

The WASH-Flows tool



SEI fact sheet November 2023

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WASH-Flows is an analytical tool to estimate and assess the vulnerability of water, sanitation and hygiene (WASH) services at the household and community level.

The WASH-Flows tool was created to fill the need for a more integrated representation of WASH services in watershed planning, as the two sectors traditionally have different scales of analysis.

When household information is aggregated, it is possible to gain insight into the status of WASH services in communities. Such aggregation also allows estimates of how WASH interventions at the household level may influence water balance, quality and distribution at the community and watershed scale.

The tool is meant to assist planners, practitioners, and local governments to assess the progress towards the targets for Sustainable Development Goal (SDG) 6, as well as prioritize WASH interventions to leave no one behind in both rural and peri-urban settings.

Background

Low- and middle-income countries face challenges in achieving sustainable and equitable WASH services that can improve both human and ecosystem health. One of these challenges, particularly in most Latin American countries, is the need to improve data about WASH services at the local level to better guide policy and interventions to address inequalities and sustainable use of water resources. This implies moving beyond infrastructure access to also focus on matters of accessibility, availability, continuity and quality of services.

The WASH-Flows tool was created and developed under the Bolivia WATCH (WASH Thinking Connected to Hydrology) Program, financed by the Swedish International Development Cooperation Agency, Sida.

Development of the tool originated in response to the need for tools that could estimate WASH service levels at the community level through a robust methodology and based on criteria to monitor global progress on SDG 6. The WASH-Flows tool was designed following the "service ladders" methodology created by the Joint Monitoring Programme (JMP) developed by the UN Children's Fund (UNICEF) and the World Health Organization (UNICEF & WHO, 2018).

IMAGE (ABOVE): Woman collecting water from a rural reservoir tank, Taucachi community, La Paz, Bolivia
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Using a Microsoft Excel interface, the tool comprehensively represents the simplified conditions of WASH services at the community level through quantitative analysis and graphical representations. The WASH-Flows tool includes functionalities and provides quantitative results that can either be used on its own or applied in connection to a watershed scale modelling tool such as the Water Evaluation And Planning (WEAP) system.

Tool objectives

- Transform qualitative information into quantitative data to assess the current state and vulnerability of WASH services.
- Assess progress of WASH services at the community level in relation to national and SDG 6 goals.
- Provide an overview of WASH service vulnerabilities so that users can make more informed decisions regarding prioritization of WASH interventions.
- Estimate contamination loads to the environment from existing inadequate sanitation infrastructure or practices.
- Compare how different water and sanitation infrastructure alternatives can improve current WASH service levels in a community.
- Provide information on water demand and wastewater flows at the community level that can be used as input data in water resources management software, to solve and improve water allocation at rural and peri-urban scales in a more comprehensive manner.

How the tool works

The WASH-Flows tool requires data on WASH infrastructure, location, quality, accessibility, availability, management and final disposal of human excreta and wastewater at the household level. Based on available data or possibilities for data collection, the user enters household or community data into a Microsoft Excel spreadsheet, where a series of calculations are performed, returning estimates in the form of graphs, summary tables and a matrix that categorize the current status of WASH services at the community level.

Formulas used and inferences established in the Microsoft Excel spreadsheets not only estimate the level of WASH services, but they also provide estimates of the water demand and return flows at the community level. The accuracy depends on the quality of information input that describes the WASH infrastructure.

Applications

Currently the tool in its beta version has been applied in three watersheds in Bolivia: Tupiza (Claire et al., 2023), Pampa Huari and Choqueyapu-La Paz.

After a showcase of the WASH-Flows tool at the Latin American Sanitation Conference in October 2022, interest has increased in its use in countries such as Guatemala, México, Perú, Colombia and Spain.

Between August and September 2023, SEI conducted trainings on the use of the tool for government agencies in Guatemala, as well as for researchers, practitioners and local governments in Bolivia.

Year launched: 2022

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Tool purpose:

- Decision-support (planning and policy)
- Awareness raising and learning
- Research/analytical
- Guidance

Relevant sector(s)

- Water, sanitation and hygiene
(facilitating WASH data monitoring at the community level and improving WASH planning in line with SDG 6 goals)
- Governance
(empowering people and communities, improving policy and building effective institutions)
- Health
(interconnections and synergies between human health and environmental sustainability)
- Integrated Water Resource Management (IWRM)
(improving watershed planning and water resources management by including WASH data in the multi-sectorial, integrated water allocation and environmental issues in river basins)

Scales of focus

- Urban
- Peri-urban
- Rural

Target users:

- Water and sanitation utilities
- Local governments
- Planners
- WASH practitioners
- Researchers
- Development agencies

Focus regions

- Global
- Low- and middle-income countries

Tool access

The tool was developed for the context of Bolivia, and will be available via open access once adapted to other regions and languages.

If interested in a demo or learning more, please contact Nhilce Esquivel.

Computer requirements: Microsoft Excel

**Published by**

Stockholm Environment Institute
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104 51 Stockholm, Sweden
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DOI:

<https://doi.org/10.51414/sei2023.052>

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Editor: Naomi Lubick

Layout: Richard Clay

References:

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