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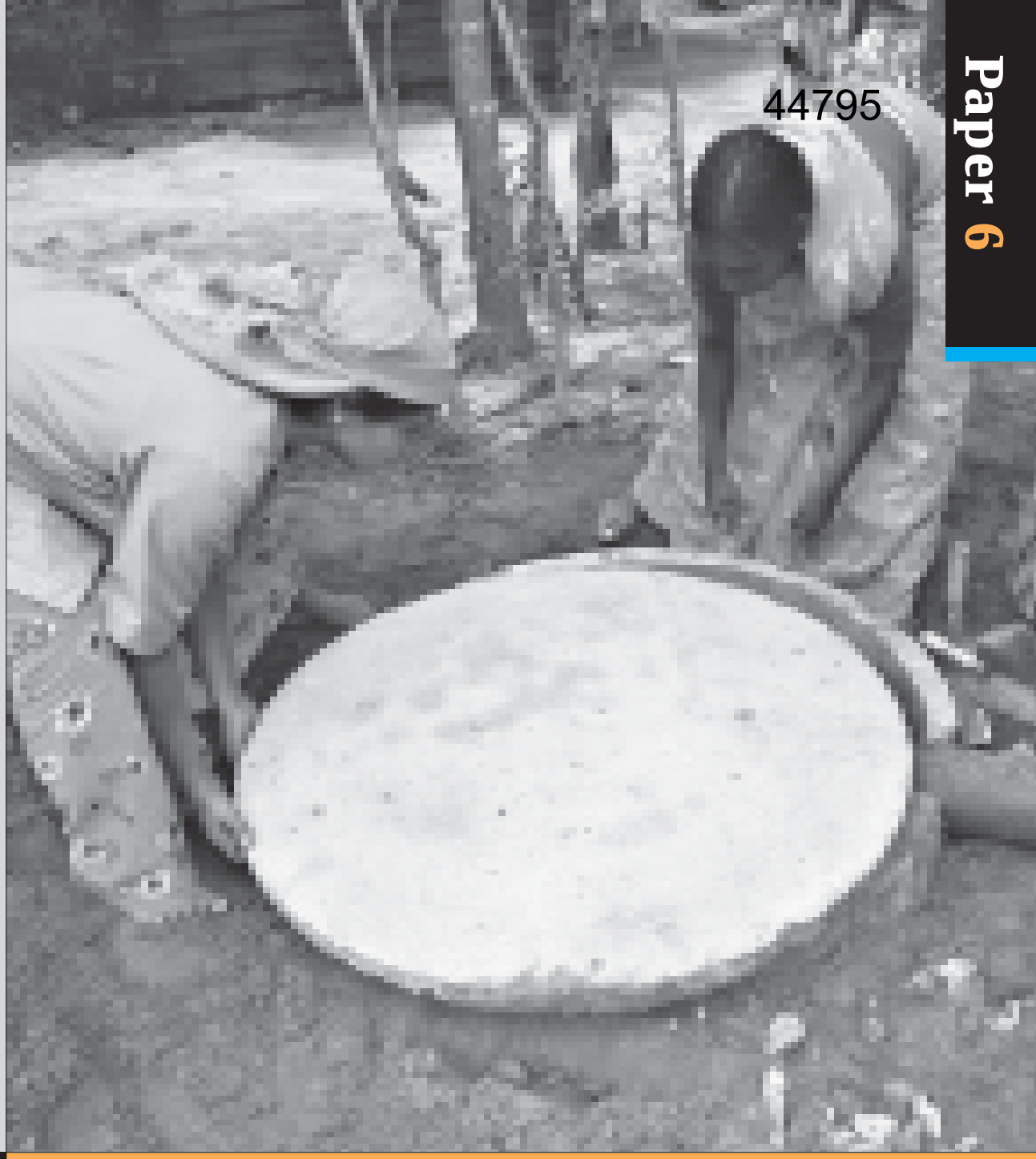
Paper 6



Norms for Rural Water Supply in India

The World Bank

Policy Paper extracted from the World Bank Study on Review of Effectiveness of Rural Water Supply Schemes in India, June 2008

June 2008

Norms for Rural Water Supply in India

Existing Norms

The following norms are currently adopted to provide drinking water to rural people under the Accelerated Rural Water Supply Program (ARWSP):

- Forty liters per capita per day (lpcd) of safe drinking water for human beings
- Thirty lpcd additional for cattle in the Desert Development Program areas
- One handpump or standpost for every 250 persons
- Water source within 1.6 km in the plains and within 100 meters elevation in the hilly areas

Drinking water is defined to be safe if it is free from bacteriological and chemical contamination.

The above norms may be relaxed in a state to provide for 55 lpcd with a source within 0.5 km in the plains and 50 meters elevation in the hills, provided the state had attained full coverage, as per the existing norms of 40 lpcd. This is further subject to the condition that beneficiaries of the relaxed norms will share a part of the capital cost (which should not be less than 10 percent) and shoulder full responsibilities for subsequent operation and maintenance (O&M).

The norm of 40 liters per capita per day for humans is based on the following requirements:

Purpose	Quantity (lpcd)
Drinking	3
Cooking	5
Bathing	15
Washing utensils and house	7
Ablution	10

With normal output of 12 liters per minute, one handpump or standpost is estimated for every 250 persons.

The norms have been established by the Government of India in order to attain a network of facilities to provide an acceptable level of water consumption within a stipulated time frame. The term ‘acceptable level’ is crucial and it has a two-fold rationale. First, competing demand for greater investment in other sectors has left relatively small allocation for the domestic sector. In the face of resource constraint, the tendency was to impose economy measures. Second, the wide inter-state differences in the provision of rural water supply services and infrastructure requires governmental

Table 1 Average Number of Rural Households Sharing an India Mark II/III Handpump or a Standpost

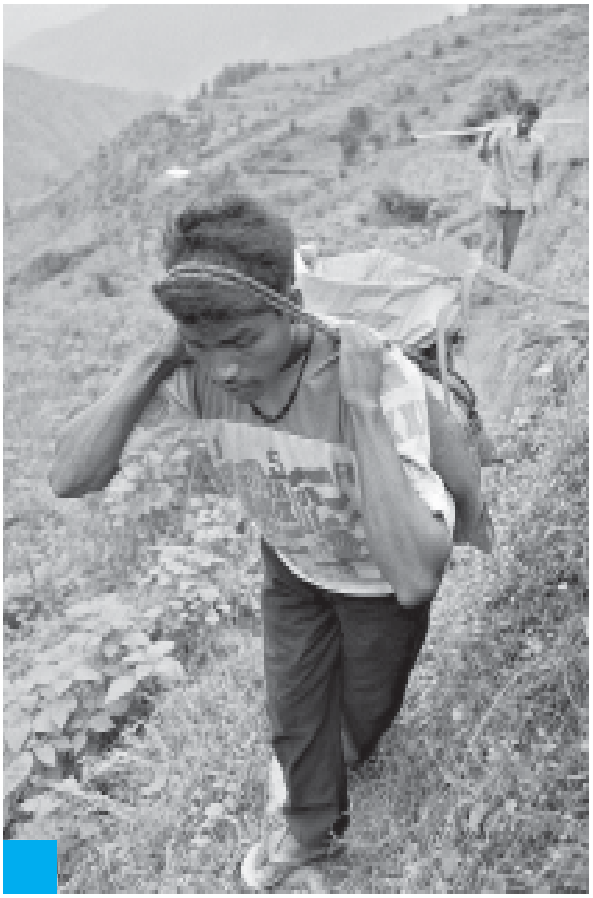
Average number of households sharing:	Andhra Pradesh	Karna-taka	Kerala	Maha-rashtra	Orissa	Pun-jab	Tamil Nadu	Uttar Pradesh	Uttara-khand	West Bengal
Deep-bore public handpump	26	66	35	25	31	20	18	12	26	42
Standpost in a piped water scheme	16	25	12	12	24	16	16	11	11	31

Source: Household survey.

intervention. Thus, standard norms have been fixed for the provision of rural and urban water supply service.

The current central rural water supply norms govern all central programs and are mostly adhered by state sector programs. However, as mentioned above, once the task of providing every habitation with safe drinking water source is completed as per the national norms of 40 lpcd in the entire state, the state governments may consider the relaxation of norms subject to the condition that the beneficiaries of the relaxed norms are willing to share a part of the capital cost and shoulder full responsibility of the subsequent O&M and replacement, so as to meet their enhanced service expectations.

This liberalization of norms is a key component in the design of demand-driven programs, where the consumer is able to give a voice in the service level, if s/he is willing to pay.



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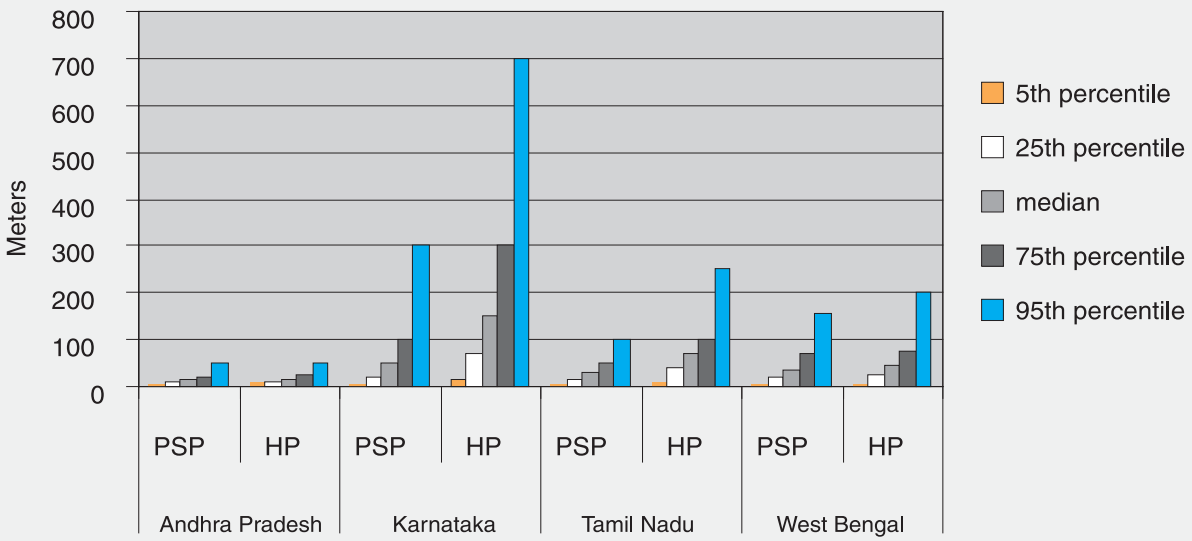
Sharing of Public Sources

The number of households sharing a handpump or a standpost is commonly much lower than the norm (250 persons or 50 households) (Table 1). This is revealed by the survey carried out for the 10-state study on the *Effectiveness of Rural Water Supply Schemes* undertaken by the World Bank at the request of the Government of India. This is particularly noticed for Uttar Pradesh. In Uttar Pradesh, on an average only 11–12 households share a handpump or a standpost; indeed, in some cases (10 percent), four or less households share

Figure 1 Distance to Public Standposts (PSP) and Handpumps (HP)



Source: Household survey.

a handpump. In contrast, in Karnataka, on an average 66 households share a handpump (obviously causing considerable inconvenience), while on an average 25 households share a standpost. In Kerala and Uttarakhand, 35 households and 26 households, respectively, share a handpump. The corresponding figures are lower for Andhra Pradesh, Maharashtra, Punjab, and Tamil Nadu (26, 25, 20, and 18 households per handpump, respectively).

The number of households sharing a standpost in Maharashtra, Kerala, and Uttarakhand is about the same as in Uttar Pradesh. In Andhra Pradesh, Punjab, and Tamil Nadu the average is higher, though lower than the number of households sharing a standpost in Karnataka. In 7 out of the 10 states studied, the average number of households sharing a standpost is in the range of 11 to 16, which is much less than the norm.

It is evident from this that Karnataka is an exception regarding the sharing of public handpumps. However, this has serious repercussions on the quantity of water each household is able to access from the source, since a higher proportion of households using handpumps complain of inadequate water availability. There is also an issue of distance to the source (Figure 1).

The fact that the number of households sharing a public source is much lower than the norm shows that rural people want a far better service than what a sharing of source according to the norm would imply. The norm of 250 persons

per standpost is based on the assumption of output of 12 liters per minute. But, a majority of standpost users covered in the survey reported that the water pressure is low and the time taken to fill a 10 liter bucket is usually three minutes or more. With such low pressure and limited hours of supply (say, one to three hours in a day), it would not be possible for rural households to get 40 lpcd (or even get 20 lpcd) if 50 households have to share a standpost. There is a similar problem with handpump schemes. A handpump needs to be operated continuously for 10 hours in a day if 50 households dependent on it have to collect 40 liters per person. It is unrealistic to assume that a handpump will be accessed for 10 hours in a day, and that it will be used continuously for those hours.[1]

Evidently, questions may be raised about the norms governing the handpump schemes. It is no surprise that, in most cases, handpumps are shared by 30 or fewer households rather than the norm of 50 households or 250 persons.

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Traveling Distance

Compared to African countries, India allows far greater traveling distance to the public water sources. The existing norm of 1.6 km in the plains and within 100 meter elevation in the hilly areas is on the high side. As observed in many studies, it is very difficult for women to carry water over long distances. The survey data reveal that the distance to public sources are commonly very small (Figure 1), as the public source is commonly available within 100 meters. It is only

[1] *India: Water Supply and Sanitation: Bridging the Gap between Infrastructure and Services*, World Bank, 2006, Background Paper, Rural Water Supply and Sanitation, Page 35.

in Karnataka that the distance is somewhat higher. But even in this state, the public sources are available within 300 meters in most cases. Some households of Karnataka using public handpumps have to travel a distance of over 700 meters to collect water. The Rajiv Gandhi National Drinking Water Mission (RGNDWM) is considering a revision in the distance norm and reducing it to 500 meters. This would corroborate with the existing situation.

Piped Water Supply Schemes

For piped water supply schemes, a norm of 40 lpcd implies that the service will be provided mostly or entirely through standposts. This is not consistent with what the rural households want. And, this inconsistency will become greater as the incomes rise in the rural areas.

The findings of the survey indicate that a large section of the rural people would like the convenience of a piped water supply connection in the house. This may be seen from a comparison of design and actual number of private connections in piped water schemes. In several states, the actual number of private connections exceeds the design by a substantial margin. In a number of schemes surveyed, the actual number of private connections is found to be about three times the design, which shows that many new private connections have materialized after the scheme came into existence.

The willingness to pay for improved services is about Rs 60 per month among private connection users. The handpump users of Karnataka, Maharashtra, Punjab, Tamil Nadu, and West Bengal are willing to pay in the range of Rs 30 to Rs 44 per month for using a private piped water connection.

Evidently, there is a strong demand for private piped water connection in the rural areas, and this is in conflict with the prevailing norms of rural water supply.

In the relatively more developed states, difficulties would be found in implementing piped water schemes if the norm of 40 lpcd has to be strictly

adhered to. In the course of studying good practice cases of rural water supply in India, several examples were found where there was a conscious attempt by the community that the service level should be a 'private tap' and not a 'standpost'. It was felt that if service is provided at standpost level, then the offtake by different households cannot be accounted for, and the leakage/wastage cannot be controlled.

However, the distribution needs to be fair. Thus, in one of the good practice examples, the household could connect to the scheme through a single tap connection in front of the house, and was not allowed to take pipe connections inside the house and avail water from multiple taps. Nor are households allowed to connect supply water to a storage tank.

These measures ensure that the households do not tap more water than the scheme is designed to provide. This is again an evidence of the desire of rural households to avail a higher level of services than implied by the prevailing norms.

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Revision of Norms

A working committee has been set up by the RGNDWM in 2002 to review the urban and rural water supply norms. The RGNDWM has raised the issue of liberalizing norms with the state governments, and discussions are ongoing. These include consideration of the following: (a) once the coverage is achieved as per present norms, these would be liberalized to provide 55 lpcd of safe drinking water for human beings; (b) one source will be provided for every 150 persons, there being no specific limit in the case of isolated SC/ST habitations,

so as to ensure one safe source for the vulnerable section of the society, irrespective of their population in the habitation; (c) the new norm of providing one source within 0.5 km in the plains and 50 meters elevation in the hills; and (d) in case of higher service level, the cost sharing principles need to be determined.

The 10-state study on the *Effectiveness of Rural Water Supply Schemes* underscores the need to move towards 'flexible norms' for service delivery. The 'fully' covered, 'partially' covered, 'not' covered classification tends to encourage inadequate O&M as 'slippages' from 'fully' to 'partially' covered status often lead to the construction of a new system to replace the poorly maintained existing system. The perverse incentive that the present system creates could be checked by adopting flexible norms for service delivery. The existing Government of India norms (40 lpcd within a 1.6 km distance and 100 meter elevation) could still be used to measure achievement towards the 'fully covered', but often do not correspond to what rural households desire and are willing to pay for. The study shows a clear preference for domestic connections and willingness to pay for piped water. Hence the rural communities should be offered a higher level of service, subject to availability of water and willingness to contribute through user charges that recover the O&M and partial capital costs.

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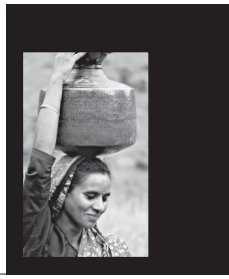

Policy Papers

This is one of the six policy papers that have been prepared on the basis of the World Bank study on Review of Effectiveness of Rural Water Supply Schemes in India (June 2008). These policy papers, published along with the Report, are on the following themes:

Paper 1: Willingness of Households to Pay for Improved Services and Affordability
Paper 2: Inefficiency of Rural Water Supply Schemes in India
Paper 3: Multi Village Water Supply Schemes in India
Paper 4: Operation and Maintenance Expenditure and Cost Recovery
Paper 5: System of Monitoring and Evaluation
Paper 6: Norms for Rural Water Supply in India

This Report has been prepared by Smita Misra (Sr. Economist, SASDU, World Bank), the Task Manager of this study.

The study was carried out under the overall guidance of Sonia Hammam, Sector Manager, Water and Urban, SASSD, World Bank. Data analysis has been undertaken by Professor B.N. Goldar and his research team at the Institute of Economic Growth, Delhi and the consumer survey was carried out by the ORG Centre for Social Research (a division of A.C. Nielsen ORG MARG Pvt Ltd). Comments and inputs at various stages of preparation from the following World Bank persons are gratefully acknowledged: Michael Carter, Rachid Benmessaoud, Clive G. Harris, Alain R. Locussol, Francis Ato Brown, Alexander E. Bakalian, Oscar E. Alvarado, G.V. Abhyankar, R.R. Mohan, S. Satish, N.V.V. Raghava, and Catherine J. Revels (WSP-SA). Special thanks are due to the Department of Economic Affairs, Ministry of Finance, the Department of Drinking Water Supply, Ministry of Rural Development, and the Rajiv Gandhi National Drinking Water Mission for their interest and collaboration in the study. Comments and data inputs during the preparation of the Report are gratefully acknowledged from R.P. Singh and M. Nagaraju (DEA), Bharat Lal and R.K. Sinha (RGNDWM) and their team, and the respective State Government officials.

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Author and Task Manager: Smita Misra (Sr. Economist, SASDU, World Bank

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The World Bank, New Delhi Office, 70 Lodi Estate, New Delhi 110 003, India
Tel: (91-11) 24617241, 24619491