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Is MGNREG Scheme Complementary to Fishing Activities? A Study on Some Selected States of India

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Abstract

Freshwater fish output is taken as a proxy variable for empirical assessment of indirect benefits in terms of enhanced quantity of freshwater fish (output) cultivation. It is not unlikely to assess empirically the productivity of subsidized public scheme when rural development or rural asset generations are underlined in the said scheme, MGNREG Act, 2005. Rainwater harvesting is a major component part of the scheme since about 49.5 per cent of the total fund is already utilized on water conservation and obviously it has an impact on the cultivation of freshwater fish output. Time series data on annual expenditure on MGNREG and corresponding freshwater fish output at the state level are taken during the period 2006-07 to 2013-14 for 16 major Indian states. Fixed effect model and random effect models are being applied and the Hausman specification test suggests that fixed effect model is more appropriate than random effect model. Significant differences among the intercepts of the selected states are revealed as per F test. The results of fixed effect panel regression establish that fish output is enhanced by 0.000257 thousand tones or 0.26 tones if MGNREG expenditure rises by one crore or 10 million rupees.

Key Words: *MGNREG Scheme, water conservation, fish output, public scheme***JEL classification:** G2

Introduction

Entitlement of Right to Work in India, no doubt, invites subsidy since a large section of laboring class of people is relying on agriculture sector; but subsidy for the sake of subsidy is not a permanent solution as we talk about the sustainable growth and development in the era of transitional or recovery stage; it could be a ladder in a primary stage in traditional economy for boosting laboring class of people in India, especially in agriculture sector. Perhaps perpetual flow of subsidy to one makes him disable permanently to speak of. J. M. Keynes suggested in 1930s that digging the soil and filling them in the era of high mass consumption stage of the country to circulate money among the stakeholders from government's end so that they could place their demand in the market for revival of the market incentives since market demand is the last word of growth. Despite the availability of natural capital and physical capital, we had to launch National Rural Employment Guarantee Act of 2005 to create a justifiable "right to work" for all households in rural India through the National Rural Employment Guarantee Scheme (NREGS), renamed as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in 2009.

Execution of any extensive volume of government project at the cost of peoples' money for public interest is quite strenuous achieving its target unless we have adequate infrastructure for its implementation, since cost of the scheme compared to its benefit matters much in a developing nation like India. A large number of government projects for the poor came into force in India (like food for work) since independence without assessing the quality of infrastructure, especially to plug the leakage of public fund as middlemen, unethical public representatives and power brokers are proactive in gobbling in their lion's share of the project fund. Corruption has become institutionalized in India and India's international position in terms of corruption perception index is well known to the global economy. National Rural Employment Guarantee Scheme, 2005, has come into force without setting up the desired infrastructure at the Panchayet levels when about Rs.39377.28 crores was spent in the year of 2010-11 as compared to Rs. 37905.22 crores in 2009-10. (Source: Ministry of Rural Development, Government of India, MGNREG Division). Imagine the ratio of it to GDP in India causing inflation. In spite of serious bottlenecks in facilities available at Panchayet level, resurgence of Mahatma Gandhi National Rural Employment Guarantee Scheme in the name of employment generation in India in 2005 is a time-relevant policy conforming to rising trend of consumption-investment ratio for the sake of manual village workers and it was obviously underlined as a big push on the part of the central government in particular to create durable rural assets and large scale guaranteed employment to the unskilled people. The policy obviously supports theory of inclusive growth temporarily when ongoing rampant poverty goes down the threshold point of nation's carrying capacity, a big social noise. Perhaps there was no other alternative in the face of vote politics in 2005-06 in India. Employment generation and rural productive assets creation or infrastructure generation matter much in the face of increasing tendency of inequality of income distribution in India because it would at least support the idea of inclusive growth theoretically to speak of.

The additional infrastructure for cultivation of freshwater fish with the help of rainwater harvesting is one of the indirect outcomes of MGNREG Scheme. The supply side of generation of output of freshwater fish is important enough compared to the demand comprising creation of large-scale employment in rural India so far as generation of real well being is concerned. Though, we cannot deny that the social benefits of additional irrigation facilities of the renovated water bodies as a component part of the supply side, which indirectly affects agricultural productivity positively since scarcity of freshwater even in the agricultural belt is pronounced. Priority to generate employment to the poor people is important, but it is more important to construct rural assets or infrastructure or to produce renewable resources like fish for the sustainable growth, despite the unchecked poverty in rural belt today.

Rain water harvesting , renovation of traditional water bodies including de-silting of tanks owned by private person, excavation of new ponds are included in MGNREG Scheme which are obviously complementary to freshwater fishing activities, hence availability of fish output at the Panchayet level throughout the country is likely to get a positive turn, if the policy is effective at all. We cannot deny that the indirect impact of expenditure in the yearly budget of MGNREG Scheme at the state level on freshwater fish output which is expected to be positive, as conservation of water bodies and rainwater harvesting are the prime

objectives of the said scheme. There is a scope for empirical verification for justifying our hypothesis of impact of annual expenditure under MGNREG scheme on cultivation of freshwater fish. Since 2005, as it comes into force in 2006-07 effectively, it is not sufficient time span for empirical testing of the proposed hypothesis of the study with time series data, but we could take a quick look empirically at the productivity of the expenditure under MGNREG Scheme on freshwater fish cultivation at the state level. Shah (2015) raises the touchstone of the introduction that evolves MGNREG Scheme generated more than 1827 man-days of work at a total expenditure of Rs.2,80,450 crore over the last nine years and it gets an inverted U turn to the downward direction since it seems to many observers that the programme is on the eve of shut down. Although a series of steps are taken to reform in implementation of the scheme under the guideline of the questions raised by the social scientists. For example, a) why dole money or unconditional cash transfer is not given in place of MGNREGS oriented activities? b) Is MGNREGS making agriculture non-remunerative in India or aggravating the agrarian crisis? Does India afford such massive annual outlays as it struggles to contain the fiscal deficit and attract foreign investment? All these are important questions in view of solving the rural unemployment problem and asset generation in rural belt in India because proportion of social benefit to the social cost matters much today.

Literature Review

Previous research works on this topic show that it is almost unexplored area to speak of; but some interrelated works are to be included into the review of the present work. According to Bhaskar, Shah and Gupta (2015), asset created in terms of ground water level is marginal compared to expenditures incurred in the corresponding head of account. The study of Ghorude and Muldiyer (2015) opine that there is a little impact of the scheme on tribal livelihoods as they have gone through the sample of 150 members in Goa state; the faulty implementation strategy has ruined the spirit of the programme. Mehrotra (2008) has put a comment that the eleventh plan and annual plans for 2007-08, 2008-09 have already enhanced the allocation for centrally sponsored watershed development programmes. Desert Development Programme, Drought-Prone Area and Integrated Watershed Development Programme could be run along with MGNREG Scheme for water conservation. Kheri (2008) opines that the act can be an opportunity to promote overall rural development and alter the balance of power in village society. The report of the Ministry of Rural development (2006-07) of India reveals that about 54 percent of total fund allotted to MGNREGS was utilized on water conservation and water harvesting including renovation of traditional water bodies in 2006-07. The same report mentioned that 737 lakh cubic meter of water storage capacity was generated through digging new tanks, ponds, percolation tanks and check dams. Besides this, 481 lakh cubic meter of water storage capacity through desilting of traditional tanks/ponds, old canals was created by the same scheme. The survey was conducted by NSS (66th Round) between July 2009 and June 2010 in all states. It appears to reflect the scheme's built-in "self-targeting" mechanism, whereby non-poor people find work on the scheme less attractive than do poor people. This should not be interpreted as indicating that well-off families in rural India are turning to MGNREGS (Dutta et al 2012). Azam (2011) suggests that increase in groundwater in the district of Anantpur of Andhra Pradesh is pronounced so far as water conservation programme under MGNREG Scheme is concerned; his study includes three districts of Andhra Pradesh for examining assets creation, agricultural productivity too. According to Kelkar (2009), soil and water conservation (SWC) works have accounted for over 80 per cent of the total expenditure under MGNREGS in Andhra Pradesh.

Besides the story MGNREG in India, the efforts were taken by the respective countries in other continents to generate employment to the job seekers since UN statistics reveal that large number of youths remain unemployed in human history; about 1.2 billion people belong to the ages of 15 and 24. Devereux and Solomon (2006) quote South Africa faces biggest challenges in terms of unemployment. Accordingly, government launched Expanded Public Works Programme (EPWP) in April 2004 for creation of jobs to the disadvantaged communities. They also quote that Food for Work was the principal item for generating employment in Bangladesh since 1975, but the importance Rural Maintenance Programme cannot be denied in Bangladesh so far cost effectiveness is concerned. In Indonesia, Social Safety Net Programme was undertaken in 1998-99 in the name of Padat Karya to curb the financial crisis through job creation, it assisted to those who lost their jobs in the formal sector. As per UNDP report, Russia introduced New

Employment Programme in 2013 to promote jobs for the youths; new mechanism aims to focus on job creation in the sectors that have been overlooked previously. Brazil does otherwise, investing fund on training programme. How youths maintain their jobs in the long run? The event of offering jobs to the government led infrastructure construction to replace straightforward relief is started 30 years ago under Yigong-daizhen programme in China. The current estimate suggests that about 70 per cent jobs are allotted to youth. The report of UNDP says that priority is given to capacity-building so that youths could sell their labour power to the employers.

Inland Water Resource in MGNREG Era

The promises of 100 days of work per year to all rural unskilled households whose adults are willing to do manual labour at the statutory minimum wage notified for the programme. Work is to be made available to anyone who demands it within 15 days of receiving an application to work, failing which the state government is liable to pay an unemployment allowance. This kind of uncertainty about disbursements in risky environments would be a challenge to any government at any stage of economic growth and development. Even if flexibility in spending is not an issue, accommodating supply to demand could still be a challenge, particularly in poor areas. According to the administrative data, 52.865 million households in India demanded work in 2009-10, and 99.4% (52.53 million) were provided work. Further, state and local governments have an incentive not to report unmet demand, given that this implies they should pay unemployment allowances. Moreover, the capacity for preservation or restoration of natural freshwater in our country is, no doubt, enhanced because of the introduction of the scheme since 2005. Although water levels or the available quantity of water in the respective water sinks at the state level depends on hydrological cycle even in the phase of global warming and climate change, intensity of rainfall in particular. Inland water resources are classified as rivers and canals, reservoirs, lake and ponds, beels, oxbow lakes, derelict water and brackish water that are all treated as basic input for fish cultivation. We might take a note, except rivers and canals, total water body covers about 7 million hectares of land as per report of the Central Water Commission, Government of India. Undivided Uttar Pradesh occupies first place with total length of rivers and canals as 31.2 thousand kilometers; which is about 15 percent of total length of rivers and canals in the country. Among the remaining forms of inland water, tanks and pond have occupied 2.9 million hectares land, followed by reservoirs 2.1 million hectares despite the possibility of variability of water bodies over the years. Most of the area under tanks and ponds lies in southern states of Andhra Pradesh, Karnataka and Tamil Nadu. These states along with West Bengal, Rajasthan and Uttar Pradesh account for 62 percent of total coverage under tanks and ponds in the country. As far as reservoirs are concerned, major states like Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttar Pradesh account for larger portion of total coverage. More than 77 percent of area under oxbows, lakes, derelict water lies in the states of Orissa, Assam. Orissa ranks first as regards the total area under brackish water and is followed by Gujarat, Kerala and West Bengal. It is evident that total water resource is unevenly distributed over the country as geographical factors are prime determinant to the natural water endowments for the purpose of fishing.

Most of the states have resorted to their own ways and means of spending fund allocated in MGNREG since 2005-06, especially conservation of water and road connectivity works. As per report (June 2011) of the Director, National Rainfed Area Authority under the Planning Commission, during 2008-09 about Rs.27250 crores were spent under MGNREG on its various components. Out of this about 60% was spent on water conservation and water harvesting item. It is evident that only five states have utilized substantial amount of allotted fund under MGNREG to the water conservation works during 2006-07, and water works in Andhra Pradesh alone accounted for about 67 percent of total allotted fund in the said scheme. Uttar Pradesh, Orissa, Assam and Bihar have given priority to the works of road connectivity and water conservation in the same period. Blue work of rural development like water conservation even in the water-intensive states is proved to be the mainstay under the umbrella of MGNREG scheme. According to Union Rural Development Ministry, millions of people in the country frantically seeking jobs under the programme embarked on building or reviving 3.4 million water conservation structures during the last five years when construction of water conservation structures is compulsory under the scheme. Central government has spent about Rs.110 000 crore in this scheme (Mahapatra, et al, 2011) during 2005-2011 and spending on

water conservation structures was close to Rs.54000 crores, and hence these water sinks should have created a huge rainwater harvesting capacity for fish cultivation to speak of. The programme claims the added capacity on 3.07 cubic million meters under water conservation and renovation of traditional water bodies. Several studies are done on a small scale too. The commissioner of Rajasthan MGNREG claims additional 20 billion liters of water have been created during August 2005 to July 2011. Dungapur, one of the districts of Rajasthan, spent about Rs.482 crores and 31616 water structures have been constructed during the period 2006 to 2011. Official reports reveal enough water harvesting capacity have been generated for agricultural purposes, as fishing is a part of agriculture. One survey report establishes that percentage of water conservation works under MGNREG scheme is declining steadily at the national level. In 2006-07, completed water conservation works accounted for 48 percent of proposed works and it has been decreased to 38 percent in 2011-12. It is undeniable that some of the districts declared as drought-affected because of deficient rain even in the rainy season. As a result, available quantity of fresh water has got down-trend despite additional water structures constructed or revived with MGNREG fund. The state like Uttar Pradesh spent, on an average, Rs.5 lakh on each 45000 ponds for the purpose of rainwater harvesting during MGNREG era, while 30 percent of them are dried up because design and planning of works did not consider local ecosystem or ambient geographical factors. Pani (2011) suggested that technical inputs deployed on the works of MGNREG are very weak or not scientific. The workforces of Panchayets are not trained whereas they are the ultimate authorities for executing the voluminous works when skills, design of works, planning etc are very important. The perspective plans are mostly prepared at the district level and hence non-synchronization between what is planned and what the rural people need is barely exposed. The pampering of the corrupt persons in the face of increasing trend of international corruption perception index in India is very much proactive because the check valves, legislative and judiciary systems, do not work to prevent maximum level of law and orders to a minimum for reducing the corruption indexes.

Research and Methodology

It is practically impossible to collect time series data set for long period as MGNREG scheme is introduced in 2005-06 and hence we primarily run a panel data model to identify the effects of unobserved variables for each state and we run both fixed effect and random effect models with the same dataset. Hausman specification test is carried out to test between 'Fixed effect' and 'Random effect' model. F test is also applied to understand the fitness of panel (Least Square Dummy Variable) estimate and simple OLS model. On the basis of the tests we finally apply fixed effect panel regression covering 16 major states for the period 2006-07 to 2013-14.

Objective of the Study

Empirical investigation of productivity of the expenditure under MGNREG Scheme on freshwater fish cultivation at the national as well as the state level in India is undertaken in the present study in order to assess the relevance of the fund utilization in the said scheme when about 49.5 per cent total fund has been utilized on water conservation, renovation of traditional water bodies, including desilting of tanks, excavation of ponds etc. Freshwater fish output is taken as a proxy variable for empirical assessment of indirect benefits in terms of enhanced quantity of freshwater fish cultivation, despite the fact the fresh water availability matters much to produce fish output.

Data Source

Time series data for the period 2006-07 to 2013-14 on quantity of annual freshwater fish output of 16 major states of India is collected from the Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Government of India. State-wise time series data covering the period 2006-07 to 2013-14 on annual expenditure on MGNREG scheme is also collected from MGNREG Division, Ministry of Rural Development, Government of India. It is reported that about 49.5 percent of total annual expenditure under MGNREG Scheme is utilized for water conservation, which indicates that separate data on expenditure on water conservation under MGNREG Scheme is not so essential to go ahead for the present empirical study.

Empirical Investigation

We have a time series dataset for 16 major states in India on cultivation of freshwater fish output and corresponding total MGNREGA expenditure for each state during the period 2006 to 2013. The present study focuses on the impact, if any, of the MGNREG expenditure on fish output since we assume fish output as a proxy variable for testing asset generations in MGNREG era. We are primarily interested to identify the effects of unobserved variables for each state and hence we run both fixed effect and random effect panel data models with the same dataset. In both the cases the coefficient of independent variable, coefficient of MGNREG expenditure, is found to be statistically significant. The Hausman specification test suggests that fixed effect model is more appropriate than random effect model. This is consistent with our assumption that we want to conclude our observations over the panel data of these 16 states of India states only. Our null hypothesis that the differences in coefficients are not systematic is rejected at 5% level. Therefore, we rely on the results of fixed effect model. However, if we are not going to generalize the result for a larger population, the interpretation of the results is confined to these 16 states only; it is not always necessary to go for Hausman effect test. Finally, the test of differences in the intercepts of the states suggests that there is significant difference in the intercepts of the states. In this context this *t* test would not serve our purpose since the testing of hypothesis is whether the coefficient are all equal or the differences of the coefficients of intercepts are zero. So the *t* test will not serve our purpose. The unrestricted model is where the null hypothesis is standard pooled estimate, i.e., there is only one intercept.

The following F test is carried out and we found that both the R-squares, i.e., R-square from panel (Least Square Dummy Variable) (LSDV) estimate and from OLS are different and the value of F-statistics (F=131.8567) with proper degrees of freedom, which implies there are significant differences among the intercepts of the selected states. So you can go for Fixed Effect Panel regression.

$$F(n-1, nT-n-k) = \frac{(R_{LSDV}^2 - R_P^2) / (n-1)}{(1 - R_{LSDV}^2) / (nT-n-k)}$$

We have applied the Fixed Effect Panel regression to test whether there is any impact of MGNREG expenditure on fresh water fish output or not. The results reveal that fish output is enhanced by 0.000257 thousand tones or 0.26 tones if MGNREG expenditure rises by one crore rupees. The result of fixed effect panel regression is given below:

$$\text{Fish Output} = 249.315 + 0.000257 \text{ MGNREG Exp}$$

(19.40) (3.20) $R^2 = 0.957$

If the average market price is assumed to be Rs.300/- per kilogram, Rs. 78000/- worth of additional freshwater fish output is generated as result of expenditure of one crore rupee (10 million) in the scheme, it is, no doubt, a non- remunerative profile from the standpoint of only fishing activities. The battle for employment generations under the subsidized scheme does support the findings: an insignificant return of total MGNREG expenditure is bounced back in the form of revenue through fishing activities or generation of rural assets in terms of water conservation is almost unavailable.

Conclusion

If we exclude the pecuniary benefits of irrigation facilities as well as drought controls, it is non-deniable that the scheme is absolutely a subsidized public-character programme or employment generations to the poor persons, and we cannot expect any sort of positive return even in the condition of rural development undertaken in the said policy. Despite the benevolence aspect of subsidy, we are able to conclude that

fishing activities have got a marginal return through augmentation of water resources in the MGNREG era. Epilogue suggests that water conservation under the scheme, a major component of the scheme, does not support the sustainability as far as flow of revenue from fishing activities is concerned. So, where the public money goes out?

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