

Evaluation of NREGA Wells in Jharkhand

ANKITA AGGARWAL, AASHISH GUPTA, ANKIT KUMAR

A common criticism of the National Rural Employment Guarantee programme is that it does not lead to the creation of permanent assets and a sustained increase in incomes. This field study of the construction of wells in one block in Ranchi district of Jharkhand shows that asset creation under this programme can result in the creation of income-generating assets.

Krishna Bhagat of Purio Gram Panchayat in Ratu block (Ranchi district) has approximately four acres of agricultural land. Before 2010, he grew only one crop on that plot, paddy. However, in February 2010, he got a well sanctioned for himself under the National Rural Employment Guarantee Act (NREGA), using what he described as his “connections”. He did not have to pay a bribe to get the well sanctioned, but to get it constructed, he did have to shell out Rs 25,000 from his own pocket, to meet material costs. In July 2010, construction of his well was completed, and he used the water from the well to grow lady’s finger and wheat in the winter. When we met him, his summer crops of tomato, beans, and bottle gourd were almost ripe. Apart from Krishna’s land, the well water irrigates an additional four acres of land belonging to others. A piece of land which used to give about Rs 20,000 a year in profits, now gives almost twice that amount.

In the same gram panchayat, Biglah Oraon was also allotted an NREGA well in 2009. The sanctioned cost of the well was Rs 2,26,800, but Biglah had to spend an additional Rs 70,000, because money sanctioned for material expenditure was inadequate, and because he had to pay bribes at various stages. Biglah had to borrow money from his brother as well and use the entire proceeds from selling that year’s paddy crop to get the well completed. On several occasions he had to pay workers from his own pocket too, as wage payments from the block administration were delayed. Despite these losses and other problems, Biglah does not regret his decision of constructing a well; in the acre of land in which he earlier grew paddy, he now sows potato, peas, wheat, sugar cane and tobacco.

A common criticism of the NREGA is the poor quality of assets created under the programme. Gupta (2011), for instance,

argues that instead of creating productive assets, NREGA is a “make-work” scheme. According to a World Bank (2011) report, many public works are said to be “washed away the next monsoon”. The report attributes the inferior quality of public works to the inadequate attention given to the objective of asset creation in the NREGA.

However, there is not much evidence available on the productive aspects of NREGA works.¹ This article presents the findings of an informal evaluation of NREGA wells in Ranchi district (Jharkhand), as a modest contribution towards more informed debate on this subject. To assess the economic impacts of the wells, we compare the construction costs with the productivity gains. This involves comparing the cultivation costs and value of crops grown in the “command area” of the wells before and after construction.² Information on the process of constructing the wells, their diverse uses, and the perceptions of the respondents was also collected.

We focus on completed wells. It is important to note that a significant proportion of NREGA wells in Jharkhand remain incomplete, for reasons ranging from delays in wage payments to inadequate planning and limited capacity of local institutions. Incomplete wells are not only useless and a waste of resources and labour, but also discourage people from taking up water conservation works under the Act (Mahapatra et al 2011).

1 The Survey

The survey, conducted in early March 2012, was based on a small sample of 11 NREGA wells in Purio Gram Panchayat in Ratu block (Ranchi district, Jharkhand). It was an impromptu exercise, conducted on the sidelines of another study in the same area.³ However, the survey questionnaire had been carefully designed and tested earlier. All the sample wells had been completed before October 2011.

The respondents were the well owners (more precisely, the owners of the land where wells were constructed).⁴ All of them were small or marginal farmers. They were asked about the various costs they had to incur while constructing the wells, how they managed to meet this

The authors would like to thank Nikita Arora for being a part of the survey team, and Jean Drèze and Reetika Khera for their helpful comments and guidance.

Ankita Aggarwal (aggarwal.ankita87@gmail.com) is a research scholar at the Centre for Equity Studies, New Delhi, Aashish Gupta is a research scholar at Allahabad University and Ankit Kumar is a research scholar at Delhi University.

expenditure and the amount they were able to recover from the NREGA funds. They were asked about the various crops grown in the command areas of the wells before and after the construction of the wells, the cultivation costs and the value of these crops.

Table 1: Estimated Rates of Return on NREGA Wells (in Rs)

	Average Per Well	Average Per Acre ^a
A Construction cost	1,97,400	n/a
"Usual Value" Method		
B "Usual cultivation costs" before construction of the well	8,425	3,370
after construction of the well	21,988	8,796
C "Usual value of produce" before construction of the well	16,060	6,425
after construction of the well	37,716	15,087
D "Usual profit" (C-B)		
D1 before construction of the well	7,635	3,055
D2 after construction of the well	15,728	6,291
E Increase in average "usual profits" (D2-D1)	8,093	3,236
F Estimated average rate of return (E/A)	4.09%	n/a
"Actual Value" Method		
G "Actual cultivation costs" before construction of the well	5,652	2,261
after construction of the well	21,404	8,562
H "Actual value of produce" before construction of the well	15,198	6,079
after construction of the well	35,488	14,196
I "Actual profit" (H-G)		
I1 before construction of the well	9,546	3,818
I2 after construction of the well	14,084	5,634
J Increase in average "actual profits" (I2-I1)	4,538	1,815
K Estimated average rate of return (J/A)	2.29%	n/a

a Unweighted average of per-acre figures applicable to individual wells.

All rupee figures are unweighted averages for 10 sample wells. For each well cultivation costs, value of produce and profits refer to the entire command area of the well (including plots cultivated by persons other than the owner of the well). For details see text.

Two methods were used to estimate the cultivation costs and the value of the produce grown in the command area. In the first method, well owners were asked to estimate the total cultivation costs and the total value of the produce grown in the command areas in a "normal year" before and after the completion of their wells. Estimates of costs and earnings obtained by this method are referred to as "usual cultivation costs" and "usual value of produce", the difference between them being the "usual profit".

In the second method, owners of the wells were asked to recall all the crops that were grown in the command area

in the year immediately preceding and following the completion of their wells. They were then asked to calculate all the cultivation costs and the value of each of these crops. The sum of all cultivation costs in a year will be referred to as "actual cultivation costs", and the total value of crops as "actual value of produce". The excess of the latter over the former represents "actual profits". While the first method gives an idea of the cultivation costs and value of produce in a normal year, the second method tends to provide more accurate and detailed estimates of the costs and value of the produce.

Aside from the collection of quantitative data, the survey involved detailed discussions with the respondents on the uses of NREGA wells, the hurdles involved in constructing them, and related matters.

2 Impacts of NREGA Wells

2.1 Impacts on Agriculture

The command areas of the NREGA wells may be cultivated not just by the well owners, but by others as well. Data on cultivation costs and outputs obtained from the respondents pertain to the entire command area, not just their own share of it. Before the construction of the wells, the command areas were primarily used for growing paddy (in two cases, another crop was also grown – finger millet and mustard, respectively). After the completion of the wells, wheat, sugar cane, maize, higher-quality rice and a large variety of vegetables were grown. Common vegetables grown in the command areas include peas, beans, tomato and potato. Some respondents also reported growing ginger, onion, cauliflower, lady finger, bottle gourd, cucumber, radish, pumpkin, chilli and garlic. Also, before the construction of the wells, most command areas were sown only once a year because of inadequate irrigation facilities. However, well irrigation has enabled cultivation in two or even three seasons in a year.

The average "usual cultivation costs" before and after the construction of the wells were estimated at Rs 8,425 and Rs 21,988 per year, respectively (Table 1).⁵ The average "usual value of produce", for its part, increased from Rs 16,060

per year to Rs 37,716 per year. Thus, average "usual profit" from crops grown in the command areas increased from Rs 7,635 per year before the construction of the wells to Rs 15,728, per year after construction.

The average "actual cultivation costs", estimated at Rs 5,652 per year before the construction of the well, increased almost fourfolds to Rs 21,404 per year. The average "actual value of produce" more than doubled, from Rs 15,198 to Rs 35,488. This resulted in an increase of almost 50% in average "actual profits" – from Rs 9,546 to Rs 14,084 per year. The main reason for large increases in cultivation costs, value of produce, and profits is the shift towards multiple successive crops and higher-value crops (especially vegetables) after the construction of NREGA wells.⁶

Given that the average cost of construction of the sample wells was about Rs 2 lakh, the estimated real rate of return on NREGA expenditure in these projects was around 4.09% based on the "usual value" method and 2.29% based on the "actual value" method (Table 1).⁷ This is based on assuming that the annual additional profits maintain themselves over the years, which is probably a conservative assumption since the ability of well owners to make good use of irrigation facilities may increase over time. The broad consistency of the two methods is reassuring. In both cases, the rates of return are not very high, yet they do suggest, at the very least, that NREGA wells are largely "self-financing". Also, these rates of return do not take into account other uses of well water, such as drinking, bathing and washing. These are discussed in the next section.

It is important to note that the rates of return presented in Table 1 are averages over 10 wells that have very different rates of return, ranging from negative to 12%. Well-wise details are given in the Appendix (p 27). The variations in rates of return between wells reflect a number of factors such as variations in construction costs, recall errors and the inherent uncertainty of agriculture. This uncertainty is particularly high immediately after the construction of

wells, when the owners are learning to grow new crops.

2.2 Other Uses

The water from NREGA wells is used not just for agriculture, but also for other purposes such as drinking, bathing and washing clothes. Table 2 indicates the number of respondents who reported using the well water for various purposes.

Table 2: Non-Agriculture Uses of NREGA Wells

	Number of Well Owners (Out of 11) Who Use the Well for the Stated Purpose
Bathing	10
Drinking water	9
Washing clothes	9
Bathing animals	7

Although it is difficult to ascribe economic values to these uses of the well water, they are quite important, especially since many parts of Jharkhand have poor access to water.⁸ The well owners certainly seemed to value them a great deal.

3 All Is Not Well

The actual amount spent on the construction of a well is often higher than the sanctioned amount, as the well owner may have to pay bribes to various

functionaries (e.g., gram panchayat secretary or junior engineer), and also because construction material is often underpriced in the technical estimates. Four of the 11 respondents acknowledged having paid bribes at different stages of the construction of their well. The amount varied from Rs 5,000 to Rs 20,000 (i.e., up to 10% or so of the sanctioned amount). The actual number of bribe givers may be higher than four, as some respondents may be reluctant to admit paying bribes.

When actual construction costs are higher than the sanctioned amount, the financial burden is borne by the owner. Seven of the 11 respondents had to spend money from their own pockets for getting their wells constructed.⁹ All except one had no hope of this expenditure being reimbursed. The policy of making well owners pay for material costs and reimbursing them later (after bills and vouchers are submitted) creates serious uncertainties about the actual likelihood and timing of reimbursement. Seven respondents had to borrow money to pay for material and labour costs, by mortgaging their land in four cases.

Delays in wage payments also lead to tensions between the well owners and NREGA labourers. Six respondents even fought with the workers over the delays. The delays often force the well owners to make temporary wage payments to the labourers from their own pockets, a practice that may lead to corruption or disputes. NREGA workers are supposed to be paid directly by the government through their bank or post office accounts. In cases where the workers have received temporary payments from the well owner, they have to reimburse him or her after getting their wages from the government. At that stage, some well owners may try to extract more money from the workers than is due to them, or quarrel with the workers over the amounts due.

4 Perceptions of Owners of Wells

In spite of these and other problems, most of the respondents felt that the construction of the well was a good decision, as the well was a good investment. Interestingly, all the respondents felt that their families had been eating better since the completion of the well, because they were growing more diverse food crops, especially vegetables. Most

India Time Series

www.epwrfits.in

EPWRF's Online Data Base Services

The EPW Research Foundation has introduced an online database service christened as the 'India Time Series', (www.epwrfits.in) as a part of the project funded by the **University Grants Commission (UGC)** and executed by the EPW-EPWRF and the Tata Institute of Social Sciences, Mumbai.

This service is particularly for the benefit of students, research scholars, professionals and the academic community, both in India and abroad.

The service envisages dissemination of data in 16 modules displaying time series on a wide range of macro-economic and financial sector variables in a manner convenient for research and analytical work.

EPWRF has so far released six modules since early 2011-12: (i) Financial Markets; (ii) Banking Statistics; (iii) Domestic Product of States of India; (iv) Price Indices; (v) Agricultural Statistics; and (vi) Power Sector.

Seven more modules will be released soon: (i) Industrial Production; (ii) Finances of Government of India; (iii) Finances of State Governments; (iv) Combined Government Finances; (v) National Accounts Statistics; (vi) Annual Survey of Industries; and (vii) External Sector.

The other three modules, (i) Education; (ii) Health; and (iii) Insurance will be added thereafter.

The demo version can be accessed by free registration. The existing members already registered with us and accessing member services at www.epwrf.in will require no fresh registration. To gain full access, very affordable subscription rates are available on our website.

For any further details or clarifications, please contact: The Director, EPW Research Foundation, C-212, Akurli Industrial Estate, Akurli Road, Kandivli (East), Mumbai - 400 101 (phone: 91-22-2885 4995/4996) or mail: epwrf@vsnl.com

of the respondents were also happy with the quality of the wells.

Two of the 11 respondents felt that constructing the well was a mistake, primarily because they had to spend a considerable amount of their own money in the process. Shanichar Oraon spent about Rs 30,000 from his own pocket, and had to mortgage two acres of land to build the well. Munni Devi, whose well collapsed in the monsoon of 2008 when it was still under construction, was told by the gram rozgar sevak (NREGA functionary at the gram ranchayat level) that the damage would be reimbursed, but it

Table 3: Perceptions of the Well Owners

Number of Respondents (Out of 11) Who:	
Felt that building the well was a mistake	2
Felt that the well has helped them economically	10
Were glad that they had built the well	8
Were happy with the quality of the well	9
Said that they were eating better since the well was built	11
Felt that the well was a headache and regretted building it	3

never was. As mentioned earlier, her family had to spend Rs 1,20,000 to repair and complete the well – a bitter experience. Table 3 summarises the perceptions of the well owners.

5 Conclusions

Completed NREGA wells are clearly useful assets for not only their owners, but also for others who use their water, free of cost. Apart from paddy which used to be the primary crop grown earlier in the command areas, the wells have enabled the cultivation of wheat, vegetables and other crops. The value (net of input costs) of many of these crops grown is higher than that of crops grown earlier, leading to substantial financial gains. The diversification of crops has also improved the diets of the well owners' families (and probably also those of other farmers growing crops in the command area). The wells are also a valuable source of water for drinking, bathing, washing, etc. It can be safely concluded that the criticism of poor quality of NREGA assets does not apply to most of the wells surveyed in this study. This positive finding is particularly significant considering that Jharkhand has had one of the worst records of NREGA implementation (compared with other states) in recent

years: the completion of most NREGA wells, if it happens, will be Jharkhand's first major achievement in this respect.

While completed wells are a source of joy for those who use them, the construction process is usually quite harrowing. Very often the actual construction costs are much higher than the amount sanctioned, and the government rarely pays for the difference. Some well owners have also had to pay bribes at various stages of the construction process. Wage payments for labourers constructing the NREGA wells tend to be delayed, making them turn to the well owners for interim payments. However, the well owners are usually cash strapped themselves as the majority of them are poor and do not receive funds for the material costs on time. But in order to keep the labourers working on their wells, and pay the material suppliers, they somehow arrange for money, usually by borrowing and sometimes by selling or mortgaging assets, including land.

This evaluation is based on a quick survey of NREGA wells in one gram panchayat. It would be useful to carry out similar evaluations in other parts of the country, to understand the benefits of completed NREGA wells as well as the hurdles that prevent their timely completion. Successful implementation of the well construction programme under NREGA would not only boost confidence in the Act, but also lead to the creation of much needed productive assets in rural areas.

NOTES

- 1 On the available evidence, see Narain (forthcoming) and the literature cited there.
- 2 The "command area" of a well is the area irrigated by the well. The command areas of the wells surveyed by us varied from 0.8 to 8 acres.

Appendix: Well-wise Details of Costs, Value of Produce and Rates of Return ('Actual Value' Method)

Name of Well Owner	Before Construction of Well (Rs/Year)			After Construction of Well (Rs/Year)			Cost of Construction (Rs)	Increase in Profits (Rs/Year)	Annual Rate of Return (%) ^a
	Input Costs	Value of Produce	Profit	Input Costs	Value of Produce	Profit			
Rabbit Oraon	900	2,100	1,200	22,790	30,000	7,210	96,000	6,010	6.26
Krishna Bhagat	25,000	60,000	35,000	1,02,000	1,62,000	60,000	2,10,000	25,000	11.90
Mahesh Oraon	5,000	7,975	2,975	7,988	19,800	11,812	1,75,000	8,837	5.05
Munni Devi	2,130	20,000	17,870	5,995	7,726	1,731	2,20,000	-16,139	-7.34
Mangra Munda	5,260	15,000	9,740	10,510	33,450	22,940	1,90,000	13,200	6.95
Shanichar Oraon	2,150	4,200	2,050	5,050	15,400	10,350	1,45,000	8,300	5.72
Vimal Minch	1,600	6,300	4,700	16,150	31,500	15,350	1,89,000	10,650	5.63
Devthan Oraon	1,480	14,400	12,920	19,160	40,260	21,100	1,70,000	8,180	4.81
Biglah Oraon	12,000	20,000	8,000	19,900	2,750	-17,150	3,36,000	-25,150	-7.49
Rameshwar Mahli	1,000	2,000	1,000	4,500	12,000	7,500	2,43,000	6,500	2.67
Average	5,652	15,198	9,546	21,404	35,488	14,084	1,97,400	4,539	2.29

a Assuming that the additional annual profits maintain themselves over the years. See text for details.