



WORKING PAPER India

Mapping Public Finance for Rural Drinking Water and Sanitation

India, Odisha State and Ganjam District

Working Paper

Andrea van der Kerk



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Abstract

The Government of India has set ambitious goals for rural drinking water and sanitation. Through two main flagship programmes, the Government aims to i) make the country free from open defecation in 2019 and ii) bring piped drinking water to at least 90% of rural households in 2022 and make sure that at least 80% have a household connection.

This working paper analyses how it aims to achieve these ambitious goals, specifically looking at the funding flows at national, state and district levels. For fiscal years 2014–15 to 2017–18, the Ministry's investments in sanitation multiplied fivefold, but allocations to rural drinking water decreased by a third.

There are also concerns about the long-term sustainability of the current sanitation approach, as the programme emphasises construction of toilets at the expense of maintenance, behavioural change and waste management. In Odisha State, spending on water and sanitation—as a percentage of the state's gross domestic product and as a percentage of the total state budget—has recently dropped. At the district level, financing of operations and maintenance is unclear, making it difficult to hold authorities to account for failing systems.

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Author: Andrea van der Kerk (IRC)

Editor: Sally Atwater

Designer: Gurpreet Singh

Photos: Andrea van der Kerk (IRC)

Reviewed by: Trisha Agarwala (CBGA), Ruchika Shiva, Stef Smits and Catarina Fonseca (IRC)

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Acronyms and abbreviations

CBGA	Centre for Budget and Governance Accountability
GDP	Gross domestic product
GP	Gram Panchayat
INR	Indian rupee
MDWS	Ministry of Drinking Water and Sanitation
MPLAD	Member of Parliament Local Area Development Scheme
NRDWP	National Rural Drinking Water Programme
O&M	Operations and maintenance
RWSS	Rural Water Supply and Sanitation
SBM-G	Swachh Bharat ("Clean India") Mission–Gramin (rural)
SC	Scheduled Caste
ST	Scheduled Tribe
USD	U.S. dollar
VWSC	Village water and sanitation committee
WASH	Water, sanitation and hygiene
WSSO	Water and Sanitation Support Organisation

1. Introduction

UN Sustainable Development Goal 6 urges countries to achieve universal access to drinking water and sanitation by 2030. India is seeking to accelerate progress with two country-wide programmes: the National Rural Drinking Water Programme (NRDWP) and the Swachh Bharat Mission (SBM)-Gramin.

The NRDWP's goal is to bring piped drinking water to at least 90% of rural households in 2022 and make sure that at least 80% have a household connection. SBM-Gramin aims to eradicate open defecation in rural areas by 2019. How much is the government at various levels investing in the sector to reach these goals, and how is the money being spent? How much progress is being made? These are some of the critical questions this working paper addresses.

To get a better understanding of these issues, this working paper maps the institutional setup and financial flows for rural drinking water and sanitation in India—nationally and at the state and district levels. We selected Odisha State and Ganjam district—two focus areas of the IRC India programme—for in-depth

analysis. We look at rural sanitation at the household level only; sanitation in schools, health centres and Aganwadi centres is financed separately.

This paper is based on a desk study as well as interviews with stakeholders at national, state, district and village levels, conducted in December 2016 (see Annex 1). Using government sources for data, it focuses on budget allocations and expenditures by national, state and district authorities; financial transfers from external partners are outside its scope. No studies were found that specifically address financing of drinking water and sanitation services in Ganjam. The district section is therefore based mainly on interviews, data collected from the Ganjam Rural Water Supply and Sanitation (RWSS) department and a brief field visit to three villages, selected by Ganjam's RWSS office.

The exchange rate used in this working paper is 1 INR = 0.01456 USD (December 2016).

The fiscal year in India runs from 1st April through 31st March.



Ganjam district officials, the sarpanch of the Gram Panchayat Chanakhandi and the president of the Banabullapalli village water and sanitation committee, with the village's tariff registration book for drinking water.

2. India context

India is a federal union comprising 29 states and seven union territories. Each state is divided into districts, which are sub-divided into blocks, Gram Panchayats and villages. In this working paper we specifically look at Odisha State and one of its districts, Ganjam (Figure 1).

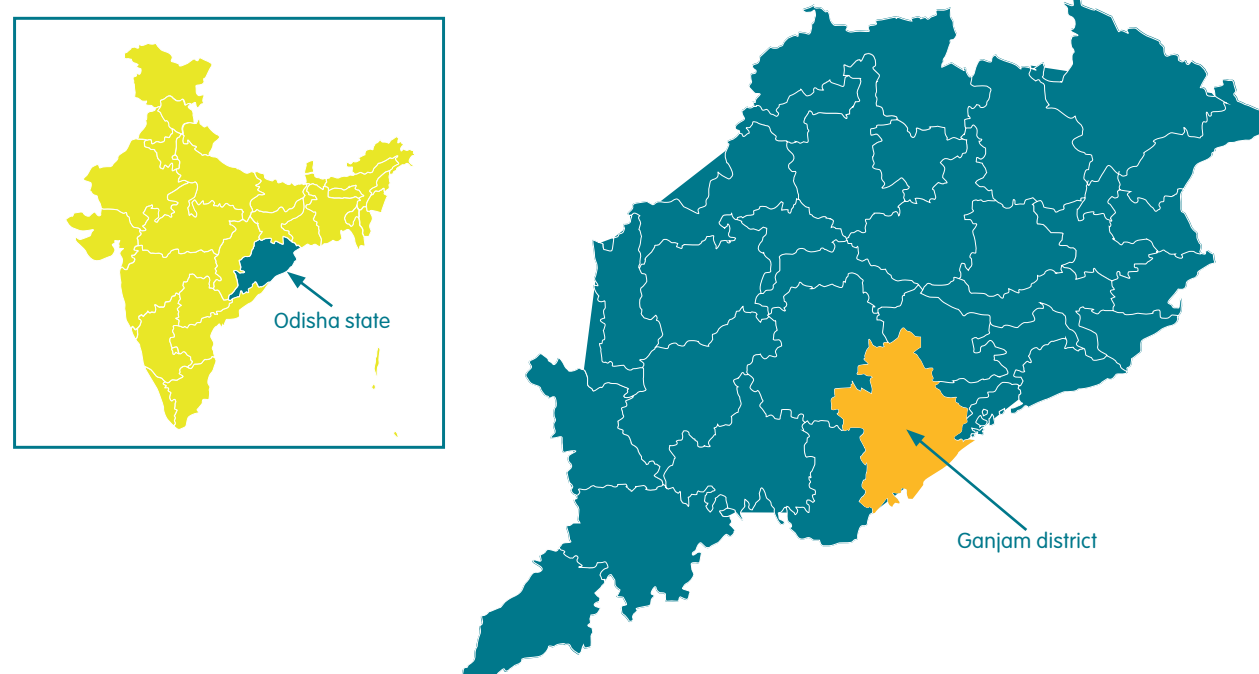


Figure 1: Odisha State and Ganjam district

Table 1. India, Odisha and Ganjam at a glance

	India	Odisha	Ganjam
Total population	1.3 billion	42 million	3.5 million
Rural population (percentage of total), 2015	881.7 million (67%)	35 million (83%)	2.7 million (78%)
GDP (GDP per capita), 2015	2,074 trillion USD (1,581 USD)	45 billion USD (1,024 USD)	2 billion USD (575 USD)
Rural population with access to drinking water, 2015-16	87% 54% tap water	79% of the habitations** fully covered 19% partially covered	67% of habitations fully covered 32% partially covered
Rural population with access to sanitation, 2017	59%	38%	38%
Gross Central tax revenue as percentage of GDP	11%	—	—
Open Budget Survey ranking (2015)*	46/100	—	—

Sources:

World Bank (2015)

Population Census (2011)

Planning Commission of India (n.d.)

Government of Odisha (2015)

WHO/UNICEF JMP (2015).

Ministry of Drinking Water and Sanitation (2016a).

Ministry of Drinking Water and Sanitation (n.d. b)
CBGA (2016b).

*This 1-to-100 index of transparency and participation in government budgeting is described in section 4.

**A habitation is a group of families living in proximity to each other within a village

3. Institutional setting and national funding flows

3.1 Funding flows at national level

With Central tax revenue at 11% of gross domestic product (GDP), India has the lowest tax-GDP ratio among the BRICS countries (Brazil, Russia, India, China and South Africa) (CBGA, 2016a). About 90% of this tax revenue level flows into the ‘divisible pool of Central taxes’. Every five years, the distribution of these funds between the Centre and the states is revised (Box 1). This revision is decided by the Finance Commission. The 14th Finance Commission decided

in 2015 that 42% of this divisible pool should go to the states as ‘untied funds’ (i.e., not earmarked)– an increase of 10% over the previous proportion. The other 58% is channelled through the line ministries to specific programmes.

The government also levies a 0.5% tax (Swachh Bharat cess) on all taxable services. These funds can be used to increase sanitation coverage (Box 2). Figure 2 gives an overview of the tax revenue collected at the national level.

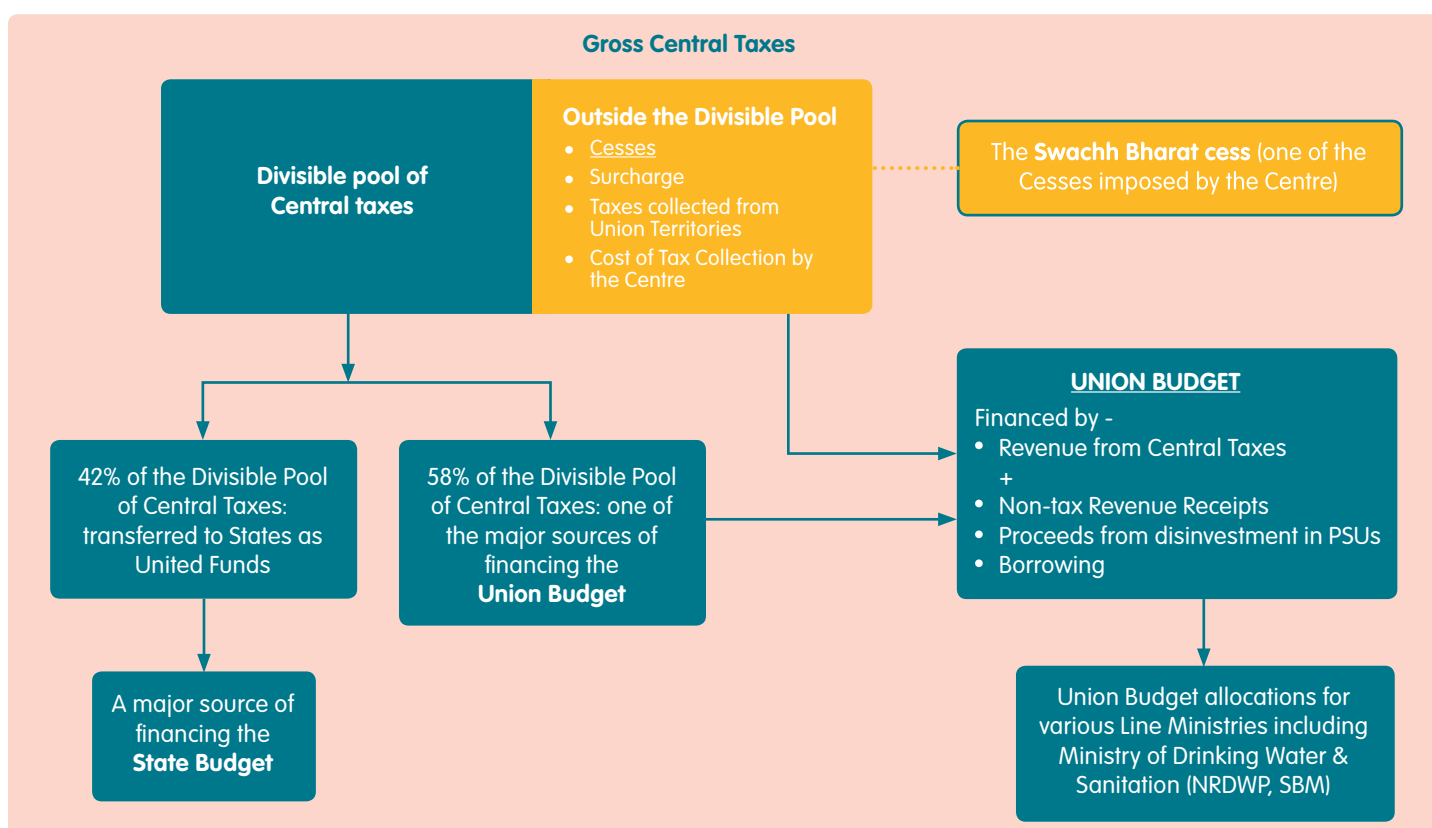


Figure 2. Overview of tax revenue collection at national level
 Source: CBGA (2007) and personal communication, CBGA staff members

Box 1: The 14th Finance Commission

Every five years, a finance commission is appointed by the President of India under Article 280 (3) of the Indian Constitution. This commission determines the financial relationship and facilitates the transfer of resources between the national and sub-national governments. It comprises a chairman and four members, who may be state ministers, sector experts, former bureaucrats, eminent economists and policy makers. The commission provides recommendations on how to share tax revenues and determines the principles for giving out grant-in-aid to states and other entities. The 14th Finance Commission submitted its report in 2015, which recommended the method for sharing Central resources between the states for 2015–16 to 2019–20. A key recommendation was to transfer 42 percent of the divisible pool of Central taxes to the states—an increase of 10%. This increase allows states greater autonomy in financing and designing schemes to meet their needs and requirements.

Source: Adapted from Shiva (2016).

The line ministry for rural drinking water and sanitation, the **Ministry of Drinking Water and Sanitation**, operates two main programmes: the National Rural Drinking Water Programme (NRDWP) and the Swachh Bharat (“Clean India”) Mission (SBM).

NRDWP aims to ensure that by 2022, at least 90% of rural households have piped water supply and at least 80% have house hold connections. Furthermore, it aims to “provide enabling support and environment” so that 100% of the rural drinking water sources and systems will be managed by local institutions, such as Gram Panchayats (GPs)¹ and communities.

SBM, launched in 2014, aims to make India open defecation free by 2019, through the construction and use of individual, community/public toilets and behaviour changes. SBM-Gramin is the rural component of SBM (GoI, 2011).

Figure 3 shows the ministry’s funds for these two programmes. Table 2 shows these figures per capita. The funds flow directly to the states’ treasuries (Figure 2, above). NRDWP and SBM funds must be matched 40% by the state. This can be financed from the untied funds that the states receive from the national government or from their own revenues, such as from taxation (Figure 4). Sections 3.2 and 3.3 discuss the implications of the ministry’s allocation.

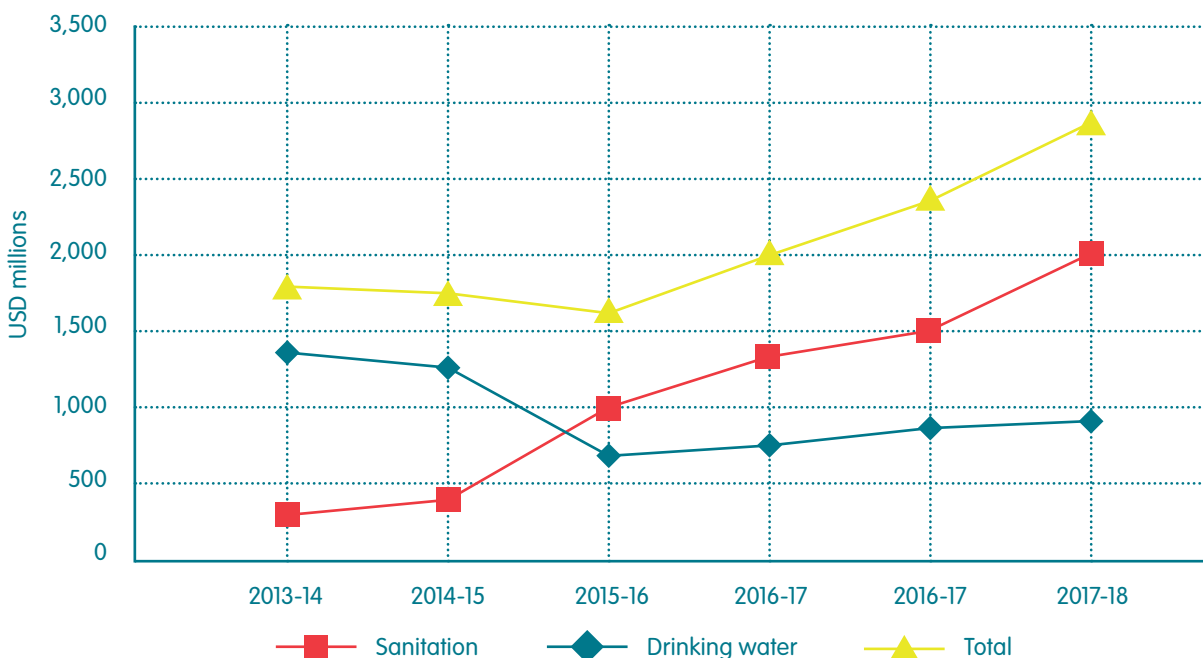


Figure 3. Investments Ministry of Drinking Water and Sanitation for rural programmes

Source: CBGA (2017)



Public hand pump in Ganjam district, Odisha

1. A Gram Panchayat is a local self-government at the village or small town level and usually has a sarpanch as its elected head.

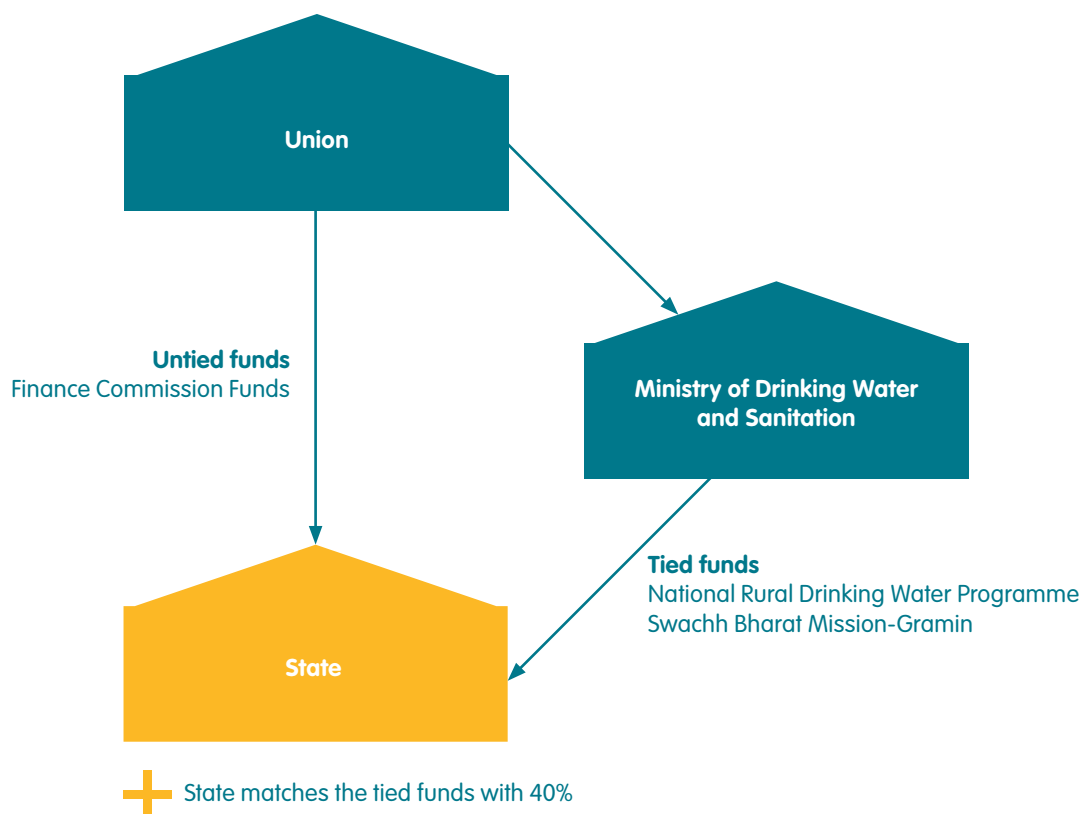


Figure 4. Tied and untied funding mechanisms from national to state level

Table 2. Allocations for rural programmes under the Ministry of Drinking Water and Sanitation

	2013-14	2014-15	2015-16	2016-17	2016-17	2017-18
Total per capita rural population	136 INR	137 INR	126 INR	159 INR	187 INR	226 INR
	2.0 USD	2.0 USD	1.8 USD	2.3 USD	2.7 USD	3.3 USD

Sources:
 CBGA (2017)
 World Bank, various dates

3.2 Priority on sanitation

The Ministry of Drinking Water and Sanitation’s investments for rural drinking water and sanitation have been gradually increasing since 2015–16, largely because allocations for sanitation have increased fivefold since the launch of the Swachh Bharat programme, from 414 million USD in 2014–15 to 2 billion USD in 2017–18 (CBGA, 2017). Sanitation coverage has gone up in this period from 42% in 2014 to 60% in 2017, according to the ministry (MDWS, 2017). There are, however, concerns about the long-term sustainability of the SBM approach, which

prioritises the construction of toilets over use of toilets and waste management. Country-wide, 97% of SBM funding was spent on the construction of individual household toilets in 2015–16. This leaves little budget for the other SBM-G components, such as solid and liquid waste management and information, education and communication (IEC). Other challenges are maintenance of the constructed facilities and services that manage the waste. Civil society organisations therefore advocate for an increased focus on sustainability of toilets and behavioural change to ensure toilet use (CBGA, 2017; Bhaduri, 2017; Agarwala, 2017).

Box 2: National taxation for sanitation

Apart from the SBM funds that go through the line ministry, there is another interesting national public funding mechanism for sanitation: the Swachh Bharat cess. This 0.5% tax has been levied by the national government on all taxable services since November 2015. The funds go to the budget of the national government (i.e., Consolidated Fund of India), which can use them for financing and promoting Swachh Bharat initiatives (Central Board of Excise and Customs, 2015). This means the funds do not go to the states, which are the agencies responsible for water and sanitation matters. Information on how much revenue has been collected and how the funds are being spent is scarce. According to the Indian Express (2016), the amount collected in fiscal year 2015–16 was 568 million USD (3901 crore INR). Of this, 349 million USD (2400 crore INR) would be used under the rural component of SBM and 23 million USD (159 crore INR) under the urban component.

Private funding for sanitation is being attracted via the **Swachh Bharat (“Clean India”) kosh**, which was set up to collect corporate social responsibility funds and contributions from individuals and philanthropists. The kosh bank account is operated jointly by the administrator and the chief controller of accounts at the Ministry of Finance. Line ministries can propose activities for the use of these funds, mainly in the field of construction and repair of toilets in schools (Swachh Bharat Kosh, n.d.). In 2014–15, companies put about 42.64 crore INR (6.3 million USD) in the Swachh Bharat kosh, according to the minister of Corporate Affairs (Times of India, 2016a). It would be interesting to analyse how these funds have been spent.

The Ministry of Drinking Water and Sanitation indicates that since the launch of SBM, the sector has increasingly collaborated with external partners such as the World Bank, UNICEF, Community-Led Total Sanitation Foundation, Water Supply and Sanitation Collaborative Council (WSSCC) and WaterAid (MDWS, 2016a). In 2015, for instance, the World Bank approved a 1.5 billion USD loan to the Government of India for the rural component of SBM over a five-year period (World Bank, 2015). It is outside the scope of this paper to do a detailed analysis of **financial transfers from external partners**, but in India, most funding for water, sanitation and hygiene (WASH) comes from the government. WaterAid estimated in 2010 that concessional finance from all multilateral and bilateral external support agencies together contributed less than 10% of the Union budget allocation for WASH (WaterAid, 2010). The major

transfers are essentially for technical support in implementing large schemes at the state and national level.

3.3 Decrease in Ministry's water investments

As the Ministry's investments in sanitation multiplied fivefold, allocations to rural drinking water decreased, from 1.3 billion USD in 2014–15 to 880 million USD in 2017–18 (Figure 3, above) (CBGA, 2017), even though 114 million rural citizens (13% of the total, 881.7 million) do not yet have access to safe water. Most of the unserved people are living on about 3.7 USD a day (WaterAid, 2016). The relatively low allocation to rural drinking water has been recognised – for instance, by the Parliamentary Standing Committee on Rural Development in 2016 – but allocation for water for 2017–18 is only slightly higher than for 2016–17 (Agarwala, 2017).

One pressing issue for rural drinking water is ‘slip-back habitations’²: neighbourhoods or clusters of dwellings that previously had drinking water coverage slip back to partial or no coverage. Another is the sustainability of aquifers (Bhaduri, 2017), which provide 85% of India's drinking water: groundwater levels are dropping in half of the country, according to WaterAid. Hand pumps are aggravating the crisis in many areas by depleting shallow aquifers (WaterAid, 2010). Recent droughts in several parts of the country, including Odisha, are deepening the problems (Times of India, 2016b, 2016c).

2. A habitation, as defined by NRDWP, is a group of families living in proximity to each other within a village. There can be more than one habitation in a village but not vice versa.

Water quality problems also demand serious attention. A national sub-mission with Central funding has been set up by the ministry to address habitations that are affected by fluoride and arsenic pollution (CBGA, 2017). At the state level, officials indicated that the national priorities for these water contaminants leave little room for addressing other state-specific water quality issues, such as iron contamination and salinity. Odisha, however, has relatively few habitations affected by arsenic (2) and fluoride (62) in 2016, according to the ministry (MDWS, 2016b).

To enhance social inclusion, 22% of NRDWP funds are earmarked for scheduled caste (SC) sub-plans and 10% for scheduled tribe (ST) sub-plans. These plans should provide drinking water supply to SC/ST concentrated habitations—those in which more than 40% of the population belongs to these vulnerable groups, which are among the most disadvantaged in India³ (MDWS, 2013).

Section 4 explores how rural drinking water and sanitation issues play out at the state level in Odisha.

4. Funding for rural water and sanitation in Odisha

Although poverty rates have been declining over recent years, Odisha is still one of India's poorest states. The state is predominantly rural. Although most people still work in the agricultural sector, Odisha has mineral belts in the western and northwestern areas and is moving towards an economy driven by industrial and service sectors. Odisha also hosts Chilika Lake, Asia's largest brackish water lagoon, which expands to 1,165 square kilometres in the rainy season (Government of Odisha, 2015).

4.1 State institutional framework

The Ministry of Drinking Water and Sanitation drafts policies and programmes at the national level, but rural drinking water and sanitation are laid down in the Constitution as 'state subjects'. In Odisha, the responsibility for rural drinking water and sanitation lies with the Rural Water Supply and Sanitation (**RWSS**) organisation, which has a state water and sanitation mission and a water and sanitation support organisation (**WSSO**).

RWSS, headed by an engineer in chief, is part of the Rural Development Department of the state government. It implements NRDWP and the rural SBM in the state and also administers specific state schemes funded by the state budget (see Sections 4.2 and 4.3).

The Odisha government's target is to provide every household with piped water supply and access to sanitation in 2019. Spending 0.8% of the state GDP on drinking water and sanitation, Odisha is investing more than some neighbouring states, such as Andhra Pradesh (0.2%) and Chhattisgarh (0.5%) (CBGA, 2016b).

Drinking water and sanitation expenditures, as a proportion of the budget and the state's GDP, had been gradually increasing over the years but have recently fallen (Figure 5). Odisha is following the national trend of allocating more for sanitation than for drinking water. As only 38% of Odisha's rural population has access to sanitation, this seems justifiable. However, 18% of Odisha's rural citizens still do not have access to safe water (Table 4). The state has therefore been encouraged by the ministry to increase its investments in the rural drinking water sector (MDWS, 2016c).



Chilika Lake, Odisha

3. Scheduled castes, also known as the Dalit, and scheduled tribes are historically disadvantaged groups given express recognition in the Constitution of India. A high concentration is considered an area in which these groups account for 40% or more of the total population (MDWS, n.d. b).

Table 3. Odisha budget for urban and rural water and sanitation

Total state budget (2016–17)	94,052 crore INR / 13.7 billion USD 326 USD per capita
Gross state domestic product (2015–16)	310,810 INR / 45 billion USD 1,024 USD per capita
State water and sanitation budget (2016–17)	2,728 crore INR / 397 million USD 9.5 USD per capita
Water and sanitation budget as percentage of total State budget (2016–17)	2.9%
Water and sanitation budget as part of gross state domestic product (2016–17)	0.8%
Total budget, rural drinking water (2015–16)	727 crore INR / 105.8 million USD Per capita rural: 3 USD
Total budget, rural sanitation (2015–16)	948–952 crore INR* / 138–40 million USD Per capita rural: 3.9 USD

Sources:

CYSD (2016).

Government of Odisha (2015, 2016).

Own calculations based on government documents.

Planning Commission of India (2014).

*CBGA reports 948 crore INR; RWSS verified actuals are 952 crore INR.

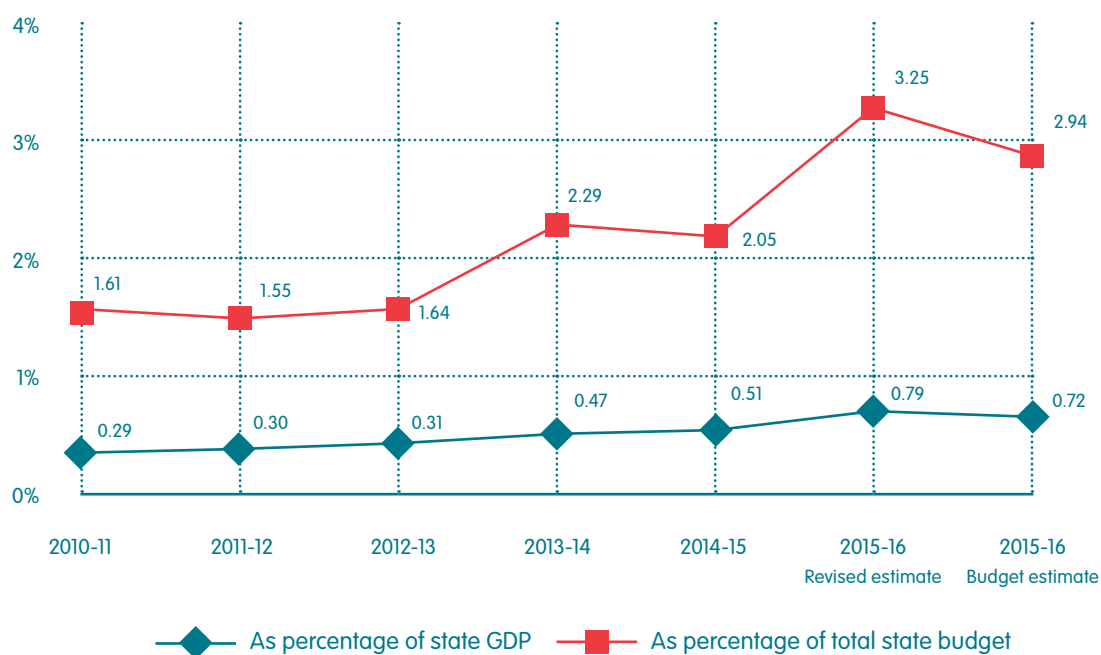


Figure 5. Water supply and sanitation in rural and urban Odisha budget, 2010–11 to 2016–17

Graphic by CYSD (2016).

Table 4. Rural drinking water and sanitation in Odisha

Rural coverage, drinking water (mainly hand pumps)	79% of habitations fully covered 19% of habitations partially covered
Population served by piped water scheme	41%
Population with household connection	2.5%
Functionality and quality of services	Data not available
Rural coverage, sanitation	38%

Sources:

MDWS (n.d. b)

Government of Odisha (2015)

Personal communication, chief engineer, RWSS Odisha

4.2 Drinking water budget in Odisha

According to RWSS officials, the state has no policy with specific criteria for prioritising households for new water schemes. The State Level Scheme Sanctioning Committee, headed by RWSS, approves all proposals for new drinking water infrastructure (MDWS, n.d. a). NRDWP guidelines prescribe that these proposals be developed by a state's RWSS in consultation with Gram Panchayats, with priority given to proposals from members of Parliament for their constituencies (MDWS, 2013). This was confirmed in interviews at the state level.

Odisha earmarked 40% of its rural water supply funds for scheduled tribes (23%) and scheduled castes (17%) in 2015–16 (Government of Odisha, 2016). We could not seek information available on the use of these funds or updated WASH coverage in areas with a high concentration of scheduled tribes and castes.

The Ministry of Drinking Water and Sanitation gives each state a 'tied' budget for rural drinking water. These NRDWP funds require a 40% state match from the state budget. Odisha also has state schemes, such as the Rural Water Supply Programme, that are funded through the state budget. The state budget consists of untied funding from the national government plus own revenue from tax collection and other sources.

Table 5 gives an overview of the RWSS budget and expenditure for rural drinking water in 2015–16, with its three main revenue sources:

- NRDWP funds from the Ministry of Drinking Water and Sanitation;

- state budget, to provide the NRDWP 40% match and to fund state schemes, such as the Rural Water Supply Programme; and
- loans (e.g., from the National Bank for Agriculture and Rural Development, which has supported the Rural Infrastructure Development Fund).

The funds are mainly used to complete construction of on-going schemes; more detailed information was not available. Expenditure of NRDWP funds must follow the national NRDWP guidelines: about 47% is intended for increasing coverage, 20% for providing safe drinking water to habitations dependent on a contaminated supply, 15% for operations and maintenance (O&M), 10% for sustainability, 5% for support and 3% for water quality monitoring (Table 6). Information on how the funds were distributed over these categories was not available except for the support component: in 2016–17, 129,000 USD was spent on information, education and communication activities for both drinking water and sanitation. Activities included media campaigns, printed materials and sensitisation workshops at state (26%) and district (74%) levels (OSWSM, 2016).

The gap between NRDWP budgets and expenditures in Odisha (Table 5) could probably be a result of delays in disbursement or release of funds from the national level. In November 2015 (third quarter of the fiscal year) the Centre for Budget and Governance Accountability, a research institute, reports that less than 50% of the total requested NRDWP funds had been released to Odisha (CBGA, 2016b). The mismatch between budgets or allocations and expenditures in RWSS and the Rural Infrastructure Development Fund requires further analysis.

Table 5. RWSS Odisha budget, 2015-16

	Budgeted/allocated	Expenditure
National Rural Drinking Water Programme funds from ministry + state matching funds	469 crore INR / 68 million USD	316 crore INR* / 45.9 million USD
Rural Water Supply Programme	100 crore INR / 14.5 million USD	335 crore INR / 48.8 million USD
Rural Infrastructure Development Fund for piped water schemes	150 crore INR / 21.8 million USD	1.9 crore INR / 0.3 million USD
Capacity building**	8 crore INR / 1.1 million USD	8 crore INR / 1.1 million USD
Total	727 crore INR/ 105.8 million USD Per capita rural: 3 USD	669 crore INR / 97.3 million USD (92%) Per capita rural: 2.8 USD

Sources:

RWSS (2016). *Verified actuals of expenditure under Plan Schemes for the year 2015-16*
Government of Odisha (2016).

* This figure does not match the Integrated Management Information System figures for the NRDWP component in Odisha: total expenditure 2015–16: 321.4 crore INR (Central, 150.6 / state, 170.8)

** This appears as a separate budget item but without explanation.

Looking at the NRDWP from the perspective of the [life-cycle costs approach](#) (Table 6, Box 3), we see that NRDWP covers capital expenditure and also some capital maintenance and direct support expenditures. Salaries for state and district staff, the biggest part of the direct support expenditure, are not covered, however. The direct support costs affect the implementation of the programme. The international benchmark is that sustainable WASH services require about 1-3 USD per person per year; in Odisha, the direct support per capita is only 0.27 USD. The salaries for Odisha state and district staff providing direct support are outlined in Table 7. Most direct support costs are covered by the state budget. Some costs are not included, however, such as expenditure on offices, vehicles and travel; additional data are needed here.

The NRDWP also does not cover indirect expenditures or the cost of capital (i.e., interest on loans). It is not clear how much of the O&M component is spent on operation and minor maintenance and how much is spent on major maintenance and replacement. Reliable information is also not available for the functionality and quality of water infrastructure, but a lack of systematic O&M appears to be a major challenge in the rural drinking water sector in Odisha. This is further explored in Section 5.



Box 3: Life-cycle costs approach

Life-cycle costs are all the costs incurred over the life-cycle of a water service, from construction of the infrastructure to its operation and maintenance and eventual replacement. The omission of any costs from planning and budgeting will eventually lead to reductions in service and poor sustainability.

Water and sanitation services have six cost components (Fonseca et al., 2011):

- Capital expenditure, both hardware and software (CapEx): the initial investment in the development of a water or sanitation system, referring to both the investment costs for infrastructure and costs related to the mobilisation of the community.
- Operations and minor maintenance expenditure (OpEx): recurrent (regular, ongoing) expenditure on labour (staff salaries), management (transport, fuel), energy and chemicals, materials, and minor repairs of the infrastructure.
- Capital maintenance expenditure (CapManEx): the costs of renewal, replacement and rehabilitation of the infrastructure.
- Expenditure on direct support (ExpDS): costs for both pre- and post-construction support activities directed to local stakeholders, users or user groups.
- Expenditure on indirect support (ExpIS): government's costs for macro-level development of frameworks, institutional arrangements and capacity building.
- Cost of capital: the expense of financing a programme or project (i.e., the cost of accessing the funds needed to construct a system).

Table 6. Current budget components of NRDWP

Component	Purpose	State NRDWP allocation	Corresponding life-cycle costs components (see Box 3)
Coverage	To provide safe and adequate drinking water supply to unserved, partially served and slipped-back habitations	47%	Capital expenditure
Quality	To provide safe drinking water to water quality-affected habitations	20%	Capital expenditure
Operations and maintenance (O&M)	To run, repair and replace drinking water supply infrastructure	15% maximum	Capital maintenance expenditure (CapManEx), operations and minor maintenance (OpEx)
Sustainability	To encourage states to achieve drinking water security at local level through sustainability of sources and systems	10% maximum	Capital expenditure, direct support expenditure
Support	To support activities related to information, education and communication (IEC), water and sanitation support organisation (WSSO) and management information system	5%	Direct support expenditure
Water monitoring and surveillance	To monitor water quality in habitations at field level and to set up and upgrade laboratories at state, district and sub-district levels	3%	Capital expenditure, direct support

Source: NRDWP (2013)

Table 7. Salaries for state and district staff providing direct support for WASH services

	Total salaries (2015-16)	Per capita (rural population)
Rural water supply Staff RWSS and Education, Information and Communication (IEC) Office	8.69 million USD (5971.72 lakh INR)	0.25 USD
Water quality-related issues Staff and consultants, Water and Sanitation Support Organisation (WSSO) departments	124,950 USD (85.84 lakh INR)	0.00 USD
Sanitation Staff and consultants, WSSO departments	872,147 USD (599.16 lakh INR)	0.02 USD
Total	9.69 USD (6656.72 lakh INR)	0.27 USD

Source:

Personal communication, Odisha State Water and Sanitation Mission Officials (March 2017)

4.3 Sanitation budget in Odisha

With coverage of just 38%, Odisha ranks third to last among India's states in terms of sanitation. Still, the situation has been improving since 2014, when only 12% of the population had access to sanitation. Since the start of the Swachh Bharat Mission in October 2014, 2.4 million toilets have been built (MDWS, 2017). To reach the target of universal access to sanitation in 2019, Odisha must make huge investments in the coming years. Under the SBM programme, it receives earmarked funds from the Ministry of Drinking Water

and Sanitation, to be matched at 40% (Table 8). The verified actual data on SBM-Gramin expenditure (138 million USD) that we received from RWSS is much higher than the figure shown in the ministry's online information system (58 million USD). The system may not capture the whole budget, or the system may not have been updated; the latter explanation was mentioned in a conversation with ministry officials (MDWS, 2016c).

Table 8. Rural sanitation budget, Odisha, 2015-16

	Budget/allocated	Expenditure
State total	948–952 crore INR / 138–140 million USD*	952 crore INR** / 138 million USD†
Per capita (rural population)	4 USD	3.8 USD

* CBGA reports 948 crore INR; RWSS verified actual figure is 952 crore INR.

** MDWS information system reports 399 crore INR.

† RWSS verified actuals (received in field visit, December 2016).

5. District-level funding for WASH in Ganjam district

With 3.5 million inhabitants, Ganjam is the most populous of Odisha's 30 districts. Most villagers rely on agriculture; their crops include rice and vegetables such as green chilli. A majority—60%—of Ganjam's Gram Panchayats have a high concentration of marginalised communities (i.e., scheduled castes and tribes). In the southeast of the district lies a part of Chilika Lake, Asia's largest brackish water lagoon. Ganjam's main drinking water source is groundwater; some communities rely on surface water. Table 9 summarises the WASH situation in Ganjam district.

With only 38% rural sanitation and 70% rural drinking water coverage, there remains a lot to be done before the district achieves Odisha's goals of universal coverage of drinking water and sanitation in 2019. No studies were found that specifically focus on financing of drinking water and sanitation services in Ganjam. This section is therefore mainly based on data collected from Ganjam's RWSS department and a brief field visit to three villages selected by RWSS. This obviously provides an incomplete picture and follow-up visits are needed to get a more in-depth picture of the challenges and opportunities in Ganjam.

Ganjam's RWSS department is responsible for rural drinking water and sanitation in Ganjam district. It has two divisions, Berhampur and Bhanjangan, each led by an executive engineer, with six assistant executive engineers. Two junior engineers work in each of the district's 22 blocks: one is responsible for major repairs and the other is responsible for operations and maintenance. In practice, operation and maintenance is not taken up like its mentioned in the guideline, the roles of the line department and community level institutions seem unclear. Figure 6 shows the institutional setup.

RWSS focuses on increasing coverage of drinking water supply and sanitation by building infrastructure. The completed infrastructure is handed over to the GPs, which are responsible for the operation and maintenance of the water supply schemes within their jurisdiction (MDWS, 2013). Some villages have village water and sanitation committees (VWSCs) that manage O&M. This is in line with the government's decentralised approach and focus on community empowerment (MDWS, 2013). In some villages—it is not clear how many—the service provider is an NGO (Javorsky et al., 2015).

Table 9. Ganjam district at a glance

Total population / rural population	3.5 million / 2.7 million (78%)
Administration	22 blocks, 475 Gram Panchayats, 3,212 villages
Rural drinking water coverage	67% of habitations fully covered 32% of habitations partially covered
Rural sanitation coverage	38%
Main drinking water source	Groundwater
Water supply (according to RWSS, not verified)	
Population receiving piped water	45%
Households with individual connection	5.5%
Households with hand pumps and stand posts	94.5%
Average no. of hours of water supply per day	4 hours
Functionality and quality of services	Data not available

Sources:

Personal communication, RWSS Ganjam officials December (2016)

Government of Odisha (2015)

MDWS (n.d. b) (accessed January 2017)

Population Census (2011)

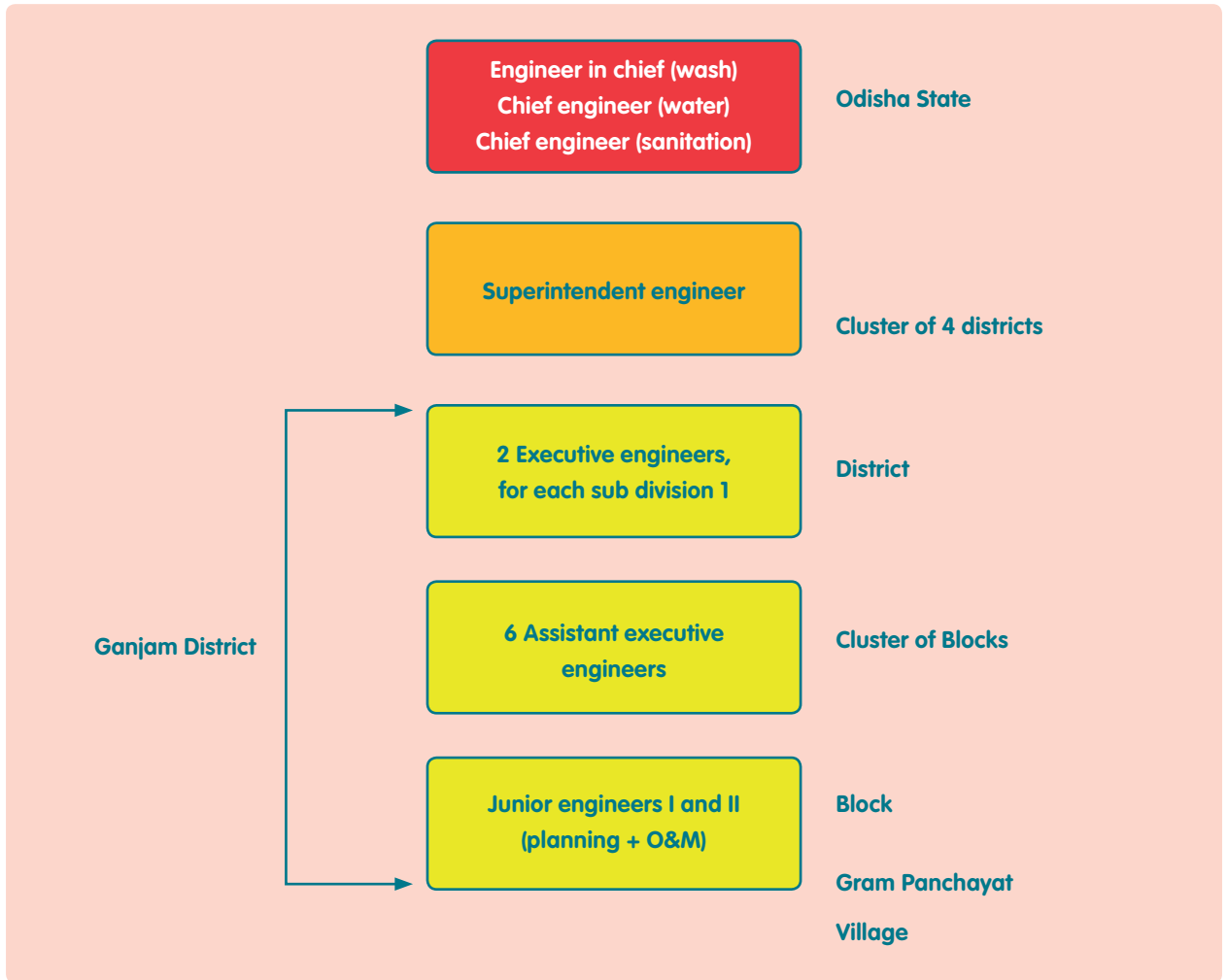


Figure 6. Institutional overview, RWSS in Odisha state and Ganjam district



President of a Village Water and Sanitation Committee in Ganjam district

5.1 Drinking water in Ganjam district

Table 10 summarises the sources of funding for rural drinking water in Ganjam district. Apart from the NRDWP funds, the exact size of the funding flows could not be verified. The data include estimates from Ganjam RWSS officials. Excluded are the salaries of the

RWSS officials and other direct support expenditures, which come out of the state budget. More analysis of the direct support expenditure in Ganjam district is required.

Table 10. District budget for rural drinking water, 2015-16

Revenue source	Specification
NRDWP <i>60% from Ministry of Drinking Water and Sanitation, 40% from state, channelled through state budget to district budget</i>	Allocation: 29 crore INR / 4.2 million USD Expenditure: 26 crore INR / 3.8 million USD (89%) of budget spent NRDWP funds cover capital expenditure and capital maintenance expenditure. In Bhanjangan, 80% spent on coverage and spot sources, 9% on water quality, 8% on sustainability, 3% on operation and maintenance.
Finance Commission <i>Untied funds from Union budget, channelled through state budget to district budget</i>	Estimated budget: 34 crore INR / 4.9 million USD (est. by RWSS) A proportion of these funds should be used for WASH O&M, capital expenditure and capital maintenance expenditure. It is not clear how the funds are spent in Ganjam. In June 2016, 238 crore INR / 35 million USD of funds for Odisha remained unspent. Odisha urged districts to submit plans to use funds, giving priority (preferably 80%) to drinking water supply projects. This letter also mentioned that minimum 30% of 14th Finance Commission and 4th State Finance Commission funds "may be utilised for renovation, creation and augmentation of piped water supply schemes".
Member of Parliament Local Area Development Scheme (MPLADS) <i>MPLADS funds flow directly from national government to district authorities</i>	20 lakhs INR / 29,000 USD MPLADS is fully funded by national government. Members of Parliament (MPs) can recommend works to be carried out in their constituencies. These funds are allocated for construction of new sources in specific villages. Annual MPLADS fund entitlement per MP constituency is 727,808 USD (5 crore INR).
Gopabandi Gramin Yojana Fund <i>State funds flow from state budget to district budget</i>	75 lakhs INR / 109,000 USD Funds used to provide water supply to 15 villages.
Tariffs <i>Collected by VWSC from households with piped connection in some cases</i>	10–50 INR / 0.15–0.73 USD per household per month. No reliable data are available for tariff collected in Ganjam. This estimate is based on three visited villages selected by RWSS: Kiluapolli (pop. 1500, 360 households), Banabullapalli (pop. 1,340, 300 households), Goba (pop. 1,610, 416 households). VWSCs collect tariffs only from households with household connections. Tariff is less than 1% of household income (7,000–8,000 INR / 101–116 USD per month).
Taxes	— District does not levy taxes for drinking water and sanitation. GPs can levy taxes, but no information for Ganjam was available.
External aid	— NGOs are working on water and sanitation in Ganjam, but district RWSS could not provide details and knew of no transfers of funds.

Sources:

Ministry of Drinking Water and Sanitation, n.d. b

Ministry of Statistics and Programme Implementation Scheme (2016).

Principal Secretary of Government of Odisha (2016).

Personal communication, RWSS staff in Berhampur (December 2016).

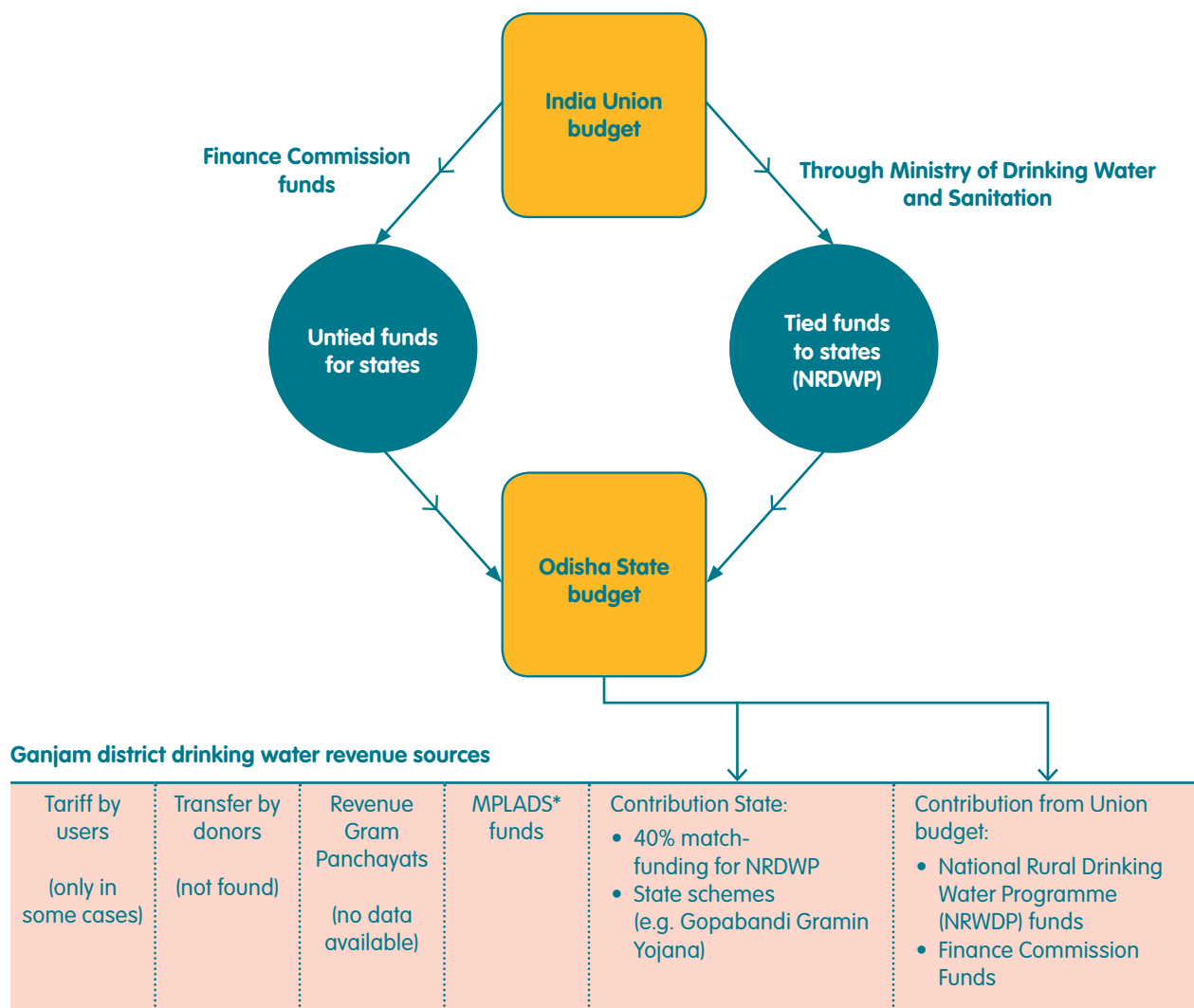


Figure 7. Overview of funding flows for rural drinking water in Ganjam district

Sources:
 Personal communication, CBGA and RWSS officials (December 2016)
 *Member of Parliament Local Area Development Scheme (MPLADS)



Two Kiluapolli village women with their household connection, Ganjam district

5.2 Challenges rural drinking water

RWSS district officials reported that water quality was a serious concern. In Ganjam's coastal areas, salinity is a problem, and some sources in inland areas have a high concentrations of iron. No data were available on bacteriological contamination. According to RWSS, there is a district lab and 350 water quality testing kits available, but in two of the three visited villages, no kit was available and the water systems were not being disinfected—for instance, through chlorination. Natural disasters such as cyclones regularly challenge water and sanitation infrastructure in the coastal areas.

Another challenge involves the O&M of rural drinking water systems. The GPs are responsible for O&M of drinking water systems in their territory, but planning, budgeting and implementation are unclear. For fiscal year 2016–17, both RWSS and the GPs have funds earmarked for O&M. RWSS receives O&M funds via NRDWP, and the GPs have O&M funding from the Finance Commission. The twin funding streams create confusion not only about who pays for O&M and who does major versus minor repairs but also about accountability for defunct systems. Moreover, in Odisha, a large amount of Finance Commission funds remains unspent (238 crore INR/35 million USD in 2016) (Table 10, above).

State and district officials said that the O&M issues are being discussed at the national level. One suggested measure—not yet agreed upon till December 2016—is transferring the NRDWP component for O&M from RWSS to the GPs. This would make the GPs responsible for all O&M and also the recipients of all the Union and state funds. GPs could then be held to account for effective O&M. Several interviewees indicated that any shift should be accompanied by enhanced planning and budgeting capacities at the GP level.

According to NRDWP guidelines, cost recovery mechanisms should be in place and the GPs or VWSCs should collect user fees for O&M. The tariff structure should be decided at the state level and should differ by level of service—household connection or hand pump and street stand post. A lower, affordable tariff should apply to scheduled caste, scheduled tribe, and below-poverty-line households (MDWS, 2013).

In Ganjam, user fees are apparently collected only in certain cases, and only from households with individual connections (Table 10, above). The tariff is meant to cover the costs of the pump operator, energy and minor repairs, but according to the VWSCs in the three villages we visited, the revenue is insufficient to cover these costs. More analysis on the tariff setting and collection bottlenecks is required. We did not hear about any special tariffs for vulnerable groups, which probably rely mostly on public stand posts.

Residents relying on public stand posts did not pay a tariff in the three visited villages. It is not clear how O&M for these stand posts is financed. Two VWSCs withdraw money for repairs from a village 'corpus fund', to which the villagers donate for religious ceremonies. In one village, the VWSC president paid for repairs from his own pocket.

5.3 Sanitation in Ganjam district

Sanitation coverage in Ganjam is now 38%, which is 21% higher than in October 2014 but still far from the 100% target for October 2019. The Swachh Bharat Mission–Gramin is the main funding mechanism for rural household sanitation (Table 11). The SBM–G activities to end open defecation in rural areas by 2019 are planned and implemented at the district level. The district's RWSS executive engineer is responsible for the implementation, monitoring and financial management of the programme. Several consultants and community-led total sanitation motivators support him in this role. The state RWSS provides policy guidance, and the district RWSS provides

Table 11. Swachh Bharat Mission–Gramin funds in Ganjam district

Rural sanitation expenditure, 2015-16	Rural sanitation budget, 2016-17
101 crore INR / 15 million USD	236 crore INR / 34.5 million USD
5.5 USD per capita rural*	12.7 USD per capita rural*

Sources:

District Water and Sanitation Mission Ganjam (2016). This source was verified with financial data provided by the Member Secretary DWSM Ganjam (January 2017).

**Calculation based on Population Census (2011).*



Villagers in Goba -Ganjam district- who do not have space for a toilet in the home, have a personal latrine with a lock on the community ground

coordination and technical assistance to the GPs and communities (OSWSM/UNICEF, 2016).

The national emphasis on sanitation is apparent at the district level: the budget for 2016–17 is twice the expenditure for 2015–16 (Table 11, above). The largest proportion, 30.5 million USD, or at least 88.5%, is being used to construct individual household latrines.

Rural citizens can receive an incentive of 12,000 INR (175 USD) to build their own toilets. The SBM guidelines suggest three instalment payments, but in the villages we visited people received reimbursement in one payment, after construction. Sanitation being a state subject, the state can determine disbursement mechanisms. In Odisha, the

applicants submit bills for the construction work and are supposed to receive payment within 15 days, directly deposited into their bank accounts. In reality, the reimbursement often takes longer. In some cases, the upfront construction costs are covered by an NGO or paid from a community fund (OSWSM/UNICEF, 2016). Our interviews revealed that in Kiluapolli village in Ganjam district, for instance, the local self-help group acquired a loan of about 1,400 USD from the local Andhra bank to help villagers pay for the toilet construction. For verification purposes, an applicant must submit a picture taken in front of the toilet, with his or her name and address on the wall or door; these photos are uploaded to the national SBM database.



Water for cleaning purposes, Ganjam district

Ganjam's SBM-Gramin annual implementation plan states that between 2012–13 (the baseline) and 28 February 2016, 47,498 individual household latrines have been constructed. This is fewer than the target for 2015–16 (Figure 8). For 2016–17, the RWSS goal is to build 174,901 toilets, twice the target for 2015–16, with 39% of the toilets for households living below the poverty line (Table 13).⁴ The budget for 2016–17 is more than twice the expenditure of 2015–16 (Table 10, above). It will be interesting to see whether the increasing sanitation budget also leads to significant growth in sanitation coverage.

The absorption capacity of the funds for sanitation might be an issue however. The annual plan indicates an unspent balance of 5.3 million USD (36.4 crore INR) at the end of the 2015–16 fiscal year (Table 12). The reason for this considerable gap between budget and expenditure requires further analysis. Another concern is that the strong emphasis on toilet construction leaves little funding for ensuring the sustainability and use of toilets or managing waste.

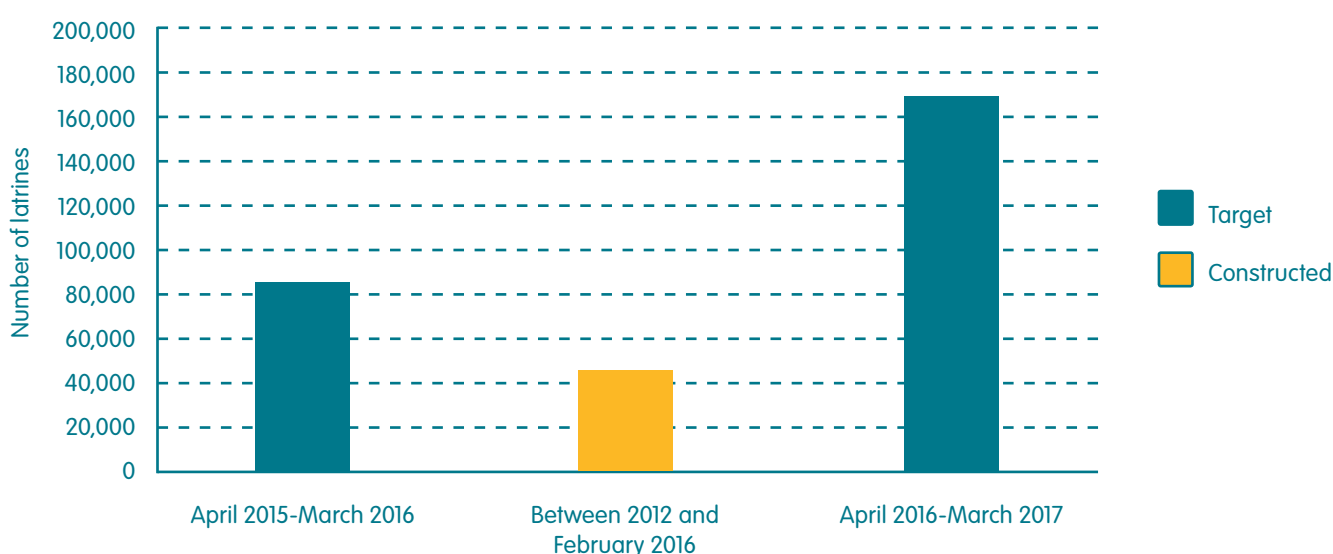


Figure 8. Household latrine construction in Ganjam

Table 12. Sanitation expenditure, Ganjam district SBM-G, 2015-16

Share	Opening balance (1 April 2015)	Funds released (before 28 Feb 2016)	Interest earned	Total available funds	Expenditure (before 28 Feb 2016)	Unspent balance (31 March 2016)	Anticipated total expenditure (31 March 2016)
Government of India share (lakh INR)	1,374	3,180	6	4,560	2,139	2,421	6,265
State share (lakh INR)	520	2,120	4	2,644	1,426	1,218	3,939
Beneficiaries share (lakh INR)	0	0	0	0	0	0	0
Total INR lakh	1,894	5,300	10	7,205	3,565	3,639	10,205
Total USD (per capital rural)	2.8 million (1.0)	7.7 million (2.9)	14,556(0.0)	10.5 million(3.9)	5.2 million 1.9)	5.3 million(2.0)	14.9 million(5.5)

Sources:

District Water and Sanitation Mission Ganjam (2016)

4. The poverty line in rural areas is defined as a "monthly per capita consumption expenditure" of 972 INR / 14 USD (Planning Commission of India, 2014).

Table 13. Sanitation budget, Ganjam district SBM-G, 2016-17, district annual implementation plan

Component	Funds	Percentage of total budget	Goals
Individual household latrines	209.8 crore INR / 30.5 million USD	88.5%	Construction of 171,901 household toilets (through incentives)
Sanitary complexes	0.4 crore INR / 58,224 USD	0.2%	Construction of 22 community sanitary complexes
Solid, liquid waste management	4.4 crore INR / 640,471 USD	1.9%	Implementation of 110 projects (versus 0 in 2015-16)
Revolving fund	10.7 crore INR / 1.6 million USD	4.5%	Not specified
Information, education and communication	7.6 crore INR / 1.1 million USD	3.2%	Capacity building and start-up activities (not specified)
Administrative charges	3.9 crore INR / 567,690 USD	1.7%	Available for temporary staff salaries and SBM-G work at state, district, block and GP levels (e.g., support services, fuel charges, vehicle hire charges, stationery, monitoring and evaluation activities)
Total in INR	237.0 crore INR	100%	
Total in USD (per capita rural population)	34.5 million USD (12.7 USD)		

Sources:

District Water and Sanitation Mission Ganjam (2016)

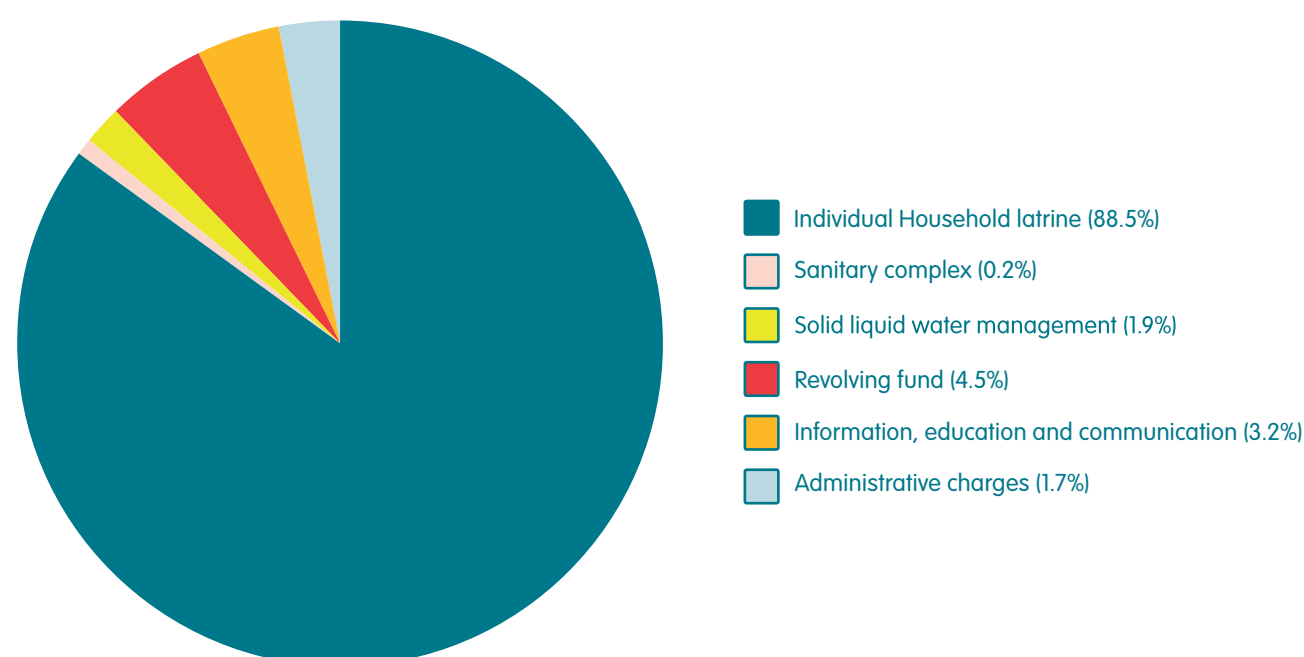


Figure 9. Sanitation budget Ganjam 2016-17

6. Conclusion

Tracking budgets and expenditure flows in India is often complicated. Although the government's online Integrated Management Information System covers physical and financial progress for NRDWP and SBM-G, the data do not always match budget data at state and district levels. For instance, the budget figures for the SBM-G provided by the RWSS in Ganjam are much higher than those in the information system.

Accessing relevant budget data, especially administrative block and fiscal quarter breakdowns of expenditure at the district level, is very difficult (CBGA, 2016c). The International Budget Partnership, an independent organisation, has developed a 1-to-100 index of budget transparency, participation and oversight to allow comparisons across countries. The 2015 Open Budget Survey gave the Government of India a score of 46 for transparency because only limited budget information is published; the score for public participation was 19 because citizens have few opportunities to engage in the budget process (IBP, 2016). CBGA recommends publishing disaggregated information on actual expenditures and receipts at district level in a timely and accessible manner to strengthen public monitoring of use of funds (CBGA, 2016c).

Overall, the Government of India is making impressive investments to increase access to household sanitation and achieving tangible results. This progress seems to come at the expense of rural drinking water. As the Ministry's investments in sanitation multiplied fivefold, allocations to rural drinking water decreased, from 1.3 billion USD in 2014–15 to 880 million USD in 2017–18. With 114 million rural citizens lacking safe drinking water, this sector should be a higher priority. In both sectors the emphasis is on constructing infrastructure. In sanitation 97% is spent on the construction of household toilets; in the drinking water sector the proportion is more difficult to determine.

Getting details on expenditures is challenging. Budgets often consist of line items, but this is not the case for expenditure data: How much is invested in infrastructure and how much in other activities? The direct costs for drinking water and sanitation are also unclear: How much is spent on human resources to reach the ambitious targets of the UN Sustainable Development Goals?

With India's decentralised approach to WASH service provision, the GPs and VWSCs play important roles in operations and maintenance, yet there is little information about their performance, budget allocations and spending. Tracking these funds would help determine how to prevent habitations from slipping back. Accountability is especially urgent now that O&M funds from NRDWP may be transferred from the RWSS to the GPs.

Interviews with district authorities and VWSC representatives indicate that the revenue from tariffs is often insufficient to cover recurrent O&M costs. The fees are low and only households with their own connection pay. Setting up an appropriate tariff structure to cover O&M and identifying tariff collection bottlenecks would be essential to improve O&M and prevent premature breakdown of water infrastructure.

Further research might also track how the funds for scheduled castes and scheduled tribes are being spent, given India's objectives for social inclusion. The national government has called for improving water and sanitation services for these vulnerable populations, but how funds are being spent at the state and district levels is difficult to determine. Finally, since Goal 6 of the Sustainable Development Goals seeks improvements in both WASH and integrated water resources management, future work should explore the public finance mechanisms for water management and how they relate to WASH at state and district levels.

Several organisations are tracking budgets and funding flows in the WASH sector in India. The Centre for Budget and Governance Accountability analyses national and state water and sanitation budgets and publishes reports and newspaper articles on its findings. The Centre for Youth and Social Development, an NGO based in Odisha (Bhubaneswar), tracks budgets at state and district levels, including Ganjam district; it also engages civil society organisations in the state government's budget process by organising pre-budget consultations with the state government.

Advocacy messages

- Emphasis on sanitation infrastructure raises concerns about the sustainability, use and waste management of the toilets being built.
- The government focuses on increasing sanitation. Still, some 114 million rural citizens lack safe drinking water; more investment in the rural drinking water sector would be justifiable.
- It is unclear how much investments from various sources are needed to achieve India's drinking water and sanitation goals.
- The financing of operations and maintenance of drinking water systems at the district level is unclear, with both RWSS and the Gram Panchayats receiving O&M funds. Confusion about who pays for what makes accountability difficult.
- The Village Water and Sanitation Committees (community level institutions responsible for water and sanitation as per government guidelines) should be in place and functioning. These institutions would require capacity building.
- The GPs' and VWSCs' budgets, plans, expenditures and implementation of O&M activities should be more transparent and accessible for citizens. Villagers should be able to request support for accessing water and sanitation services.
- Water tariffs and fees, paid only by those with households connections, are insufficient to cover recurrent costs for services. Modifications to the fee structure are needed.
- Missing information at the state level includes expenditures by cost category and statistics on the functionality and quality of water services.
- A major direct support expenditure—state and district staff salaries—is not covered by the NRDWP. Future work should explore what direct support expenditures are needed for sustainable services.

Some tips for exploring public finance for water and sanitation in India

- India's public finance structure is explained in CBGA's [Budget primer](#).
- The costs of drinking water and sanitation systems are detailed in the [life-cycle costs approach](#) developed by IRC.
- The funding sources for the water sector—taxes, tariffs and transfers, called the 3Ts—are described in [Managing Water for All](#), a report from the Organisation for Economic Co-operation and Development.
- The online Integrated Management Information System of the Ministry of Drinking Water and Sanitation provides data on physical and financial progress in [NRDWP](#) and [SBM-G](#). These data need to be cross-checked with state and district budgets.
- At the district level, progress toward WASH goals is often organised by division (not district).
- The fiscal year in India runs 1 April to 31 March. The Union budget is presented in February, after which the state budgets are presented.

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Annex 1. Interviewees

Former RWSS Odisha official Mr. Bibekananda Mohapatra assisted the author in the stakeholder interviews, conducted in December 2016.

Research institutes and organisations

- Centre for Budget and Governance Accountability (CBGA)
- Centre for Youth and Social Development (CYSD)
- Centre for Policy Research (CPR)

RWSS at Odisha State level

- Chief engineer, rural water
- Chief engineer, sanitation
- IEC coordinator

RWSS at Ganjam district level

- Superintendent engineer (covers 4 districts)
- Executive engineer, Bhanjanagar division
- Executive engineer, Berhampur division
- 2 assistant executive engineers
- District project coordinator
- District consultant, hygiene and sanitation
- 2 district consultants IECD, HRD

Village level

- President of the Banabullapalli Village Water and Sanitation Committee
- President of the Goba Village Water and Sanitation Committee
- President of the Kiluapolli Self-Help Group
- Sarpanch Gram Panchayat (Banabullapalli)
- Community members

Visiting address

Bezuidenhoutseweg 2
2594 AV The Hague
The Netherlands

Posting address

P.O. BOX 82327
2508 EH The Hague
The Netherlands

T +31 70 3044000

info@ircwash.org
www.ircwash.org