Review Paper

Public finance at scale for rural sanitation – a case of Swachh Bharat Mission, India

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ABSTRACT

In 2014, the Indian Government embarked on a major programme to end open defecation. The government allocated significant public funds to ensure that the goal is reached by the year 2019. The Swachh Bharat Mission (SBM) programme for rural sanitation is ambitious and probably no government has ever attempted to tackle sanitation at this scale and with such a large financial commitment. The main objectives of this paper are to assess sufficiency of financial commitments for SBM and to review efficiency and effectiveness in fund utilization against its stated objectives. In a large country like India, the programme achievements are not even. Some states are on track while others will need more attention and more funds to ensure that the goal is reached by 2019. An important challenge is to ensure sustainability of open defecation free (ODF) villages and communities. Supplementing public finance with innovative financing is needed to ensure that lack of finance does not become a constraint in achieving the ODF status and to ensure sustainability.

Key words | India, open defecation, public finance, sanitation, Swachh Bharat

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INTRODUCTION

India has had the dubious distinction of having the highest number of people defecating in the open. WHO & UNICEF (2017) reported that as of December 2015, 892 million people worldwide still practice open defecation. Of these, 524 million are estimated to be in India. India with 26% of the global population has a 60% share of global open defecation. Over the last decade, the Government of India has made significant efforts to improve the sanitation situation in India's villages. The Swachh Bharat Mission *Gramin* (SBM-G) is an ambitious programme that envisages making rural India open defecation free (ODF) by October 2019. It has high level political commitment from the Prime Minister.

While the SDG Target 6.2 aims to end open defecation by 2030, India wants to achieve this by 2019. The SBM-G programme not only aims to eliminate open defecation but to also provide safely managed sanitation and promote overall cleanliness in villages, through improved solid and liquid waste management (SLWM).

> '*To accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation, the Prime Minister of India, Shri Narendra Modi, launched the SBM-G on 2nd October 2014. The Mission aims to achieve a Swachh Bharat by 2019, as a fitting tribute to Mahatma Gandhi on his 150th birth anniversary*' (SBM 2017).

doi: 10.2166/washdev.2018.002

The main objective of this paper is to assess sufficiency of the financial commitments made by the government for SBM-G. The paper reviews efficiency and effectiveness in fund utilization against its stated objectives, and traces regional variations. The analysis is based mainly on the monitoring and public reporting system of the MDWS. The paper is based on information accessed up to May 2017.

SBM PROGRAMME FRAMEWORK AND OVERVIEW OF RESULTS

The SBM programme has various components that include incentives to households for construction of toilet and hand washing facilities and behaviour change communications. Table 1 shows various components and associated allocations of each component. The overall programme cost in 2014 was estimated to be USD 21 billion.

The main components of the programme are incentives to households (60%) for individual household latrine (IHHL), information education and communications (IEC) (8%) and support for SLWM (27%) for Gram Panchayats (GPs) – the village level local governments. An incentive of USD 188 is given to a household for a toilet. This is designed as an output-based aid. The incentive is given to a household after toilet completion, and in some states only after sustained use of the new toilet. This incentive grant is provided to all below poverty line (BPL) families as well as other marginalized groups. Together these add up to 88 million households as per the 2012 baseline survey, or 80% of those without toilets (MDWS 2017g).

Table 1 | Total programme costs: SBM-G

Component	Units	Total costs (in USD million)
Incentive for toilet (individual household latrine – IHHL) at USD 188 per household	68.4 million	12,832 (60%)
Community sanitation complexes	114,313 complexes	357 (2%)
SLWM for Gram Panchayats (GPs)	250,000 GPs	5,708 (27%)
Information, education and communication (IEC)	At 8%	1.680 (8%)
Administration	At 2%	420 (2%)
Total programme costs for MDWS	–	**20,998** (100%)

Notes: (a) This is based on an exchange rate of 1 USD = 64 Indian Rs (INR), which is used throughout the paper. (b) In addition to these cost estimates, USD 4.3 billion was also estimated for the Ministry of Rural Development by convergence with the Mahatma Gandhi National Rural Employment Guaranty Scheme (MGNREGS) and for schools through the Ministry of Human Resource Development. However, this paper has not analyzed these as detailed financial data were not easily available.

Sources: Based on MDWS (2014a, 2014b) and based on Niti Aayog (2015) for IHHLs, Table 1, p. 6.

The SBM programme is an initiative of the national government and is coordinated by the MDWS. However, responsibility for its implementation is with the state and rural local governments. The state governments are also expected to contribute finances for its implementation. The proposed programme costs are distributed among the central, state governments and beneficiaries or communities as per the SBM programme design. A major change was made in 2015 when the state government share in fund allocation was increased from 25% in the original programme design to 40%.

The main aim of the SBM programme of making India ODF by October 2, 2019 is sought to be achieved by mass mobilization and toilet construction. While the main output of the programme is toilet construction, emphasis is placed on the outcome of making villages, Gram Panchayats and districts ODF. Government of India has set out a definition of ODF, but the process of declaring an area ODF has been left to the state governments. This is being monitored regularly by MDWS and reported on the SBM-G website. Several states have also developed detailed verification guidelines.

There is extensive reporting by MDWS, both on key physical outputs and outcomes of the programme.

> *'SBM-G MIS captures the household data of over 18 crore (180 million) households as per the baseline survey. Individual mobile phone number is used to generate text message after the construction of toilet is reported on the system. Beneficiary can revert back/reply through text message on whether toilet has been constructed in his/her house. SBM-G dashboard has also been developed to monitor the programme at National, State and District level with various KPIs for tracking Individual Household Latrine (IHHL) and ODF status. It also*

shows progress of the programme on interactive maps' (MDWS 2017a: pp. 70–71).

Such extensive and real-time monitoring and reporting make it possible to assess performance both at the country level and across various states. MDWS has also now initiated household survey-based assessments. These will help to assess and verify ground level achievements.

Table 2 provides an overview of performance on the key programme outcomes and outputs – both ODF villages and toilet construction as of April 2017. One-third of total villages had become ODF by mid-2017. Progress on toilet targets is better at over 45% and the household sanitation coverage had already reached 67% by August 2017, halfway through the programme period. However, a component of SBM-G with poor performance is SLWM. Of the 250,000 GPs targeted initially, work has started in only 3,000 GPs.

Table 2 | Programme outputs and outcomes: SBM-G

Output/Outcome	Total targets	Achievements (April 2017)	% to total targets
ODF villages	606,308	200,839	33.2
ODF Gram Panchayats (GPs)	257,357	92,372	35.9
ODF districts	678	139	20.5
Individual household toilets			
MDWS	68 million	40.2 million	45.5
Convergence with MoRD	20 million		
Household sanitation coverage	100%	64.0%	–
Sanitary complexes	114,313	5,865	5.1
SLWM	250,000 GPs	3,000 (partly)	1.2

Sources: For ODF villages, GPs and districts: From SBM-G website – retrieved from: http://sbm.gov.in/sbmreport/Report/Physical/SBM_VillageODFMarkStatus.aspx on May 20, 2017.
For individual toilets: Based on information from the MDWS website, accessed April 14, 2017: http://sbm.gov.in/sbmreport/Report/Physical/SBM_IHHLProgressWithMGNREGA.asp.
For household sanitation coverage: Based on data retrieved from SBM-G website April, 2017: http://sbm.gov.in/sbmreport/Report/Physical/SBM_Target_Vs_Achievement.aspx. The coverage had reached 67% by August 18, 2017. The analysis in this paper is based on the April 2017 information.
For SLWM: From data accessed on July 11, 2017 from the SBM-G website at http://sbm.gov.in/SBMReport/Report/Panchayat/SBM_SLWMExpenditureAchievement.aspx. Adequate details are not available for the nature of activities being taken up for SLWM. The coverage of 3,000 GPs only suggests that some solid waste or liquid waste activities have been taken up.

PUBLIC FINANCE FOR SBM

The ambitious SBM-G programme has been backed by adequate public finance. In this section we assess the budget allocations, and efficiency in fund utilization.

Budget allocations and utilization

The SBM-G programme is placed within the MDWS and is funded through budget allocations by the central government. The funds allotted are to meet MDWS's envisaged share of 60% of the total programme costs.

Sanitation has been a part of the MDWS mandate but received very little funding until 2014. With the announcement of SBM-G in 2014, the share of sanitation increased dramatically from 19% in 2012–13 to 70% in the 2017–18 budget (see Table 3). In absolute terms, the allocation increased from USD 387 million to USD 2,179 million, showing a nearly 300% increase over four years. Along with this increase for sanitation, funds for rural drinking water decreased.

Besides MDWS, funds are also expected for SBM from other ministries of Government of India. Nearly 15% of the total programme cost is expected from the Ministry of Rural Development as one-fifth of the toilet targets are expected to be met through convergence with Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other rural housing programmes. The fund requirement for 20 million toilets is estimated to be about USD 750 million per year. The total annual budget allocation for MGNREGS in 2017–18 is USD 7.5 billion. Thus, about 10% of MGNREGS funds are needed for toilet construction.

The SBM programme has seen progressive improvements in fund utilization. Fund utilization is measured as expenditure incurred during the period as a proportion of total available funds, including opening balances, releases and interest earned (Kapur & Aggarwal n.d.). Funds from the Centre are allocated to states based on states' approved Annual Implementation Plan (AIP). The state funds are available as per their own budget allocations.

During 2014–17, utilization of funds increased from around 60% in 2014–15 to nearly 111% by 2016–17 (see Table 4). While full utilization of central government funds has happened since 2015–16, utilization of own funds by

Table 3 | Budget allocations for SBM Gramin for meeting the Centre share from MDWS (USD million)

Budget heads	2012–13	2013–14	2014–15	2015–16	2016–17 (revised estimate)	2017–18 (budget estimate)
MDWS total for rural water supply and sanitation	2,025	1,865	1,888	1,731	2,580	3,127
Rural sanitation (SBA/SBM)	387	350	430	619	1,641	2,179
% to MDWS total	19.1	18.9	22.8	60.5	63.6	69.7
Rural drinking water	1,639	1,514	1,436	683	938	945
% to MDWS total	80.9	81.2	76.1	39.1	36.3	30.2

Source: Government of India budget documents, 2014–15, 2015–16, 2016–17 and 2017–18 – downloaded from http://indiabudget.nic.in/ (accessed April 30, 2017).

Table 4 | Utilization of available funds in USD million

	2014–15	2015–16	2016–17	3-year average
Centre funds				
Available funds	811	1,365	1,512	–
Expenditure	484	1,464	1,582	–
% utilization	59.6	107.3	104.6	95.7
State funds				
Available funds	3,232	6,451	8,214	–
Expenditure	1,795	4,841	9,971	–
% utilization	55.5	75.0	121.4	92.8
Total funds				
Available funds	4,043	7,816	9,726	–
Expenditure	2,278	6,305	11,553	–
% utilization	58.4	96.9	110.5	94.7

Note: This includes all states and union territories.
Source: Based on data from the SBM-Gramin website. These reports were downloaded May 20, 2017 from: http://sbm.gov.in/sbmreport/Report/Financial/SBM_StateDistrictExpYearwise.aspx.

state governments picked up to 121% in 2016–17. This reflects the increasing priority being placed by states on SBM-G.

This performance compares very well with other major national programmes such as the Sarva Siksha Abhiyan (SSA) for education with 70% utilization of its approved budget (Kapur & Bordoloi n.d.: p. 1), and the National Health Mission with utilization rate of only 68% in 2015–16 (Kapur & Baisnab n.d.: p. 1).

While the increase in budget allocation for rural sanitation is encouraging, it is also important to note the decline in allocation to rural water supply. Funds for rural water supply declined from USD 1,641 million in 2012–13 to USD 688 million in 2015–16. Its share in MDWS budget allocations dropped from 81% in 2013–14 to 30% in 2017–18 (see Table 3). Priority in the MDWS budget switched from water to sanitation in 2015–16. This decline in allocation for water is a serious concern as water availability is crucial for sanitation. However, many state governments have increased their own budget allocations for rural water supply.

Sources of funds

The principal source of funds is the budget allocations by national and state governments. In the national budget, the SBM programme has so far received funds through a special tax earmarked for SBM. In addition, funds are expected from the World Bank with disbursement linked to realized and verifiable outcomes. Platforms have been created to mobilize corporate and private funds. As the toilet incentives are provided after construction, households also provide pre-finance.

Swachh Bharat Cess

A sub-group of chief ministers on Swachh Bharat Abhiyan in its report in October 2015 highlighted the need for additional resources and suggested introduction of Swachh Bharat Cess (Niti Aayog 2015). Following this, in November 2015, a Swachh Bharat Cess was introduced as 0.5% of service tax. This made it possible to increase budget allocations for SBM. Receipts from Swachh Bharat Cess were around USD 2 billion in 2015–16 and 2016–17. Based on the trend in Swachh Bharat Cess, significant funds would have been available in subsequent years. However, with the introduction of the general services tax (GST) from July 2017, Government of India has abolished service tax and several associated cesses and surcharges, including the Swachh

Bharat Cess (Economic Times 2017). This means that additional budgetary resources are needed to make up the shortfall in 2017–18, as well as over the next two budget periods.

Results based funding from the World Bank

Additional funding of USD 1.5 billion is also available through a major World Bank's Program for Results (P4R). This is the largest World Bank loan to rural sanitation to date. This P4R will make the loan proceeds available only on completion and independent verification of key outcomes as captured in the disbursement linked indicators (DLIs). The key DLIs include reduction of open defecation, sustaining ODF status in villages, increase in rural population with SLWM and operationalization of performance incentive grant scheme by the MDWS (World Bank 2015). More than 80% of this funding is linked to reducing open defecation and sustaining the ODF status in villages.

It is expected that the state governments will receive funds based on their performance as measured through the National Annual Rural Sanitation Surveys (NARSS) for independent verification of SBM outcomes (MDWS 2017b).

> '*The states will pass on a substantial portion (more than 95 percent) of the Performance Incentive Grant Funds received from the MDWS, to the appropriate implementing levels of districts, Blocks, GPs etc. The end-use of the incentive grants will be limited to activities pertaining to the sanitation sector*' (Government of India 2016: p. 1).

It is likely that these funds will become available to eligible states from the next fiscal year, at least in the states that deliver the agreed performance as per DLIs. The World Bank funds would also help stimulate activities in the neglected area of SLWM. It will be necessary to ensure that these incentive funds do not crowd out allocations for sanitation by state governments.

Corporate social responsibility (CSR) funds

In the initial years of SBM, it was envisaged that the corporate sector would provide overwhelming support to SBM. The Swachh Bharat Kosh (SBK) was set up to attract CSR funds and contributions from individuals and philanthropists for SBM (Ministry of Finance 2015b). The SBK was accorded 100% income tax exemption under Section 80G of the Income Tax Act. However, by 2016, only USD 69 million was mobilized by donations and interest (Surabhi 2015, 2016). By May 2017, USD 42 million of SBK funds was disbursed to different state governments (Ministry of Finance 2015a). Samhita (n.d.) estimated that about 169 companies had contributed funds in this Kosh. Samhita (n.d.) suggests lack of control by donor companies as a reason for poor response. Their assessment shows that most companies wanted to retain some control over decision-making and did not favour a pure pooled-fund approach. The SBM website also has a corporate facilitation desk. However, there has not been much funding through this route either (MDWS 2017d).

MDWS has also made extensive efforts to work with the corporate sector to get their contributions for SBM. One of the outcomes of this has been appointment of over 600 district level sanitation motivators (referred to as *Zila Swachh Bharat Preraks*) by the Tata Trusts (Iyer 2017c). While this may not be significant in terms of quantum of funds, it helps to 'strengthen capacities at the district level and provide them technical and management support as they continue to make strides towards becoming ODF' (Tata Trusts 2016). There are other examples of using CSR funds to support innovative efforts, but most have not been scaled up (see, for example, FICCI (2015) and Samhita & ISC (2016)).

Composition of expenditure

The three main components of the SBM programme are the incentives for households to construct their own toilets, IEC for awareness and triggering, and the component on SLWM. The actual expenditure over the past three years is reviewed below.

An analysis of the past three years of expenditure suggests that more than 96% of total expenditure was on the incentives provided to households for construction of toilets (see Table 5). This has led to construction of over 40 million toilets, which had increased to 51 million by November 2017 (MDWS 2017e). It needs to be pointed out that in addition to toilet incentives through the MDWS

Table 5 | Expenditure share of main SBM components

SBM Component	2014–15 (6 months)	2015–16	2016–17	Total	Total expenditure (in USD million)
Toilet incentive (IHHL)	90.7	97.0	97.9	96.6	4,980
IEC	3.7	1.2	0.3	1.1	56
SLWM	1.2	0.5	0.4	0.5	28
Administration	1.5	0.6	0.2	0.7	26
Other	2.9	0.7	1.3	1.0	65
Total	100.0	100.0	100.0	100.0	5,155
Total (USD million)	663	1,948	2,543	5,155	–

Note: The expenditure includes both the centre and state shares.
Source: Analysis based on data retrieved from SBM-G website, downloaded April 17, 2017 from: http://sbm.gov.in/tsc/Report/Financial/RptStateDistrictExpYearwise.aspx?id=Home.

funding, toilet construction has also been supported through the Ministry of Rural Development, mainly through the MGNREGS programme.

With a focus on monitoring toilet targets and ODF achievements, there was no real push for SLWM by the national or state governments. Total expenditure on the SLWM component by May 2017 was USD 28 million (only 0.5% of total expenditure), as against USD 5,708 million originally envisaged for this activity. The target was to reach 250,000 GPs, but only 3,000 GPs have introduced some activities for management of either solid waste, liquid waste and faecal sludge and septage management. The SLWM component has been neglected in most states. The MDWS has now recognized this and focused its attention on this key component. It has developed specific guidelines for this purpose to support greater uptake of activities across different states (see MDWS 2017h).

The SBM monitoring system reports only on 'number of activities' under the SLWM component. While it is not very clear as to types of activities being taken up under the SLWM component, there is an increasing trend in SLWM activities in a few states (MDWS 2017f). It is possible that states will start focusing on this component once they achieve their targets for toilets and become ODF. The states that have progressed well on ODF have now taken up some SLWM activities and these include Gujarat, Kerala, Haryana, Himachal Pradesh, Uttarakhand and West Bengal. It is likely that SLWM will receive greater attention as states move to ensure ODF sustainability and villages start to become truly *Swachh*, meaning a fully sanitized village by eliminating open defecation, and services for management of solid waste, liquid waste and faecal sludge.

Expenditure analysis shows that there has been very little expenditure on the IEC component. As against the allocated 8% of funds, expenditure on IEC is only 0.6%, plummeting from USD 25 million in 2014 to less than USD 9 million in 2016–17. Some researchers have interpreted this to suggest that inadequate attention is being paid to the importance of awareness generation and behaviour change communication (see, for example, Kapur & Aggrawal n.d.; Kapur & Bordoloi n.d.; Kapur & Iyer n.d.; Kapur *et al.* n.d.).

The low expenditure on IEC is surprising, particularly considering studies that have suggested that toilets built through public grants are not used and people still prefer to defecate in the open (Coffey *et al.* 2014; Coffey & Spears 2017). This has been recognized, and the MDWS has made it mandatory for state governments to spend the stipulated amounts and made it a 'pre-condition for release of funds to States from the next instalment onwards of 2017–18' (MDWS 2017c: p. 1). There is emerging experience from the efforts being made by the MDWS with support of UNICEF and other partners. It has empanelled 36 key resource centres for training on interpersonal communication. Over 400,000 grass root motivators (*swachhagrahis*) are mobilized to work in districts (Iyer 2017c, 2017d).

The IEC activities need to be also understood better from the actual field level experience. A key change in the programme is to ensure a greater role and leadership of *Gram Panchayats* in the SBM (see, for example, Iyer 2017a). Similarly, district officers in many states are taking the initiative to involve women self-help groups (SHGs) in a variety of activities ranging from awareness building to toilet construction (see Mehta 2017: Box 1). This suggests that awareness activities are being carried out through a variety of local stakeholders, which does not entail large expenditure on IEC. MDWS (2017c: p. 1) points out that 'apart from the money spent by states on IEC, the Ministry and States mobilize tremendous support from development partners and carry out IEC activities through them, which do not reflect in the official IEC spending.' A recent effort to celebrate the 'freedom from open defecation week' (see SBM Gramin http://sbm.gov.in/sbm/ and on the hashtag ##FreedomFromOpenDefecation) is also an example of such an initiative.

SUFFICIENCY OF PUBLIC FUNDS FOR SBM-G PROGRAMME

As of May 2017, the SBM-G programme is past the half way mark. As reviewed above, the Government of India has allocated significant funding in the programme. However, considerable funds will still be needed to meet the ambitious target of making India ODF by October 2019. Additional funds required from the Government of India until 2019, and the possibility of meeting these requirements are discussed below.

Trend-based analysis of financing requirements

Trend-based analysis suggests that government funding will be adequate only if Swachh Bharat Cess funds are substituted through budget allocations. The designed programme provides for expenditure requirements of all project components (see Table 1). However, as reviewed above, nearly 97% of the allocated funds until April 2017 were used for the toilet incentive component (see Table 5). In the year 2017–18, a budget provision of about USD 2,179 million has been made (see Table 6). Over the next 18 months, an additional USD 2,161 million will be needed to meet the Government of India's share in expenditure for toilet incentives. While this looks feasible based on past allocations, it is necessary to consider the impact of abolition of SBM Cess. Government of India will need to make adequate budget allocations to ensure funding of toilet incentives to achieve the target of making all villages and districts ODF.

When the total SBM programme costs are considered, especially including the SLWM component, additional fund requirement is about USD 6,730 million until 2019 (see Table 6). A large proportion of this additional funding required is for the SLWM component. This may be difficult to mobilize through only budget allocations. Other sources of funds will need to be sought. One potential option is to use the 14th Finance Commission grants for the *Panchayati Raj Institutions* (PRIs) under which the PRIs are likely to receive nearly USD 12 billion over the next two years (Based on Finance Commission 2015: p. 112). A recent Government Resolution of Government of Maharashtra (2017)

Table 6 | Additional fund requirements for SBM (to meet the 60% centre share) (USD million)

	2014–15 (6 months)	2015–16	2016–17	2017–18	2018–19	2019–20 (6 months)	Total
Funds required for 60% centre share							
Total for all programme components	1,260	2,520	2,520	2,520	2,520	1,260	12,599
For toilet incentive	770	1,540	1,540	1,540	1,540	770	7,700
Cumulative funds required (centre share)							
Total for all components	1,260	3,780	6,299	8,819	11,339	12,599	–
For toilet incentive	770	2,310	3,850	5,390	6,930	7,700	–
Budget allocations/ utilization – Government of India							
MDWS budget allocation	445	1,020	1,641	2,179	–	–	–
Cumulative	445	1,465	3,105	5,285	–	–	–
Estimated budget allocations required for the remaining years (2018–19, 2019–20)							
To meet total SBM costs	–	–	–	–	4,487	2,244	6,730
To meet toilet incentive costs	–	–	–	–	1,441	720	2,161

Sources and notes: Annual funds requirement is worked out by distributing the total project costs and IHHL incentive costs (as per Table 1) equally over the programme period – from midway of 2014–15 to midway of 2019–20. The centre share is assumed at 60% of total programme costs. Toilet incentive expenditure is estimated by using its share in total expenditure. MDWS budget allocation and utilization over the years are as per Tables 3 and 4. Share of toilet incentive in total expenditure is as per Table 5.

also suggests that urban local government should use 50% of 14th FC funds for sanitation. This can be further leveraged through public private partnerships (PPP) for SLWM projects when sustainable revenue streams are possible.

Government of India introduced a new goods and services tax (GST) on July 1, 2017. With the implementation of GST, all cesses and surcharges levied by the government, which includes the SBM Cess, are abolished. 'Till now, no announcement is made by the Government of India about how it plans to make up for the cess amount which will no longer be collected under GST' (Dutta 2017: p. 2). It is claimed that the government will make it mandatory for 30% of the CSR funds to be utilized for SBM. However, the available experience so far suggests that while some CSR funding maybe available to demonstrate good practices, CSR contribution will be limited in relation to the total required funds. This suggests that the national government will need to make adequate budget allocations to ensure funding of its share of 60% of the total requirement.

State level analysis of finance requirements

It is necessary to assess fund requirements at the state level as state governments must meet 40% of total expenditure of SBM-G. Total funding requirement for each state for toilet incentive payments using the base line survey 2012 estimates were computed. With 40% of these costs as the state share, estimated fund requirement for the remaining period of SBM was estimated. This was compared with states' own expenditure in 2016–17 to assess the ability of state governments to fund their share of SBM. This analysis suggests that nearly half the states will require considerable efforts to even meet their share for toilet incentives. It should be emphasized that, in addition, the states will also need to fund ODF sustainability and SLWM.

The analysis was used to group states into four categories: (a) those that have already achieved their toilet construction targets, and may not need additional funds for toilet incentives – these include Arunachal Pradesh, Himachal Pradesh, Kerala, Meghalaya and Sikkim; (b) those that still have not reached their full targets, but would have adequate funds, if they can maintain the pace of allocation/utilization for 2016–17, including Chandigarh, Goa, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Nagaland, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttarakhand and West Bengal; (c) those that will need more allocation from the state level but not exceed twice the expenditure levels in 2016–17, including Andhra Pradesh, Assam Haryana, Karnataka and Mizoram; and (d) those that are likely to fall short in meeting their state share for IHHL incentives unless significantly greater allocation and utilization are achieved. These states include Bihar, Uttar Pradesh (UP), Jammu and Kashmir (J&K), Karnataka, Telangana, Manipur and Tripura.

MAKING INDIA ODF – FROM FUNDING TO SUSTAINING OUTCOMES

The main objective of the SBM programme is to eliminate open defecation and make all villages truly *Swachh*. A key challenge is to ensure sustainability of the ODF status in all villages, during the programme period and beyond. For this, the challenge is to ensure adequate funding for sustaining ODF and for improving SLWM in all villages.

ODF performance

Government of India has set out a definition of ODF, but the process of declaring an area ODF has been left to the state governments. Guidelines prepared by the MDWS include aspects related to definition of ODF, ODF declaration by village and GP, and the process of verification by teams at GPs, blocks, districts and state levels (MDWS 2015). Appropriate responsibilities are suggested at each level, along with guidance such as random verification of at least 20% of the qualifying GPs in a district, and 5% of qualifying GPs at state level. We review the performance on this key outcome and regional variations.

Based on MDWS suggested processes, 33% of villages and 20% of districts were declared ODF by May 2017. This meant 200,000 villages have become ODF (see Table 2). This is an important achievement of the SBM. It is important to clarify that this process is through self-declaration. Efforts are underway to have these verified by each state through their own processes. About 63% of self-declared villages have been verified as per the MDWS reporting system. This will also be taken up for rigorous verification of DLIs for World Bank funding, for which the MDWS definition of ODF will be used. The impact of growth after the 2012 baseline survey will also need to be considered. On a positive note, the 2018 Economic Survey of the Government of India states that 'the surveys conducted by National Sample Survey Office (NSSO 2016) and Quality Council of India (2017) on usage of toilets by the individuals who have access to toilets reported more than 90 per cent of individuals using toilets in 2016 and 2017' (Ministry of Finance 2018: pp. 183–185).

State level analysis of ODF performance

There are considerable regional variations in ODF performance (see Niti Aayog (2017) and RBI (2017) for data on socio-economic status of various state governments, and Ghosh & Cairncross (2015) for rural sanitation situation prior to SBM). The north-eastern states that have high toilet coverage have made least progress in ODF villages. On the other hand, the western states, with high toilet coverage, do have a higher proportion of villages declared as ODF. Thus, the link between availability of IHHL and ODF status does not seem to be very conclusive at regional level. Analysis of information on the use of toilets from the NARSS across states will provide more insights and enable a more detailed analysis of causes. This would also help to have a more focused design of IEC activities.

It is usual for administrators to cite lack of funds as a main reason for poor performance. Thus, one would expect that if more funds are available and spent, the higher would be the achievement. However, as seen in Figure 1, states that have spent more than their allocated share have not necessarily done better. States like Himachal Pradesh, Kerala, Sikkim and Uttarakhand have done better, despite under-utilization of their allotted funds. On the other hand, states like Madhya Pradesh, Rajasthan and West Bengal have spent much more than their allocated funds but have lagged far behind other states.

Expenditure on IEC and ODF performance

The IEC expenditure per household was analysed with ODF performance. Figure 2 illustrates that barring Sikkim there is no direct evidence that higher IEC expenditure helps to improve state ODF performance. While a few states such as Sikkim, Himachal Pradesh, Haryana and Kerala show high ODF achievements along with high IEC expenditure per household, some of the states in the north-eastern region have low ODF performance despite high IEC expenditure. On the other hand, states like Gujarat and Uttarakhand show good performance despite only moderate expenditures on IEC.

This may be surprising since many researchers and corporate partners place great emphasis on traditional behaviour change communications as the cornerstone of strategy for making rural India ODF. However, it highlights the importance of SBM-G approach, which places emphasis on overall community mobilization led by GPs, district *panchayats* (DPs) and elected representatives. Iyer (2017d) highlights this when he explains the SBM-G IEC strategy: 'Involving locally elected representatives, grassroots level organization, NGOs and school students in spreading awareness on sanitation is also a key aspect of the SBM's approach to IEC'. This is evident from the success stories such as those of Nadia (MDWS 2016c) and Sindhudurg (Singh 2016) districts. At the same time, it is important to highlight that the reported IEC expenditures may not fully capture all IEC activities, and it is important to also assess the appropriateness of the IEC activities that have been taken up in different states and districts across India.

Priorities beyond making villages and districts ODF

While the SBM programme aims to make all villages across India ODF, it is important to also recognize that adequate and sustained funding for activities will be needed to ensure ODF sustainability.

The focus in coming years will need to be on ODF sustainability. In December 2016, the MDWS issued ODF Sustainability Guidelines (MDWS 2016b). It envisaged that the local administrative system will need to engage with the ODF village for a minimum of nine months after ODF declaration. It also suggested that ODF Plus activities related to wider water and sanitation systems are critical to ensure sustainability. The Guidelines emphasized continued focus on participation of local 'natural leaders,

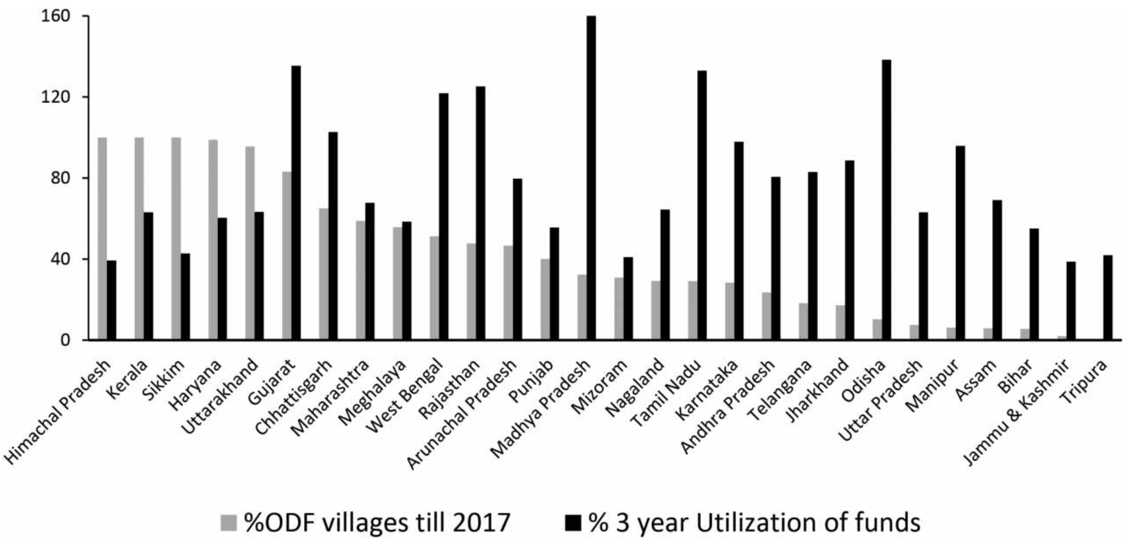

Figure 1 | State performance on ODF villages (%). *Source:* Analysis based on data retrieved from SBM-G website, downloaded 28 May, 2017 from http://sbm.gov.in/sbmreport/Report/Physical/SBM_VillageODFMarkStatus.aspx, and for utilization, see sources for Table 4.

engagement with schools and anganwadis.' A task force is expected to be set up at the village level to 'keep an eye on activities' (p. 4). It also suggested developing previous open defecation spots by 'planting trees, including trees considered as sacred, to dissuade people from defecating there.' Financing of these activities is expected to be through allocations to state governments.

So far, the SBM-G monitoring system does not provide details of expenditure on ODF sustainability. However, under the World Bank project 'ODF sustainability is

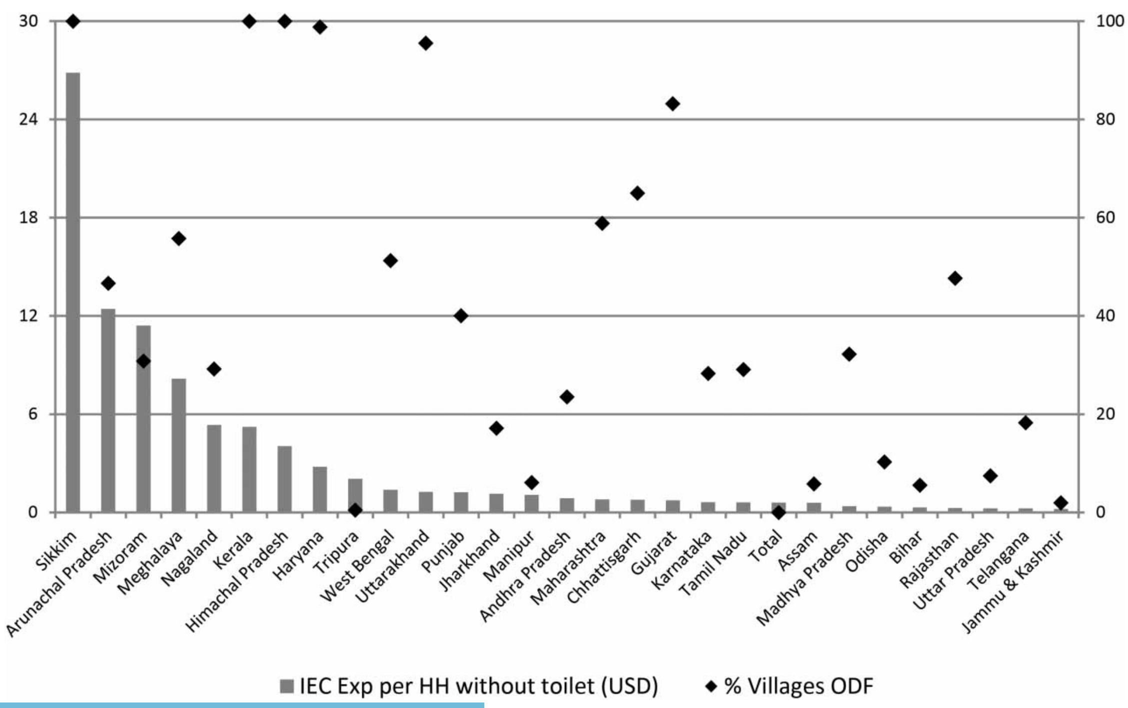

Figure 2 | Expenditure on IEC per household (USD) versus ODF villages (%). *Sources:* For % villages ODF same source as for Figure 1; for IEC expenditure same source as per Table 4.

included as a parameter of States performance to determine allocation of SBM-G funds to States' (MDWS 2016a).

Focus will also be needed on the SLWM component. As noted above, MDWS has already recognized the need to focus on this. Unlike toilet construction that can be handled by the GP level administration, SLWM will need greater technical and administrative capacity, especially to engage the private sector in these activities.

It is likely that the issues around SLWM will be more pronounced in the large dense villages (LDVs) and the census towns with urban characteristics. Iyer (2017a, 2017b, 2017c, 2017d) suggests that nearly 12 million households reside in these areas as per the 2011 census, and about 3,000 such areas are likely to emerge by 2021. Efforts will be needed to address solid waste as well as faecal sludge and liquid waste. An estimated 45% of households currently use septic tanks in these settlements. With additional toilets being built under the SBM, it is likely that this problem will become exacerbated. The small urban centres, that have begun to involve the private sector for septic tank emptying services and set up waste treatment facilities, can provide lessons to the large villages (see, for example, Mehta 2014; CEPT University and Dalberg Global Advisors 2015).

Unlocking sanitation finance from banks and MFIs

There appears to be potentially high demand for sanitation finance. For example, in 2011, a SHARE research study on sanitation microfinance for India identified at least 146,000 sanitation loans, which had enabled some 730,000 people to build household sanitation facilities (Tremolet & Kumar 2013). Subsequently, a monitor group study suggested, 'demand for toilets worth USD 10–14 billion, with a USD 6–9 billion financing opportunity (including bridge-financing for part-subsidy) (Shah *et al.* 2013). A more recent study suggests an estimated market size for toilet loans of nearly USD 12 billion. This is based on the estimate that at least 53 million rural households require financial support for their toilets (Dalberg Global Advisors 2017). While these estimates seem ambitious, they do suggest that making sanitation credit available on a large scale can trigger toilet construction. Equally importantly, it would enable households to undertake repair and renovation of their sanitation facilities, which may be critical for ODF sustainability. To make this happen, it is necessary to support measures for access to sanitation credit from banks, small finance banks (SFBs) and microfinance institutions (MFI) (see, for example, Bhandarkar 2017; IRC *et al.* 2017; ISC *et al.* n.d.). For this, it would be good to explore the emerging approaches on using blended finance measures by using grants and public funds to leverage commercial resources (see, for example, Kolker & Tremolet 2016; Leigland *et al.* 2016; World Bank 2016; Water.org 2018). Specific measures such as guarantees or grants to cover mobilization and origination costs will need to be developed (see, for example, water.org for operations in India and Mehta & Mehta (2014) for a proposal for development impact fund for sanitation credit).

The scheduled commercial banks have much greater geographic reach than MFIs. They also can lend at a much lower rate of interest as their cost of funds is lower. In India, banks are required to provide 40% of their total lending for sectors specified by the Reserve Bank of India (RBI). The revised priority sector lending (PSL) guidelines released on July 2015 recognized 'sanitation facilities including construction/refurbishment of household toilets' (RBI 2015). It also includes 'Bank credit to MFIs extended for on-lending to individuals and to members of SHGs/JLGs for water and sanitation facilities as eligible' for categorization as a priority sector under social infrastructure. This implies that for banks, it is possible to include all their sanitation loans to households and to SHGs or MFIs, as PSL. Even if 1% of the PSL is earmarked for sanitation, it would bring in about USD 4,700 million per year, sufficient to cater to a large proportion of the sanitation finance needs. It would be useful to explore the role of intermediaries who can facilitate access to bank loans, such as banking correspondents and payment banks or state agencies like Maharashtra based *Mahila Arthik Vikas Mahamandal* (MAVIM) in Maharashtra, *Kudumbashree* in the state of Kerala or the *Rajeevika* Mission in Rajasthan (see, for example, Bhandarkar 2017; Mehta & Mehta 2017).

The original SBM programme guidelines (MDWS 2014b) had provisions for setting up revolving funds to engage SHGs at a district level, but very few, if any, are active today. On the other hand, the SHG-Bank Linkage Programme (SBLP) can also play an important role. SHGs can help MFIs, SFBs and other banks to originate and service their toilet loans. SHGs have strong local presences that can be leveraged. There are many prevalent models under the SHG-Bank linkage programme. Efforts are also being made in many states to create linkages with SHGs to enable access to sanitation credit (see Mehta 2017: Boxes 8–11).

CONCLUSIONS

Over the last decade, Government of India has made significant efforts to improve the sanitation situation in India's villages. The Swachh Bharat Mission (SBM) is the most ambitious programme to envisage making India ODF.

Adequate fund allocation and efficient fund utilization

SBM-G has been adequately funded so far with high and increasing utilization of funds. It has sufficient funds allocated by the central government. It has efficient fund management and real-time monitoring. SBM funds are released in a timely manner to state governments against their annual plans. Many states have introduced transfer of funds directly to districts and even to the beneficiaries in an open and transparent manner which has further helped in efficiency and utilization. However, our analysis shows an urgent need to address a likely fund shortfall due to abolition of Swachh Bharat Cess. Thus, unless the gap created by abolition of the Cess is met by additional budgetary allocations, SBM-G in its crucial final phase will face a financial crunch. The World Bank's Program for Results has committed funding to SBM outcomes, but this alone will not be sufficient.

Government of India has recognized this. This is reflected in the increased allocation for SBM of 2,128 USD million in the 2018–19 budget. This is more than the budget required to meet the toilet incentive costs for the current year. This increased allocation was probably in part triggered by a recent study by UNICEF on the economic impact of sanitation. It highlights that the economic benefits of sanitation outweigh the cumulative investments by government and households by 4.7 times (Jaitley 2017; UNICEF 2017; Ministry of Finance 2018). It is also likely that the good utilization performance by the SBM-G also led to this increased allocation.

Rethinking and understanding the nature of IEC activities

There has been relatively low expenditure on IEC, although large-scale mobilization of stakeholders has been achieved. Compared to the funds for toilet incentive, there has been little expenditure on IEC by many states. While this has been flagged as an important issue by many observers, awareness and demand mobilization have been done on a massive scale by engaging with a wide array of stakeholders and creating a local dynamic of behaviour change, which is not necessarily correlated with IEC spending. As suggested in the ODF Sustainability Guidelines (MDWS 2016b), continued and appropriate IEC activities will be needed to ensure the ODF sustainability. This will need to be encouraged in states and districts that have become ODF.

Addressing the issues of lagging states

Despite the overall very good progress, a few states have lagged behind, both in fund utilization and ODF performance. Some of these states, such as Bihar, Uttar Pradesh, J&K, Odisha Telangana and two north-eastern states have shown relatively low performance on ODF. Some of these are also likely to face funding issues to meet their share (40%) for the toilet incentives, and will need to increase their allocations substantially.

Ensuring sustainability and focus on SLWM

The question in everyone's mind is the role of SBM beyond toilets and ODF villages. The MDWS has been promoting ODF+ villages, where not only the ODF status is sustained, but the SLWM component is also taken up. An important funding source is from the World Bank Program, which will be available to successful states. This can be used particularly for IEC and related activities for ODF sustainability. The financial crunch is likely to be further exacerbated when GPs start activities related to SLWM, as considerable additional funding will be required. So far there has been very little work done by GPs on this component. While 14th Finance Commission funds for GPs can be used for this, lack of funding in the foreseeable future for SLWM will remain a significant challenge. It will be necessary to leverage the limited public funds through innovative measures and developing appropriate PPP models, especially where revenue streams are possible for new services.

Increasing access to sanitation credit

There appears to be potentially high demand for sanitation finance with many ambitious estimates of market size. However, this will require measures such as blended finance and supporting access to sanitation credit from banks, SFBs and MFIs through SHG-Bank linkage programme. Sanitation is now included in the PSL for banks. Such lending can be used for both toilet credit and the SLWM component. If a requirement of just 1% is placed on the total pool of PSL for sanitation, it will help unlock nearly USD 4,700 million for toilet loans. Thus, sanitation credit will help support ODF sustainability and implementation of the SLWM component.

On the whole, this paper highlights that with political commitment, backed by adequate public finance, it is possible to achieve the apparently 'unsurmountable' goal of making a country 'open defecation free' much ahead of the global timeline.

ACKNOWLEDGEMENTS

This paper is based on a larger report prepared by the author for IOD-PARC, UK as part of an assignment for UNICEF. The full report includes qualitative analysis based on field inputs provided by UNICEF State WASH Leads. I would like to acknowledge the support from Mr Nicolas Osbert, WASH chief UNICEF, India, for his valuable insights and suggestions. My thanks are also due to Mr Francis Odhiambo at UNICEF, India – especially for his early inputs on the scope and his feedback. He also helped to get inputs from UNICEF WASH leads from 12 states in India. Their insights have been valuable in developing this paper. Ms Emma Henrion of IOD-PARC helped in initial development of the scope of work and has provided valuable feedback. The extensive feedback from reviewers was also very helpful. Professor Dinesh Mehta of CEPT University has provided valuable feedback and extensive suggestions. Research assistance was provided by Mahima Gupta, Vishwa Trivedi and Yash Jhaveri.

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