

WASH Cost tool

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In cooperation with:



From MDG 7 to SDG 6: The ladder has gone up from access to basic services to safely managed services



- SDGs have undergone important changes compared to MDGs, with implications for both WASH sector needs and financing.
- **Considering the impact of SDG 6 on other SDGs, every country need to develop the funding streams and financing mechanisms to achieve SDG 6.**

The WASH SDG Costing Tool is an Excel-based cost model, used to estimate the costs of achieving the SDG WASH targets

Background

- The WASH SDG costing tool was developed for country application by UNICEF and the World Bank based on the global costing study implemented by the World Bank¹.
- This guideline was developed collaboratively by the SWA Secretariat and UNICEF.

- The cost data in this tool were gathered from the best available secondary sources (i.e. available published and grey literature and other databases) and WASH access rates were gathered from JMP 2015 report

- **The data used in this tool were updated with recent data by countries that participated in the Sanitation and Water for All (SWA) High-level Meetings in April 2017.**
- **Around 30 countries used the tool, and substituted some of the data inputs used by the World Bank study with better local estimates based on expert consultations and alternative data sources.**

- The model estimates the costs of meeting basic WASH standards (like the MDG definitions) as well as the safely managed standard defined by the SDG indicators 6.1.1 and 6.2.1, and presents costs by rural and urban areas and by population wealth quintile.

- This tool estimates cost for achieving universal access to water, sanitation and hygiene for households, using the locally vetted data

Source: Sanitation and water for all, 2018, The tool is retrieved from <http://sanitationandwaterforall.org/priority-areas/political-prioritization/costing-tool/> on 14-8-2018,

¹ Hutton G. & Varughese M. (2006). "The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene". The World Bank. Water and Sanitation Program.,

Note: The downloaded was protected but for the analysis purpose it has been unprotected.

About the Tool

Tool estimates the cost for achieving Universal Basic WASH services and Universal Safely managed WASH services for Urban and Rural area of the country

SERVICE	RURAL / URBAN
Basic Water	Urban
	Rural
Safely Managed Water	Urban
	Rural
Basic Sanitation (onsite only)	Urban
	Rural
Any fixed point defecation	Rural
Safely Managed Sanitation (fecal sludge management or sewerage only)	Urban
	Rural
Handwashing with soap	Urban
	Rural

Services covered in tool	Urban	Rural
Ending OD	No	Yes
Universal Basic Water and Sanitation services	Yes	Yes
Universal Safely managed Water and Sanitation services	Yes	Yes
Handwashing with soap	Yes	Yes

The model gives you total per capita financial cost requirement with sources of finances

SERVICE	RURAL / URBAN	TECHNOLOGY	HOUSEHOLDS WITH TECH. OPTION	SERVICE COVERAGE LEVEL 2015	COVERAGE TARGET 2030	FINANCIAL COST PER CAPITA (US\$ in 2016) with DISTRIBUTION OF COST RECOVERY											
						CAPITAL COSTS (TOTAL)						MAINTENANCE COSTS (TOTAL)				OPERATING COSTS (ANNUAL)	
						COSTS			COST RECOVERY (%)			COSTS		COST RECOVERY (%)		COSTS	COST RECOVERY (%)
						CapEx	Software	Duration	Customer	Subsidy	CapManEx	Duration	Customer	Subsidy	OpEx	Customer	Subsidy
Basic Water	Urban	Tubewell	50%	96%	100%	296.3	14.8	-20	20%	80%	88.9	-10	20%	80%	10.9	80%	20%
		Dug well	50%			19.9	1.0	-10			6.0	-5			1.0		
	Rural	Tubewell	50%	82%	100%	247.0	12.4	-20	20%	80%	74.1	-10	20%	80%	13.3	80%	20%
		Dug well	50%			49.4	2.5	-10			14.8	-5			2.4		

- The tool gives the total costs of operating and maintaining WASH services for each technology.
- It includes..
 - CapEx -cost for infrastructure creation(CapEx) and for awareness generation(software)
 - CapManEx (cost for major maintenance or renovation) and
 - OpEx (day to day operation cost)
- Duration gives the life of the hardware.

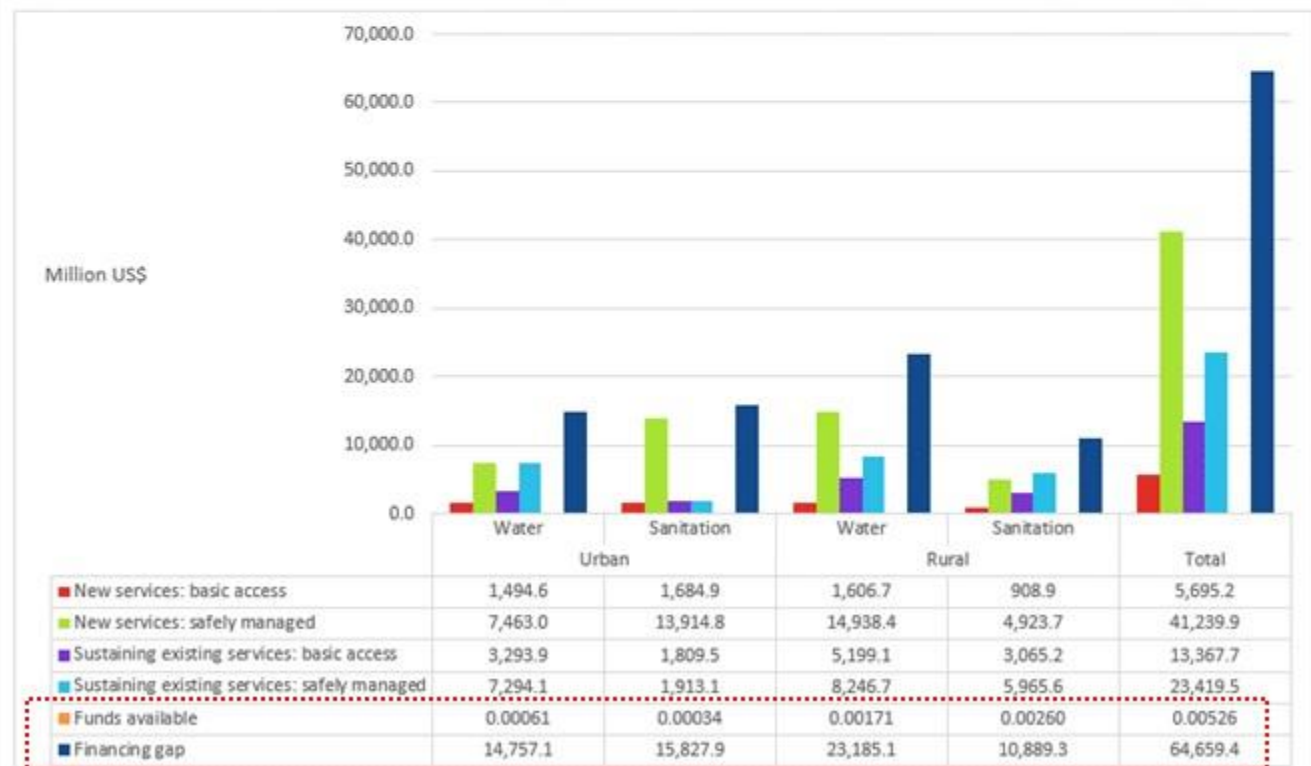


- Based on the budget available from public or donor funds, a combination of customers' contribution and government's subsidy can be set in this tool.

Identify Financing Gap and source of finances

- If the data on WASH expenditures made in the latest fiscal year by the country is available then financing gap to achieve the target can be identified and to remove the funding gap various sources of finance (Households and Subsidy from the tool) can be explored.

Figure 9a. Financing gap: current public funding compared with annual costs intended to be met from public funds, in million US\$



FINANCIAL COST PER CAPITA (US\$ in 2016) with DISTRIBUTION OF COST RECOVERY											
CAPITAL COSTS (TOTAL)					MAINTENANCE COSTS (TOTAL)				OPERATING COSTS (ANNUAL)		
COSTS			COST RECOVERY (%)		COSTS		COST RECOVERY (%)		COSTS	COST RECOVERY (%)	
CapEx	Software	Duration	Customer	Subsidy	CapManE	Duration	Customer	Subsidy	OpEx	Customer	Subsidy
296.3	14.8	-20	20%	80%	88.9	-10	20%	80%	10.9	80%	20%
19.9	1.0	-10			6.0	-5			1.0		
247.0	12.4	-20	20%	80%	74.1	-10	20%	80%	13.3	80%	20%
49.4	2.5	-10			14.8	-5			2.4		
493.9	49.4	-20	20%	80%	148.2	-10	20%	80%	22.3	80%	20%
444.5	44.5	-20	20%	80%	133.4	-10	20%	80%	16.7	80%	20%
118.3	23.7	-20	20%	80%	35.5	-10	20%	80%	9.1	80%	20%
102.9	10.3	-8	20%	80%	30.9	-4	20%	80%	6.7	80%	20%
102.9	10.3	-8	20%	80%	30.9	-4	20%	80%	8.2	80%	20%
7.7	10.3	-8	20%	80%	2.3	-4	20%	80%	0.5	80%	20%
10.2	5.1	-2	20%	80%	3.1	-1	20%	80%	0.5	80%	20%
711.3	71.1	-20	20%	80%	213.4	-10	20%	80%	43.3	80%	20%
128.6	12.9	-20			38.6	-10			9.2		
57.5	5.7	-20	20%	80%	17.2	-10	20%	80%	2.8	80%	20%
246.5	24.7	-20	20%	80%	74.0	-10	20%	80%	5.4	80%	20%
0.6	1.1	-3	20%	80%	0.2	-1.25	20%	80%	1.1	80%	20%
0.5	1.1	-10	20%	80%	0.1	-5	20%	80%	1.9	80%	20%

Tool Results

From the tool following results can be drawn for the country:

1. Demographic and WASH coverage: Total population to be served by 2030 and WASH service coverage
2. Overall universal basic and safely managed WASH cost for Urban and Rural : CapEX, CapManEx, OpEx.
3. Overall cost as a % of GDP
4. Annual financing required from public sources and the consumer - based on cost sharing ratios
5. Funding gap based on available public funding and cost sharing required from public sources

- Based on this results, country can identify focus areas (Urban or Rural) and can prioritize actions for (Water or Sanitation) service provision to achieve SDG 6.1 and 6.2 by 2030.
- Country can make annual plans based on the fund requirements.
- To meet the fund requirement gaps country can mobilize funds from different sources.

Tool Limitation

- OD value for urban areas is not considered
- Data on funds allocated by national and subnational government need to be identified by the users from various sources and if the data is not available then funding gap (Graph 9a.) can not be identified

Exercise Questions

1. Do overall analysis to identify...
 - Total population to be served by 2030
 - Total financing requirement to achieve the target set by the country
 - Financing gap
2. What is the overall cost as a % of your country's GDP?
3. What should be the cost sharing ratio between HHs and Government to recover the cost? Why?
4. The identified cost recovery ration will be of what % of the per capita HH income of your country?

Exercise steps (1/2)

STEP 1: SELECT COUNTRY

India

STEP 2: VERIFY AND ADJUST COUNTS

Please verify the data below and, if deemed necessary, adjust these figures to reflect country level data by deleting the formula and entering a revised figure.

The cells in the table are colour coded according to the variable type, as follows:

TECHNOLOGY	Input
COVERAGE LEVEL IN 2015	
COVERAGE IN TARGET YEAR	
COSTS	
COST RECOVERY	
DISCOUNT RATE	
LOCAL CURRENCY EXCHANGE RATE	

Values can be changed from JMP 2017

SERVICE	RURAL / URBAN	TECHNOLOGY	HOUSEHOLDS WITH TECH. OPTION	SERVICE COVERAGE LEVEL 2015	COVERAGE TARGET 2030	FINANCIAL COST PER CAPITA (US\$ in 2016) with DISTRIBUTION OF COST RECOVERY											
						CAPITAL COSTS (TOTAL)						MAINTENANCE COSTS (TOTAL)				OPERATING COSTS (ANNUAL)	
						COSTS			COST RECOVERY (%)			COSTS		COST RECOVERY (%)		COSTS	
CapEx	Software	Duration	Customer	Subsidy	CapManE	Duration	Customer	Subsidy	OpEx	Customer	Subsidy	Customer	Subsidy				
Basic Water	Urban	Tubewell	50%	96%	100%	296.3	14.8	-20	20%	80%	88.3	-10	20%	80%	10.3	80%	20%
		Dug well	50%			19.9	1.0	-10			6.0	-5			1.0		
	Rural	Tubewell	50%	82%	100%	247.0	12.4	-20	20%	80%	74.1	-10	20%	80%	13.3	80%	20%
		Dug well	50%			49.4	2.5	-10			14.8	-5			2.4		
Safely Managed Water	Urban	Safely managed water	100%	78%	100%	493.9	49.4	-20	20%	80%	148.2	-10	20%	80%	22.3	80%	20%
	Rural	Safely managed water	100%	33%	100%	444.5	44.5	-20	20%	80%	133.4	-10	20%	80%	16.7	80%	20%
Basic Sanitation (onsite only)	Urban	Septic tank	50%	87%	100%	118.3	23.7	-20	20%	80%	35.5	-10	20%	80%	3.1	80%	20%
		Pit latrine	50%			102.9	10.3	-8	20%	80%	30.3	-4	20%	80%	6.7	80%	20%
	Rural	Wet pit latrine	50%	78%	100%	102.9	10.3	-8	20%	80%	30.3	-4	20%	80%	8.2	80%	20%
		Dry pit latrine	50%			7.7	10.3	-8	20%	80%	2.3	-4	20%	80%	0.5	80%	20%
Any fixed point defecation	Rural	Any latrine, including unimproved	100%	89%	100%	10.2	5.1	-2	20%	80%	3.1	-1	20%	80%	0.5	80%	20%
Safely Managed Sanitation (fecal sludge management or sewerage only)	Urban	Sewerage with treatment	50%	6%	100%	711.3	71.1	-20	20%	80%	213.4	-10	20%	80%	43.3	80%	20%
		Septic tank with treatment	50%			128.6	12.9	-20	20%	80%	38.6	-10	20%	80%	3.2	80%	20%
	Rural	Pit latrine with treatment	50%	34%	100%	57.5	5.7	-20	20%	80%	17.2	-10	20%	80%	2.8	80%	20%
		Sewerage with treatment	50%			246.5	24.7	-20	20%	80%	74.0	-10	20%	80%	5.4	80%	20%
Handwashing with soap	Urban	Station with soap and water	100%	93%	100%	0.6	1.1	-3	20%	80%	0.2	-1.25	20%	80%	1.1	80%	20%
	Rural	Station with soap and water	100%	84%	100%	0.5	1.1	-10	20%	80%	0.1	-5	20%	80%	1.9	80%	20%

DISCOUNT RATE	5%
LOCAL CURRENCY PER US\$	70.0
CURRENCY (SHORT FORM)	INR

Step 1: Go to Data verification sheet

Step 2: Select your country (Cell no E4)

Step 3: Change discount rate, currency exchange rate and abbreviation for your country (Cell no D41,D42,D43)

Step 4:

You can priorities the suitable technology for the country and can change the coverage target for your country

Step 5:

You can change % of cost recovery share for households and government

Exercise steps(2/2)

STEP 3: ENTER FINANCIAL DATA ON WASH EXPENDITURES BELOW

Location and sub-sector		United States Dollars (US\$) in 2016 Prices VALUE OF EXPENDITURE / BUDGET			
SUB-SECTOR	RURAL / URBAN	NATIONAL BUDGETS SPENT	SUB-NATIONAL BUDGETS SPENT	CURRENT ODA (loans or repayable financing)	CURRENT ODA (grants and voluntary transfers)
Water supply	Urban	609			
	Rural	1,709			
Sanitation and hygiene	Urban	342			
	Rural	2,604			
WASH spending, not disaggregated	Urban				
	Rural				
Total	Urban	951			
	Rural	4,314			

Step 6 (If data is available):

Enter financial data on WASH expenditures : the values to be entered can be drawn directly from the GLAAS survey financing section for 2016/17 (section D) or from some other authentic source



GLAAS-2017-full-country-dataset

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER ADD-INS

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DY8 D11a. Urban water supply expenditure (millions, current 2016 USD)

	A	B	C	DY	DZ	EA	EB	EC	ED	
1	GLAAS 2017 Country Survey Data									
2	July 4, 2018									
3	Note: See worksheet 'Section D Response Code' for details									
4	Section D: Financing									
5	ISO3	ISO2	Country							
6	ISO3	ISO2	Country	D11a. Urban water supply expenditure (millions, current 2016 USD)	D11a. Urban water supply expenditure (millions, constant 2016 USD)	D11a. Rural water supply expenditure (millions, current 2016 USD)	D11a. Rural water supply expenditure (millions, constant 2016 USD)	D11a. Total sanitation expenditure (millions, current 2016 USD)	D11a. Total sanitation expenditure (millions, constant 2016 USD)	D11a. Total sanitation expenditure (millions, current 2016 USD)
7										
8										
9	IND	IN	India	608.7	608.7	1709.2	1709.2	2946.6	2946.6	
















































INTRODUCTION DATA VERIFICATION SHEET SDG COSTING SUMMARY REPORT (5)











The dataset can be retrieved from https://www.who.int/water_sanitation_health/monitoring/investments/glaas-2016-2017-cycle/en/
Download GLAAS 2016/2017 full country dataset xlsx, 1.20Mb

Share your answers...

1. Do overall analysis to identify...
 - Total population to be served by 2030
 - Total financing requirement to achieve the target set by the country
 - Financing gap
2. What is the overall cost as a % of your country's GDP?
3. What should be the cost sharing ratio between HHs and Government to recover the cost? Why?
4. The identified cost recovery ration will be of what % of the per capita HH income of your country?

List of Per capita income of lower middle and lower income countries

Rank	Country	GNI per capita (US\$)[1]	Rank	Country	GNI per capita (US\$)[1]
108	 Eswatini	3,850	131	 Ghana	2,130
109	 Indonesia	3,840	132	 Nicaragua	2,030
110	 Philippines	3,830	133	 Uzbekistan	2,020
111	 El Salvador	3,820	133	 India	2,020
112	 Palestine	3,710	135	 Solomon Islands	2,000
113	 Mongolia	3,580	136	 Nigeria	1,960
113	 Micronesia	3,580	137	 São Tomé and Príncipe	1,890
115	 Tunisia	3,500	138	 East Timor	1,820
116	 Cape Verde	3,450	139	 Zimbabwe	1,790
117	 Bolivia	3,370	140	 Bangladesh	1,750
117	 Angola	3,370	141	 Republic of the Congo	1,640
119	 Kiribati	3,140	142	 Kenya	1,620
120	 Morocco	3,090	143	 Ivory Coast	1,610
121	 Bhutan	3,080	144	 Pakistan	1,580
122	 Moldova	2,990	145	 Sudan	1,560
123	 Vanuatu	2,970	146	 Cameroon	1,440
124	 Egypt	2,800	147	 Zambia	1,430
125	 Ukraine	2,660	148	 Senegal	1,410
126	 Papua New Guinea	2,530	149	 Lesotho	1,380
127	 Laos	2,460	149	 Cambodia	1,380
128	 Vietnam	2,400	151	 Comoros	1,320
129	 Honduras	2,330	152	 Myanmar	1,310
130	 Djibouti	2,180	153	 Kyrgyzstan	1,220
			154	 Mauritania	1,190

Rank	Country	GNI per capita (US\$)[1]	Rank	Country	GNI per capita (US\$)[1]
155	 Tanzania	1,020	168	 Burkina Faso	660
156	 Tajikistan	1,010	169	 Togo	650
157	 Yemen	960	170	 Uganda	620
157	 Nepal	960	171	 Liberia	600
159	 Benin	870	172	 Afghanistan	550
160	 Mali	830	173	 Sierra Leone	500
160	 Guinea	830	174	 Democratic Republic of the Congo	490
162	 Haiti	800	175	 Central African Republic	480
163	 Ethiopia	790	176	 Mozambique	440
164	 Rwanda	780	176	 Madagascar	440
165	 Guinea-Bissau	750	178	 Niger	380
166	 Gambia	700	179	 Malawi	360
167	 Chad	670	180	 Burundi	280

END

Suggested citation: Mehta, M., Mehta, D. (2019). WASH Cost tool. Course material for Master of Science Programme in Sanitation, IHE Delft, Netherland.