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SUSTAINABLE WATER AND SANITATION SERVICES
FOR ALL IN A FAST CHANGING WORLD

A bridge too far: an analysis of WASH KAP study from four Indian states

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In India though there has been improved WASH coverage in the last decade but yet only 35% of the population have access to drinking water within the premises and 600 million people continue to defecate in open. To understand challenges and analyze gaps in the knowledge and practices a facility survey and KAP study was conducted in one urban and three rural locations across four Indian states. The findings indicate that only 18% of the population have access to safe drinking water within premises, 86% of the population still practice open defecation and underlying causes are functional, physical and attitudinal barriers. Though there is improved awareness on key hygiene indicators, a huge gap remains in actual practices. A key finding indicates that 86 % of respondents are willing to construct toilet within households, which means people are willing to adopt improved practices if an enabling environment and required knowledge are ensured.

Introduction

In India the flagship national programme on sanitation and water supply continue to provide excellent frameworks for rural sanitation and drinking water through the provision of adequate finance, basic technical guidelines, and institutional incentives. However Water and Sanitation being the responsibility of provincial governments, allows considerable latitude in how these resources and mechanisms are used which results in highly variable outcomes across provinces (Andy Robinson - 2012). As per the JMP UN/WHO update report-2013 "Over 600 million people or 50 % of Indian population defecate in the open, without using a toilet or latrine. While 87% of the households at the national level use improved sources for drinking water, only 35% have the source of water within their premises. At least 22% of households still have to fetch water from a source located within 500 meters in rural areas and 100 meters in urban areas (Census 2011). UNICEF estimates that unsafe or inadequate water, sanitation, and hygiene (WASH) practices are causative factor for more than 90 percent of deaths from diarrhoeal illnesses in young children. (UNICEF 2012). Cairncross et. al. (2010) is of the view that both quality and quantity of water, proper sanitation and hand washing practices are of importance in reducing the prevalence of diarrhoea occurrence. Access to safe water in many parts is emerging as a key issue, Arsenic contamination has been widely reported in 9,504 habitations spread across 9 states in India, fluoride contamination in 33,363 habitations in18 states (MDWS Discussion paper 2011) and, more than 50% of water sources are prone to bacteriological contamination. Another key issue is at school level, where lack of access to adequate WASH facilities, has significantly affected children attendance in school particularly that of girls. Against this back drop Save the Children India conducted an in depth WASH KAP study to establish current knowledge, attitude and practice benchmarks with respect to WASH and to identify enablers and barriers to improve access.

Methodology

A quasi-experimental research design was adopted for conducting the study in the states of Delhi, Bihar, Jharkhand and West Bengal. Quantitative and qualitative research methodologies were deployed for assimilating and synthesizing information at the ground level. Around 1200 beneficiaries/households were

interviewed and this was accompanied by the survey of facilities in the program areas. In addition, the research methodology included focus group and in-depth discussions with 39 key stakeholders including state, district, block and village level government officials responsible for planning, implementation and monitoring water and sanitation program/ schemes at respective level.

Table 1. Quantitative sample size covered

States	District	Program block	# of samples	Village profiling
Bihar	Sitamarhi	Riga	302	10
Jharkhand	Dumka	Saraiyahat	299	10
W.Bengal	North 24 Parganas	Barasat-II	299	13 (10+3)
New Delhi	North East & South	-	300	10

The study's primary focus is on marginalised community. This comprises of migrant population working in the brick kilns of West Bengal, Tribal and Scheduled cast communities from Jharkhand and Bihar and urban poor from slums of Delhi. The aggregate socio-demographic profile indicates that majority of the respondents (50%) depend on unskilled work for their livelihood and live in Semi-Concrete (Pucca) or thatched (Kaccha) houses. On an average, the percentage of households belonging to Below Poverty Line (BPL) category is highest in Bihar (59%) and Delhi (58%).

Key results and discussion

The study was carried out in three rural and one urban locations, covering 20 villages, 13 brick kilns and 10 slums in the four North Indian states. An in depth analysis of facilities as well knowledge and practice was carried out to understand the major impediments of sustained WASH services across the four locations. The analysis reflects following key findings.

Drinking water availability, access and collection practices

The findings reveal that only 18% of the target population has access to water sources with-in their household premises, while the rest 82% of the population is dependent on public water sources. Delhi and Jharkhand have the highest dependency on public sources whereas in Bihar due to the Gangetic alluvial aquifers, 65% respondents have access to water sources in their households. The findings, based on community perception where they relate water quality with depth of the source, indicate that access to improved source of water is around 48%. The average time spend to fetch water is 22 minutes while the average distance from the household to water source is 47 metres. Safe handling of water during transportation is also critical to ensure safety of water but only 75% households in Delhi observe safe practices. The key findings as given in Table 2 indicate that though the intervention states have good ground water potential but efforts are needed to improve household level access, quality of water and proper water handling during transportation.

Sanitation

The findings presented in Table 3 reflect that open defecation is widespread in all the rural locations. The four targeted locations largely represent poor and marginalised communities, reflect similar trends as reported by the WHO/UNICEF Joint Monitoring Progress report (2012) for Water Supply and Sanitation where the poorest 40 per cent of the population in South Asia including India have barely benefited from improvements in sanitation. The population in urban slums and brick kilns use community toilet complexes as this is the only available option. Though community facilities are generally preferred by women, in West Bengal there was a concern regarding adequacy and the unsanitary condition of toilet seats while safety was a major concern voiced out by female community members in Delhi. Analysis shows that open defecation are linked to physical barriers that means there is no toilet facility or lack of space for construction of toilet, functional barriers indicate non-availability of government subsidy or financial issues to construct toilet and attitudinal barriers indicate that either people are habituated to open defecation or it is cumbersome for them to use toilet. At an aggregate level 45% of the respondents citing physical barrier,44% citing functional

barrier and 32% citing attitudinal barrier as the reason for open defecation. Though only a limited number of households has access to toilet facilities, a large proportion expressed a willingness to construct a toilet with in household. The causative analysis with marginalized community clearly reflects that better information and data on addressing physical, functional and attitudinal barrier of latrine construction can improve the access. State wise sanitation options are presented in Table 3.

Table 2. Availability, access and water collection practices

	Aggregate	Bihar	Jharkhand	W.bengal	Delhi
Access to water with in premises (%)	18	65	05	0	4
Water access away from premises (%)	82	35	95	100	96
Dependency on public water source (%)	81	35	95	100	96
Dependency on private water source (%)	19	65	5	0	4
Out of all sources, % of improved water source	48	30	90	1	90
Adequacy of water sources throughout year (%)	92	97	85	95	93
Time to collect water (minute)	22	11	20	10	42
Distance travelled to fetch water(m)	46	66	69	10	42
Adult woman collects water (%)	90	88	94	93	85
Female child collects water (%)	2	6	2	2	2

Table 3. Sanitation options used by percentage of households

	Aggregate	Bihar	Jharkhand	W. Bengal	Delhi
% household have access to a household toilet	14	27	2	0	26
% household doesn't have toilet facility	86	73	98	100	74
% of open defecation among men	64	100	100	34	21
% of open defecation among women	58	100	100	22	9
Community toilet used by men (%)	35	00	00	66	74
Community toilet used by women (%)	40	00	00	77	84
Shared toilet used by men (%)	1	0	0	0	6
Shared toilet used by women (%)	2	0	0	0	8
% of households willing to construct toilet	86	97	89	97	57

School WASH facility assessments

Safe and child-friendly water, sanitation and hygiene (WASH) in schools improves health, boosts educational achievement, promotes gender equity and has a positive impact on communities. However, the findings clearly reflect that the poor maintenance of toilets, inadequacy of facilities and non-provision of hand washing facility and running water are issue of concern in the surveyed schools. Soaps are not available in 80 % of the schools in Bihar, 90% Jharkhand 100%W.Bengal and 80% in Delhi. Furthermore hand washing facilities are not available in 80% of the schools in Bihar, 90% in Jharkhand, 40% in West Bengal and 60% in Delhi while out of four states, running water facility is available only in 40% schools of

Delhi. The ASER 2013 reports also indicates that only 62.2% rural schools have useable toilets, indicating a need to aggressively address issues of usage and operation and maintenance.

Table 4. Status of school sanitation blocks

Students/no. of toilet seats & Urinals	Bihar			Jharkhand			West Bengal			New Delhi		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
No of students	2748	2867	5615	422	458	880	989	1227	2216	3446	5741	9187
No. toilet seats	6	11	17	7	7	14	16	2	18	22	59	81
Average load	458	261	330	60	65	63	61	613	123	157	97	113
No. of urinals	8	-NA-	-NA-	0	-NA-	-NA-	25	-NA-	-NA-	19	-NA-	-NA-

Hygiene behavior

Variation between attitude and practice for hand washing

Study conducted among women reflects high level of awareness on hand washing at critical times (after defecation, before eating, and after cleaning children's stool) however it has not completely translated into a practice. Only 59% of respondents wash hands after defecation and only 28% respondents wash hands with soap before eating food. The state wide data reflects a huge gap between attitude and actual practices in rural areas but is comparatively better in the urban locations of Delhi. The findings also reveal that 93% respondents in Delhi, Bihar and West Bengal understand the critical linkage between hand washing with soap and reduction of diseases. As evident from school data in the above section the gap between attitude and practice is attributed not only to hygiene education but also to lack of proper hand washing facilities and non-availability of soaps.

Table 5. Variation between attitude and practice for hand washing

Hand Washing	Aggregate%		Bihar%		Jharkhand%		W. Bengal%		New Delhi%	
	Attitude	Practice	Attitude	Practice	Attitude	Attitude	Practice	Attitude	Practice	Attitude
After defecation	99	59	100	67	100	20	100	54	98	88
After washing child's bottom	95	77	100	96	99	59	95	66	95	87
Before eating	92	28	78	29	99	2	99	6	92	76
Before cooking	89	22	74	19	98	1	99	2	87	66

Water storage and handling practices

Study reveals that at an aggregate level only 74% of the target population cleans the water storage vessel; around 21% stores water at an elevated place and 48% follows correct practice of water withdrawal and also only 48% cover the vessel completely. In comparison to urban the rural locations reflects a lower percentage of proper storage and water withdrawal practices, this makes them vulnerable to water borne diseases. Hence a proper communication strategy targeted to the specific populations is necessary to improve the practice.

Awareness of water treatment methods - knowledge and practice indicator

Boiling of water, straining through a cloths, chlorination and household level filter are some of the treatment practices used at community level. At an aggregate level, 64%of the respondents knew at least one correct

method of treating the drinking water. Boiling the water was reported to be the most common practice for treating the drinking water. In the analysis of awareness level on water treatment methods and practice adopted for water treatment, it was observed that adoption of correct water treatment practice was low. State-wise analysis depicts, that in rural areas the adoption of correct water treatment practice was below 5% among those who knew at least one correct method of water treatment while in urban area, among 74% of the respondents who knew about correct water treatment practice, 21% claimed to have adopted the practice. Though chlorination is promoted by government as water disinfectant but anecdotal evidences suggest that lack of capacity and priority of front line health workers are the reason that still it is not widely used at household level.

Diarrhoea management

As part of this study, attempts were made both in rural and urban locations to understand community understanding on the reasons, symptoms and treatment of diarrhoea. In all 501 respondents who have children less than 5 years from all four locations were interviewed. The findings reveal that at an aggregate level, unclean food, dirty hands and contaminated water were cited as the main reasons of diarrhoea in the program areas. Most importantly the association of drinking water with diarrhoea appears weak as only one third of women in the programme area, identified contaminated water as one of the causes of diarrhoea. About 38% women of Bihar are not aware of the causes of diarrhoea. The critical symptoms of the diarrhoea at the aggregate levels were reported to be vomiting (80%) and loose watery stools (71%).

Table 6. Main causes of diarrhoea as perceived by community

	Aggregate	Bihar	Jharkhand	W. Bengal	New Delhi
Unclean food	54	32	59	81	44
Dirty Hand	45	33	42	65	40
Contaminated water	32	37	35	5	53
Poor diet of food	23	27	31	18	8
Overeating	20	13	35	8	23
Seasonal change	13	8	5	22	21
Bacterial infection	7	10	2	2	17
Bowel disorder	5	0	5	8	8

Preferred medication for child diarrhoea

According to WHO guidelines ORS and Zinc therapy should be the first line of treatment in case of child diarrhoea. However, at an aggregate level only 15% of the respondents reported awareness of ORS and Zinc therapy. Awareness was high in Bihar (42%) followed by Delhi (18%) whereas in Jharkhand and West Bengal it was 3% and 1% respectively. At an aggregate level, majority of the mother practice homemade fluids and ORS as the treatment of child diarrhoea. Around 86% mentioned using ORS for treatment in Delhi and 71% in Bihar whereas around 30% in Jharkhand and West Bengal.

Conclusion and recommendation

The findings from the four Indian states indicate that if country intends to achieve the vision of Nirmal Bharat (sanitized India) by 2022, ending widespread open defecation and pursuing feasible methods of safe excreta disposal especially amongst poor and marginalized communities must be top policy priorities for India. Though the access to sanitation is extremely poor, the findings indicate that majority of population have shown willingness to have toilets if underlying causes of physical, functional and attitudinal barriers are properly addressed. Hence along with targeted investments in communities and individuals on intense hygiene education, the focus should remain on improved fund flow from dedicated govt. programme,

transfer of technical knowledge to construct quality toilets and strengthening of supply chain to meet the demand for construction.

The study has established a bench mark on the current practices of hand washing, water collection, transportation, storage and retrieval of water. It has also established a clear gap between awareness and actual practices. Hence implementation of an effective communication strategy must be a prerequisite to improve water handling practices and to prevent secondary contamination of drinking water.

In geographies with good ground water potential there is a need to work on water quality issues to ensure safe access of drinking water.

There is also need to incorporate health messaging as a motivator for both uptake of sanitation and improved hand washing behaviours at appropriate times during the implementation process.

India may not be able to achieve its national goal to provide every person with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis and hygienic sanitation facilities for all unless it is supported by strong enablers to translate awareness and knowledge into actual practices.

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