



WELFARE & POVERTY IMPACTS

The Mahatma Gandhi National Rural Employment Guarantee Scheme

YANYAN LIU AND KLAUS DEININGER*

Public works programs are gaining in popularity as governments seek more effective ways of battling extreme poverty and gender-based income inequality. Establishing such programs as a type of social safety net allows governments to set balanced wages while at the same time investing in infrastructure that will further their country's economic growth down the road. However, public works programs face challenges in the form of high administrative and logistical requirements and potential corruption. This project note looks at India's Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) to examine the program's short- and medium-term welfare and poverty effects in a well-implemented area (Andhra Pradesh) and to determine if the program's benefits outweigh its potential pitfalls.

OVERVIEW

India's Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is the largest public works employment project in the world, employing 55 million households in 2010-11. MGNREGS guarantees employment for up to 100 days per fiscal year, and the program's wages are the same for men and women. In addition to its emphasis on gender equality, MGNREGS provides several other important innovations as a safety net program. First, it establishes people's legal right to work and provides for unemployment compensation for individuals who apply to the program but do not receive employment within two weeks. Second, the program aims to make itself sustainable in the long run by focusing on productive rural infrastructure projects such as roads and irrigation systems.

Studies have found females' awareness and participation rates to be greater than 50%, significantly higher than earlier or comparable programs, which supporters claim proves that MGNREGS has enhanced women's empowerment in India. Similarly, anecdotal evidence has been used to suggest that the program has been successful in increasing decentralization and political transparency. Critics, however, argue that MGNREGS still suffers from both high costs and high levels of corruption, which may undermine any potential benefits. Determining which of these claims is true is com-

plicated further by the fact that program implementation varies widely from state to state. While some states, such as Andhra Pradesh, have been successful in holding local officials accountable for fair, efficient job allocation and payment of wages, other states suffer more heavily from corruption and a lack of transparency.

We examine MGNREGS' implementation in Andhra Pradesh and focus on the partial equilibrium impacts on the program's direct beneficiaries. We utilize administrative data and three-round household panel data collected prior to the establishment of the program (2004), at the start of program implementation (2006), and at full operation (2008). By examining households' welfare and poverty levels during all three stages and exploring the program's phased roll-out, we are better able to determine the program's short- and medium-term impacts.

OUR FINDINGS

Overall, we find that the program is well-targeted in Andhra Pradesh and has had impacts higher than the amount of the program's direct cash transfers. While short-term effects are higher in terms of participants' nutritional intake, in the medium-term, we see increased accumulation of non-financial assets such as land. Both short- and medium-term benefits seem to accrue more to participants in the scheduled castes and tribes, as well as to those who would otherwise rely on casual labor.

Our three household surveys covered demographic status, spending on food and non-food items, asset endowments, and land investments. Households were assigned into one of four categories: poorest, poor, not-so-poor, and non-poor. These surveys allowed us to examine changes in households' nutritional intake (short-term program effect) and asset endowments and land investments (medium-term program effects). We also used administrative data, which provided information regarding participants' wage rates, total workdays, total payments, and status of all MGNREGS work in the area. Finally, we gathered information regarding how participation in MGNREGS employment impacted land-related investments.

As Table 1 shows, in Phase 1 (2006-2008), 55 percent of households in the poorest and poor categories received MGNREGS job cards; this number was 44 percent and 30 percent for not-so-poor and non-poor households, respectively. Total job card issuance

* Yanyan Liu is a Research Fellow at the International Food Policy Research Institute. Klaus Deininger is a Lead Economist at the World Bank.

dropped slightly in Phase 2 (2007-2008) and Phase 3 (2008), to 36 and 40 percent, respectively; however, these later phases saw increased emphasis on the poor – in Phase 3, 43 percent of the poorest households held job cards, as opposed to only 15 percent of non-poor households. Actual participation in MGNREGS was 41 percent of all households in Phase 1 areas.

Table 1: MGNREGS Participation by Household Poverty Status

	Phase 1			Phase 2		Phase 3
	2006	2007	2008	2007	2008	2008
Having a job card						
All households	0.438	0.492	0.503	0.322	0.356	0.399
Poorest of poor households	0.492	0.537	0.547	0.295	0.338	0.429
Poor households	0.493	0.540	0.554	0.422	0.463	0.470
Not-so-poor households	0.350	0.427	0.436	0.252	0.273	0.293
Non-poor households	0.233	0.288	0.302	0.266	0.269	0.146
Participation in NREGS work						
All households	0.049	0.328	0.414	0.035	0.298	0.188
Poorest of poor households	0.056	0.381	0.457	0.038	0.286	0.211
Poor households	0.045	0.355	0.460	0.047	0.382	0.226
Not-so-poor households	0.052	0.260	0.356	0.021	0.230	0.128
Non-poor households	0.060	0.056	0.102	0.051	0.077	0.000
Number of observations	2,397	2,397	2,397	838	838	751

Additionally, wages were not significantly different for men and women. As Table 2 shows, female participation in Andhra Pradesh is significantly higher than male participation in all phases – 63 percent in phase 1, 60 percent in phase 2, and 50 percent in phase 3. This result is not surprising, given women’s ability to earn equal wages under the MGNREGS program.

In theory, MGNREGS employment can directly benefit households in three ways. Transfer effects increase participants’ income either by offering higher wages than would be received from other forms of employment or by providing employment in times when participants would otherwise be unemployed. Income gained from MGNREGS employment can also be channeled into savings and investments, which will allow households to be more resilient to economic shocks in the long term. Finally, the program supports some small-scale works on participants’ own land, meaning that participation in MGNREGS has the potential to increase a household’s agricultural productivity by increasing investment on otherwise marginal lands.

For our purposes, “direct beneficiaries” are defined as eligible households with at least one person participating in MGNREGS employment. We estimate the impact of MGNREGS employment using triple difference plus propensity score matching (see Table 3). The results from Phase 1 households point to significant and positive medium-term impacts of MGNREGS participation on households’ consumption expenditure and asset accumulation. With an annual increase of 7%, or Rs. 943, estimated gains exceed gains from MGNREGS-related cash transfers in per capita terms (Rs. 570 overall or Rs. 672 in 2008). Evidence from Phase 2 and 3 districts points toward significant MGNREGS impacts on energy and protein intake but not on asset accumulation.

To explore whether MGNREGS disproportionately benefits marginalized populations, we repeat the above analysis for scheduled castes and tribes compared to others, as reported in Table 4. We find significant medium-term effects on energy intake and accumulation of non-financial assets (as well as protein intake) for scheduled castes and tribes. On the other hand, medium-term benefits for other castes are limited to higher levels of consumption. Similarly, in the short term, results suggest that higher levels of growth in consumption, energy, and protein intake due to MGNREGS benefits are exclusively concentrated among scheduled castes and tribes.

We also use a difference-in-difference method and falsification test to test the hypothesis that MGNREGS may crowd out other forms of employment. Our result rejects this hypothesis: program expenditures translate almost directly into additional employment. We also find that land improvement activities, many of which are conducted on participants’ fields, provide a potential pathway for MGNREGS impacts, suggesting that the program may have a long-term effect on land productivity.

Table 2: MGNREGS Participation and Wages by Gender

	Phase 1			Phase 2		Phase 3
	2006	2007	2008	2007	2008	2008
Female participation (% of time)						
All households	0.536	0.590	0.631	--	0.599	0.503
Poorest of poor households	0.446	0.607	0.650	--	0.632	0.520
Poor households	0.597	0.580	0.606	--	0.586	0.415
Not-so-poor households	0.655	0.595	0.633	--	0.639	0.650
Nonpoor households	0.403	0.456	0.633	--	0.411	0.444
Female wages received (Rs/day)						
All households	84	79	81	--	52	84
Poorest of poor households	78	80	82	--	53	87
Poor households	82	79	81	--	54	78
Not-so-poor households	99	79	82	--	48	84
Nonpoor households	36	78	76	--	47	91
Male wages received (Rs/day)						
All households	80	79	81	--	43	83
Poorest of poor households	85	82	82	--	46	83
Poor households	77	76	81	--	47	83
Not-so-poor households	77	78	80	--	34	80
Nonpoor households	67	79	79	--	32	75

Table 3: Estimates of impacts from program participation

	PHASE 1			PHASE 2 and 3		
Consumption (Rs/year)	943	(377)	**	822	(621)	
Energy intake (Kcal/day)	152	(94)		253	(116)	**
Protein intake (g/day)	2.07	(1.54)		5.80	(2.07)	***
Nonfinancial assets (Rs/year)	772	(403)	*	113	(481)	
Consumption (log)	0.068	(0.042)		0.072	(0.062)	
Energy intake (log)	0.056	(0.036)		0.108	(0.049)	**
Protein intake (log)	0.034	(0.037)		0.127	(0.050)	**
Nonfinancial assets (log)	0.359	(0.118)	***	-0.113	(0.241)	

Notes: All figures in per capita terms. Robust standard errors are in parentheses. Significance level: *: 10%, **: 5%, ***: 1%.

Table 4: Estimates of program participation impacts on scheduled castes and tribes versus other castes

	PHASE 1			PHASE 2 and 3		
Scheduled castes and tribes						
Consumption (Rs/year)	456	(571)		1,700	(717)	**
Energy intake (Kcal/day)	324	(152)	**	399	(163)	**
Protein intake (g/day)	4.46	(2.66)	*	7.72	(2.88)	***
Nonfinancial assets (Rs/year)	1,323	(599)	**	-89	(534)	
Consumption (log)	0.064	(0.066)		0.200	(0.087)	**
Energy intake (log)	0.142	(0.067)	**	0.168	(0.077)	**
Protein intake (log)	0.097	(0.062)		0.171	(0.070)	**
Nonfinancial assets (log)	0.697	(0.202)	***	-0.419	(0.285)	
Other castes						
Consumption (Rs/year)	1,259	(608)	**	-682	(1019)	
Energy intake (Kcal/day)	18	(96)		-5	(170)	
Protein intake (g/day)	-0.11	(1.68)		2.04	(3.06)	
Nonfinancial assets (Rs/year)	548	(627)		198	(868)	
Consumption (log)	0.067	(0.051)		-0.143	(0.091)	
Energy intake (log)	-0.009	(0.047)		-0.006	(0.076)	
Protein intake (log)	-0.018	(0.040)		0.033	(0.068)	
Nonfinancial assets (log)	0.114	(0.137)		0.214	(0.386)	

Notes: All figures in per capita terms. Robust standard errors are in parentheses. Significant level: *, 10%, **, 5%, ***, 1%.

CONCLUSION

Our study looked at the short and medium-term impact of MGNREGS employment on various development indicators in Andhra Pradesh, a state which is widely recognized as having been particularly successful in implementing the MGNREGS program. We find that in the short-term, participants' caloric and protein intakes increased, indicating that one of the most important immediate effects of MGNREGS employment is an improvement in participants' food security and nutrition. Medium-term effects, on the other hand, seem to center around more generalized investments, particularly the accumulation of land. Overall, participants from the scheduled castes and tribes, as well as those who rely on casual labor, benefit most from MGNREGS employment.

We also do not find evidence that the MGNREGS program discourages other forms of employment, as has been suggested by the program's critics. In fact, we find that in Andhra Pradesh, increased expenditures on the MGNREGS program translate almost directly into an increase in additional employment opportunities.

While our findings suggest that the MGNREGS program does have significant positive impacts, it must be noted that this study looked at one of India's better-performing states. Further studies should expand this research to look at other states with weaker implementation records; this would allow researchers and policymakers not only to better understand the program's overall impacts but also to identify specific implementation strategies that would improve the program's success rate throughout the country as a whole.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

2033 K Street, NW • Washington, DC 20006-1002 USA

T: +1.202.862.5600 • F: +1.202.467.4439

Skype: ifprihomeoffice • Email: ifpri@cgiar.org • www.ifpri.org

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