

MGNREGA and Biodiversity Conservation

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The various activities being promoted under Mahatma Gandhi National Rural Employment Guarantee Scheme such as water harvesting and soil conservations could have high positive results on environment security and biodiversity and environment conservation. While this article appreciates the integration of biodiversity conservation into the MGNREGS, it points out the importance of preparing panchayat-level biodiversity registers, supporting individual and institutional efforts in biodiversity conservation and the formulation of appropriate policies.

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)¹ was launched in 2005. It aims at enhancing the livelihood security of people in rural areas by legally guaranteeing at least 100 days of paid employment in every financial year to adult members of any household willing to do unskilled manual work related to public work. Covering all the 626 districts of the entire country, benefiting 41 million households, it is the largest social welfare programme anywhere in the world.

The scheme also seeks to create durable assets to augment land and water resources, improve rural connectivity and strengthen the livelihood resource base of the rural poor. MGNREGS works are largely focused on land and water resources, which include water harvesting and conservation, soil conservation and protection, irrigation provisioning and improvement, renovation of traditional waterbodies, land development and drought-proofing. These MGNREGS works have the potential to generate environmental benefits such as groundwater recharge, soil, water and biodiversity conservation, sustaining food production, halting land degradation and building resilience to current climate risks such as moisture stress, delayed rainfall, droughts, floods, etc (Tiwari et al 2011; MoRD 2012).

Despite being remarked as no more effective than other poverty reduction programmes in India and beset with controversies (Drèze et al 2008) about

corrupt officials, deficit financing as the source of funds, poor quality of infrastructure built under this programme, lacking or insouciant social audit process, and unintended counterproductive effects on the rural economy and inflation, it has succeeded to a significant extent in raising the purchasing power of rural poor, reduce distress migration and create useful assets in rural India. Its inclusivity ensured that 23% workers under the scheme are scheduled castes (SCs), 17% scheduled tribes (STs) and 50% women, fostering social and gender equality.

Environmental Benefits

In contrast to a number of studies, on the impact of MGNREGS on social and economic welfare of the lesser-privileged sections of the society in the country, the environmental implications of the programme is less explored. The potentials of the programme in environmental security are relatively less addressed, perhaps a reflection of the low concern among the policymakers and think tanks on the environmental security amidst the larger clamour for economic growth and fetish for numerical expansion of gross domestic product (GDP), which in fact, “is an inadequate metric to gauge well-being over time” (Stiglitz et al 2009). It has been widely voiced that excessive emphasis on conventional economic growth does not lead to poverty alleviation (Peng 2009). There are studies, which demonstrate fall in per capita grain consumption (Patnaik 2009, 2012) or real welfare of the society under the conventional growth economics paradigm, despite unrealistic anchoring of poverty scales. Poverty alleviation is linked to environmental security more intricately and inclusively, and therefore, policies and strategies

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need to reflect the same. The various activities being promoted under MGNREGS such as water harvesting and soil conservations implicitly could have high positive results on environmental security and biodiversity and environmental conservation. In fact, protecting the environment is mentioned as one of the major activities conceived in NREGA (IAMR 2009).

A study conducted by the Indian Institute of Science in four districts of four selected states, namely, Medak (Andhra Pradesh), Chitradurga (Karnataka), Dhar (Madhya Pradesh) and Bhilwara (Rajasthan), has shown that considerable environmental benefits were derived by executing various programmes under the MGNREGS (IIS 2013). The major benefits identified are the improvement in water resources (such as water conservation and harvesting works, drought-proofing, irrigation provisioning and improvement works, and renovation of traditional waterbodies, improved groundwater levels, increased water availability for irrigation, increased area irrigated by ground, surface water sources, and finally, improved drinking water availability for humans and livestock), environmental benefits and vulnerability reduction, improvement in land resources (land development works such as land levelling, conservation bench terracing, contour and graded-bunding, field-bunding, pasture development, silt application and drought-proofing), contributing to improved soil organic carbon (soc) content, reduced surface run-off and soil erosion, enhancement of crop diversity and crop yields and positive impacts on forests, plantations and fruit orchards.

In Chhattisgarh, under the auspices of MGNREGS, Kabeerdham district has done great deal of work, plantation and drought-proofing in 2006-07. The MGNREGS work has been recognised by *Limca Book of Records* for planting 37 lakh saplings in a single working day, along the sides of national highways, state highways, and village roads, and degraded forestlands. Community forestry was taken up in some villages. The species chosen were jatropha, *gulmohar*, bamboo, mango, teak wood, guava, etc.²

It would have been more appropriate if more of local species were selected for plantation.

Biodiversity...

Though it has been envisaged under MGNREGS to take up works related with biodiversity conservation and enhancement, available information indicates that biodiversity conservation is yet to be internalised as one of the focal areas of MGNREGS. The priority recommendations, inter alia, for MGNREGS by the United Nations Development Programme (UNDP) in the report entitled "Greening Rural Development in India" (UNDP 2012) falls short of giving any concrete action plans for biodiversity conservation to be included in the ongoing programmes related with rural development in India. The greening rural development refers to five categories that do not include conservation of biodiversity as a category. It fails to emphasise in actions the umbilical linkage among biodiversity conservation, environmental security and rural development. Green initiatives recommended largely emphasise environmental issues in a wider scale.

... in Kerala

In Kerala, the programme started in 2006 in two districts (Wayanad and Palakkad, two backward districts in the state) was extended to all the districts by 2008. Kerala's emphasis on decentralisation of power and planning process has ensured that panchayati raj institutions³ play the pivotal role in planning and implementation of MGNREGS. As of now, the entire implementation is in the hands of village panchayats, and an important role is played by women's self-help groups such as Kudumbashree. Nevertheless, adverse comments on the execution of the programme in the state were made by the national level monitors in 2010 mentioning, inter alia, that 60% of the work is unsatisfactory or irrelevant. However, majority of the MGNREGS participants in the state were engaged in works for improving road connectivity (56.4%), flood control and protection (35.5%), clearing irrigation canals and channels (26.6%), renovation

of traditional waterbodies (22.6%) and water conservation and harvesting (19.4%).⁴ NREGA in the state is being extended to forestry operations, involving Vana Samrakshana Samithis (vss), Eco-development Committees (EDC) and Kudumbashree.

Paucity of community lands for developmental works in Kerala has led to local panchayats looking for new avenues for generating work. The authorities in the state have also extended the MGNREGS works to private lands for building water harvesting structures and private agriculture, in rice paddies and plantations, especially for preparing water harvesting systems and providing labour for taking up agricultural operations. The most appealing and proximate would be the roadsides, while scouting for new avenues for work. As a result, clearing all the vegetation, except large trees, on the roadsides has become a major activity under MGNREGS in the state. While maintenance of the road-shoulders or berms is crucial in highly rainy areas, where the berm gets seriously eroded, at some locations almost a foot down from the tarmac, it is a common sight throughout the state that women are actively engaged in the process of stripping the vegetation several metres away from the roads. However, roadsides, leaving the berm, almost extending to several metres in Kerala are a major repository of biodiversity, although not much specifically and scientifically is documented. This uncared-for vegetation, regrettably most of the species considered weeds in common parlance, also provides habitats for several faunal species such as frogs, reptiles, small mammals and birds. Although a strong natural resource management focus has been claimed as given to NREGS in the state it seems that biodiversity conservation is yet to get due importance while executing the programmes.

Although the NREGA takes up green jobs (ILO and Development Alternative 2009) elsewhere in the country, the green jobs need to be further green integrating direct biodiversity conservation into it rather than being limited to afforestation, forestry and related operations. The roadsides are biodiversity

rich in the state due to local reasons such as active monsoon for a longer duration, organically and nutritionally rich soil and landscape very conducive for plant growth, scarce stray cattle, etc. During one of our rapid surveys recently, within small quadrates of 10m × 3m size at different locations in Palakkad district, along the roadside, 60 plus species of plants were found. Many plants such as *Tribulus terrestris*, *Amorphophalus paeoniifolius var.companulatus*, *Gloriosa superba*, *Sida spp*, *Rauvolfia tetraphylla*, and several other medicinal herbs were seen there. Among the plant species reported, *Rauvolfia tetraphylla*, *Hemidesmus indicus*, *Gloriosa superba*, *Curculigo orchoides*, *Artocarpus hirsutus*, *Aegle marmelos*, *Cayratia pedata var pedata*, *Kaempferia galanga*, *Curcuma angustifolia* and *Amorphophalus paeoniifolius var.companulatus* fall in the International Union for Conservation of Nature (IUCN) red list category. Many of these species, which have long since disappeared from the farmlands of Kerala due to the spread of cash crops, intensive land preparation for cultivation and the recently flourishing construction business diverting the croplands and other natural systems such as wetlands, are now found only along the roadsides. Nevertheless, they remain under threat by the regular stripping/cleaning activities.

The wanton clearance of this diversity is a disturbing outcome of the MGNREGS, which otherwise is resulting in commendable outcomes. It is also seen that such wild growth, if permitted to grow, offer livelihood to many local lesser privileged families apart from providing quality raw medicinal plants for the traditional healthcare industry. Enquiries by us in some pockets of the Palakkad district revealed that several households supplement their income collecting medicinal plants from the roadsides; they do collect such species from other areas, but roadside growth gives them higher and easier access, and better return on the effort.

Another issue related to MGNREGS programme is the cleaning of waterbodies. Desilting and deepening, boundary protection and catchment treatment

would improve, to an extent, the waterbody and restore its ecological characteristics and services. However, what normally happens is complete removal of vegetation within and outside the waterbody. Such a practice in effect, instead of ecological value addition to the waterbody, does the reverse – makes it a mere water tank, dispensing with several of its ecosystem services. It would be appropriate that the executive agency and the participants are made aware that such actions apart from the loss of plant biodiversity, lead to losing habitat for several faunal species. Several of the lesser glamorous (to the public and largely elite nature watchers) creatures, amphibians, lizards, snakes, insects, etc, are deprived of their habitats and are eliminated; thereby we lose the ecological services derivable from them, if not being at fault for elimination of a biological entity that had evolved from time immemorial. There are already studies related to NREGA and water management (Bassi and Kumar 2010) talking about need for fine-tuning the activities for over all improved welfare; and the welfare should include other species and the ecological set-up as well.

It would be appropriate to integrate biodiversity conservation into MGNREGS, and not miss the bushes for the woods, perhaps through the following. These

programmes are eminently possible in the state with highest literacy in the country.

Preparation of Panchayat-level Biodiversity Registers: Biodiversity register of panchayats has to be prepared as a part of the panchayat resource mapping at the earliest and biodiversity hotspots in each panchayat should be demarcated. Each of such hotspots is a valuable germplasm bank and a repository of several unknown but precious traits. Since gram panchayats have a central role in the implementation of the scheme, they should take into consideration these local hotspots, while implementing MGNREGS. Each panchayat-specific biodiversity register is actually a record of biological assets, a legacy of the community, and would be handy for bio-prospecting later on their own terms. Kerala has several such biodiversity registers prepared with public participation to its credit. This could be done by the help of a standardised questionnaire with a brief introductory workshop for MGNREGS mates or group leaders of the team. It is essential that the MGNREGS mates or leaders at the field and other stakeholders be fittingly sensitised to the need for saving biodiversity and about its potential as resources. Simultaneously, awareness programmes can be taken up among all the stakeholders to ensure conservation of those precious biodiversity.

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Supporting Individual and Institutional Efforts in Biodiversity Conservation:

The Ministry of Environment and Forests is pivotal in biodiversity conservation being instrumental in the enactment and implementation of laws related to environmental and biodiversity conservation. However, the environment/conservation movements in the country have been spearheaded by non-governmental organisations (Kerala Sasthra Sahitya Parishad, Centre for Science and Environment, ATREE, Kalpavriksh, etc) and several individuals. Pioneers such as Salim Ali were the rallying points for conservation initiatives from the perspective of science, while social activists such as Sundarlal Bahuguna and Chandiprasad Bhatt were the fountain heads for such initiatives from a social, cultural, ethical, and environmental and livelihood security perspective. There have been instances of a housewife single handedly fighting a lone battle to save mangrove forests in Kerala, individuals and communities sacrificing time, effort and sometimes even life to save wetlands and forest patches in different parts of the country.

The Centre for Indian Knowledge Systems, Chennai has been doing pioneering work in the conservation of traditional knowledge systems, especially in the field of agriculture. One of their main activities has been the conservation of traditional rice varieties. They have been cultivating 100 plus traditional rice varieties in their farms. Abhayam, a social service organisation based at Koppam area of Palakkad district of Kerala has been cultivating 12 varieties of traditional rice in 30 acres of land with the active support of a group of interested individuals. Cheruvayal Raman, a traditional farmer from the Kurichiyar tribe of Wayanad is in the forefront of conservation and popularisation of 36 varieties of traditional rice. Tribal community in the Koraput district of Odisha has been conserving the traditional rice variety "kalajeera" for which they have been appreciated from many quarters. *Kaippadu* is a traditional system of rice cultivation evolved in saline soils in the mangrove areas of Kasargode and Kannur districts of Kerala using traditional

rice varieties, which has recently received an entry into the Geographical Indicator (GI) registry.⁵ There are several more commendable endeavours such as cultivation of more than 200 traditional varieties of rice, conservation of traditional seeds, traditional knowledge systems and traditional agricultural practices enriching the social capital that has evolved locally. They are precious only if we could realise how these have evolved through time fitting to the local environment and how scientific they are.

Similarly, there are several individuals and institutions involved in the conservation of the biodiversity of medicinal plants, cereals and millets, other edible plants, etc. These activities are severely constrained by adequate resources, mainly manpower. Making manpower available through MGNREGA will go a long way in sustaining these commendable efforts, which would help ensuring preservation of the valuable germplasm vanishing at a fast pace, food, health and environmental security in the days to come.

Formulation of Appropriate Policies:

India being a subcontinent of heterogeneous socio-economic, belief systems and cultural milieu with a varied landscape, formulating uniform programmes and policies for implementation of any programme is fraught with inherent shortfalls. Therefore, concerted efforts need to be made, ensuring wider involvement of all the stakeholders, academics, professionals and policymakers, to formulate and fine-tune programmes and policies for integrating biodiversity conservation in a localised context in MGNREGS activities.

NOTES

- 1 Department of Rural Development, Ministry of Rural Development; No J-11011/3/2009-NREGA.
- 2 Annual Report 2006-07, Zilla Panchayat, Kabeertham, CG.
- 3 Vijayanand S M and V N Jithendran, "Implementation of NREGA - Experience of Kerala", http://www.crd.kerala.gov.in/nrega_feature.pdf
- 4 "A Study on the Performance of NREGS in Kerala", N Narayanasamy, Department of Extension Education, Gandhigram Rural Institute (Member, Professional Institutional Network of NREGA), Gandhigram, Tamil Nadu.
- 5 "GI Tag for Kaipad Rice to Boost Cultivation", *The Hindu*, 5 August 2013.

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