand driven, community centric programs pertaining to the development of water resources, micro-watershed treatment, agro and social forestry, horticulture, floriculture, dairy development, and the promotion of community institutions such as women's self help groups, village watershed committees etc.

Experience with MG-NREGS: Sadguru has been working with the local MG-NREGS administration since 2008 on convergence in implementing watershed interventions.

N.M. Sadguru Water and Development Foundation

Better known as: Sadguru Foundation
Contact Person: Mr. H. Jagawat, Director

Address: Post Box 71, Dahod 389151, Gujarat, INDIA
Phone: +91-2673-238601, 602, 603, 604
Email: ***nmsadguru@yahoo.com***
Web: **http://www.nmsadguru.org/**

Organization Type: Non-political, Not-for-profit, charitable trust

Registered under FCRA – Foreign Contribution Registration (Regulation) Act, 1976
(Number: 042070038)

Registered under Section 12 (A)(a) of the Income Tax Act, 1961
(Number: BRD/SIB/110-9-S/86-87)
PAN: AAATN1976A

Reach: 1200 villages, more than 260,000 households, more than 1.5 million people

2. Kudumbashree, Kerala

Kudumbashree, which means *prosperity of the family*, is the name of the women oriented, community based empowerment program of the State Poverty Eradication Mission of Government of Kerala. The project, launched in May 1998, envisages the formation of self- help groups towards poverty reduction, empowerment and entrepreneurship.

Objectives: The key objectives of the movement are: (i) Identification of the poor families through risk indices based surveys; (ii) Empowering women to improve the productivity and managerial capabilities; (iii) encouraging thrift and investment; (iv) improving incomes; (v) better health, education and basic amenities like safe drinking water, sanitary latrines improved shelter and (vi) enabling the poor to participate in the decentralization process.

Over the years, the Kudumbashree neighborhood groups (NHGs), working well within the PRI system, became a basic unit of the community structure in Kerala, and effectively integrated to the unique decentralization process, rather than remaining as a mere microfinance initiative.

Organizational Structure: The project envisages a three tier structure at the Grama Panchayath level comprising (i) Ayalkoottam - Neighborhood groups (NHG) – basic unit of women representing 14-40 families; (ii Ward Samithy (ADS) – comprises of all NHG in a ward – basic unit of PRI structure and (iii) Panchayath Samithy (CDS) – comprises all ADS in the Grama Panchayath. The mission is managed by a state level office, headed by an IAS officer and at district level a District Mission Team . At the panchayath level a charge officer is given the responsibility of the administration along with the CDS governing committee.

Role in MG-NREGS

The most radical feature of implementation of MG-NREGS in Kerala is the central place given to Kudumbasree in the implementation of the program. The ADS has been entrusted with the task of organizing public works. Muster Rolls and other records are maintained by the ADS; implements are provided to laborers by them; and ensuring transparency and monitoring is also their responsibility. Welfare amenities to the workers are also provided by the ADS. Since ADS is an organization of the poor and is basically a women's group, there has been greater sensitivity and community participation in the implementation process.

Kudumbashree Mission

Better known as: Kudumbashree

Contact Person: Ms. Sarada Muraleedharan, IAS (Director, Kudumbashree Mission)

Address: State Poverty Eradication Mission,
2nd Floor, TRIDA Rehabilitation Building
Chalakuzhy Road, Medical College PO.
Thiruvananthapuram -695011
Kerala, INDIA

Phone: +91-471-2554714, 715, 716

Email: ***info@kudumbashree.org***

Web: **http://www.kudumbashree.org/**

Organization Type: Local Self Government

Reach: All over Kerala