VALUING IMPACT

WASH IMPACT VALUATION FRAMEWORK (WIVF)

Working paper

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Disclaimer

The views expressed in this publication are those of the authors and not necessarily those of the project sponsors (Reckitt and WaterAid). This report presents a new methodology for impact valuation in the context of WASH projects. The approach and results are based on current best practices and assumptions, and may require adaptation to specific contexts. The findings should be interpreted as illustrative and are not a substitute for detailed, case-specific analysis.

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Foreword

"The WASH Impact Valuation Framework helps businesses better understand the impact and SROI of their investments into WASH programmes. It is an important contribution to build stronger business cases and assess comparative programme effectiveness leading to better investment decisions and improved outcomes for vulnerable communities around the world."

Philipp Küst, Social Impact Manager at Reckitt

"The WASH Impact Valuation Framework is so powerful because it shifts the idea of company investments in water access, sanitation, and hygiene from purely beneficiary counting towards critical societal impacts. It further builds the business case to show that WASH investments are key to business resilience and societal well-being. Fundamentally it enables us to make better investments for the most vulnerable communities."

Mai-Lan Ha, Director of Private Sector Policy and Advocacy, WaterAid

"This report helps close a critical information gap for corporate water stewardship practitioners. With the WASH Impact Valuation Framework companies and other organizations now have a way to quantify the societal and business value created through their WASH initiatives and projects. This is a must-read for anyone wanting to make a difference with WASH projects and a huge step forward in helping move companies from wanting to have an impact to being able to demonstrate their impact."

Paul Reig, CEO and Founder of Bluerisk

"WASH4Work is pleased to see the direct synergies of this work with the WASH Benefits Accounting Framework. The impact valuation of WASH projects proposed in this report is an important contribution to advancing leading practice on WASH."

Cheryl Hicks, Senior Advisor, WASH4Work, CEO of Water Mandate

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Key insights

The water, sanitation, and hygiene (WASH) Impact Valuation Framework (WIVF) presents a standardized methodology to measure societal and business value, as well as the social return on investment across different WASH initiatives.

The WIVF builds on existing accounting methods, most notably the WASH Benefits Accounting Framework by WASH4Work, as its foundation for defining outputs and outcomes, ensuring strong alignment within the WASH impact assessment field. However, the WIVF **extends the impact assessment process allowing the measurement of outputs and outcomes,** introducing an additional step—the valuation of impact pathways.

The impact valuation step brings comparability and consistency to fundamentally different impact drivers and data points, unleashing valuable insights for decision-making, improved due diligence, and optimized selection of WASH projects.

The WIVF has already been successfully applied in over 30 countries. The insights and evidence gathered from the extensive case studies have been instrumental in shaping project strategies, leading us to make the framework broadly available for wider use and collaboration.

This report is oriented to individuals and organizations tasked with making investment decisions related to WASH and to project owners and entities responsible for the practical implementation and oversight of these WASH projects.

The aim of the report is as follows:

- **Analysis:** To provide an in-depth understanding of impact drivers, the root causes of those outcomes, and their materiality, beyond just counting the number of beneficiaries. Case studies have found that health and well-being outcomes are the most relevant impact drivers of WASH initiatives.

- **Decision-making:** To inform decision-making and strategy development for WASH projects. WIVF provides monetized results that can be used to compare projects' performance and allocate resources efficiently, improving the selection of WASH projects and leading to better investment decisions. Case studies illustrate that traditional metrics, such as the number of beneficiaries and societal value, are poorly correlated thus potentially misleading decisions.

- **Strategy development:** To inform project owners of their impact and performance and support them in developing strategies and project designs to deliver higher impact. The WIVF also helps identify projects' risks and the potential negative impact of activities.

- **Communication and engagement:** To help communicate and highlight the value of WASH and water stewardship investments by showcasing innovative perspectives on water valuation and demonstrating the leadership of project partners, using simpler and more accessible language and impact results.

- **Scale-up impact:** To advance the business case for WASH projects and unlock further investments that contribute to a broader, more impactful approach.

Moving forward, we aim to:

- Transition from this working paper to an established standard that reflects collective efforts and practices, engaging more stakeholders in the next phase of the project.

- Encourage additional pilot tests to expand practical implementation and learning, supporting better decision-making and advancing standardization.

- Invite stakeholders to join us in the next phase and contribute to shaping the framework as we move forward.

1.

Introduction

The risks associated with inadequate drinking water, sanitation, and hygiene (WASH) services represent one of the biggest challenges in our society. Half of the world's population still does not have adequate access to these services[1].

A lack of access to WASH services can lead to social, economic, and environmental consequences. These include increased rates of illness and fatalities; the spread of zoonotic diseases, such as cholera and leptospirosis; diminished productivity; reduced market opportunities; and various environmental challenges, such as water pollution and soil degradation. Socially, communities may experience rising inequality, reduced educational opportunities due to illness, and a lower quality of life. Additionally, inadequate sanitation can contribute to the contamination of water sources and harm local biodiversity, further exacerbating these issues. Economically, businesses may face operational disruptions, issues in their supply chain, higher healthcare costs, lower workforce efficiency, and reputational risks. It is estimated that diarrheal diseases from poor sanitation cost the global economy about USD $4 billion annually in lost productivity and absenteeism[2].

Companies, investors, and non-governmental organizations (NGOs) worldwide are increasingly participating in corporate water stewardship programs, which target WASH access and behavior change projects. They are driven by various motives, such as securing licenses to operate and business continuity, fulfilling corporate social responsibility commitments, creating social impact, reducing operational costs, and managing compliance, risks and reputation. There is a strong and evident economic argument for businesses to lead in addressing this issue. Many companies operate in regions where access to basic WASH services is limited, affecting their employees, contractors, customers, and overall operations. Water is essential not only for production processes at company sites but often also for consumers to effectively use the products.

This places companies and investors in a unique position to address these challenges. By leveraging their resources and influence, companies, investors, and NGOs worldwide can positively impact billions of people by implementing effective WASH solutions, mitigating risks, and enhancing social, economic, and environmental outcomes. These solutions benefit their factory, farm, store, and office workers, as well as their suppliers, distributors, and customers who purchase and use their products and services.

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1 UNICEF, 2023. https://data.unicef.org/topic/water-and-sanitation/sanitation/

2 WBCSD, 2018. WASH Pledge impact report: Maximizing the business contribution towards water, sanitation, and hygiene.

In this context, recent advancements in WASH impact accounting and reporting—most notably, the WASH Benefits Accounting Framework by WASH4Work[3]—have provided valuable tools to better measure the output and outcomes of WASH initiatives.

There are still significant challenges that remain in informing impactful decision-making, in particular the lack of comparability, exhaustivity and relevance of results. There is also a need to deepen our understanding of the impact of drivers across different initiatives and contexts, as over half of WASH projects reportedly fail to sustain their impact, with data collection and reporting often limited to basic metrics, such as the number of people reached, or the volume of water delivered.

The WASH Impact Valuation Framework (WIVF) aims to address those challenges building on an impact valuation approach. The WIVF has been informed by practical experience collected across more than 30 countries and a large variety of projects, including those of Reckitt[4] and WaterAid[5]. The insights and experience gathered from these case studies have been pivotal in shaping project strategies. As a result, the authors and partners believe it is valuable to share these insights by making the WIVF publicly available.

The results from numerous case studies demonstrate how the WIVF can drive improvements in project design, stakeholder engagement, communication, reporting, and decision-making on capital allocation and strategic planning, thereby addressing sustainability and accountability challenges in WASH programs. The key findings from the case studies also reveal a lack of correlation between societal value creation and traditional metrics, such as the number of beneficiaries or the cost per beneficiary. Some WASH projects may also result in negative outcomes, diminishing their effectiveness and placing undue burdens on beneficiaries. These initiatives often vary in design quality and may overlook contextually relevant factors, potentially leading to costs that do not fully align with the societal value they generate.

1.1 General objective of the WIVF and added-value

The WIVF provides corporate water stewardship practitioners, donors, and investors with a standardized approach, including recommended pathways, methods, and indicators, to quantify WASH initiatives in terms of societal and business value, as well as social return of investment.

The report for making a standardized WIVF publicly available, supplemented with illustrative case studies. This approach aims to further support and improve WASH project outcomes while building on the capacity developed from existing work and practical implementation.

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3 This framework is the outcome of the WASH4Work initiative, which focuses on harmonizing existing WASH impact indicators and streamlining approaches that account for a range of socioeconomic, environmental, and institutional benefits of WASH activities.

4 https://www.reckitt.com

5 https://www.wateraid.org/?global=1

The WIVF expands on existing accounting methods, such as the WASH Benefits Accounting Framework by WASH4Work, the Capitals Coalition protocols, and the social return on investment (SROI). This framework is based on the principle of impact monetization. It allows for the translation of a wide variety of impact metrics across natural (e.g., tCO_2eq, kg phosphorus, and kg particular matter), social (e.g., social benefits and taxes), and human capital (e.g., wages, the feeling of integration, health, and safety) into monetary units.

This brings comparability and consistency to fundamentally different impact drivers and data points, unleashing valuable insights for decision-making, improved due diligence, and optimized selection of WASH projects. Building on this impact valuation method, we have identified the following ways in which the WIVF brings added value:

- **It provides exhaustive coverage across the three types of capital (human, social, and natural) and all impact drivers, enabling a comprehensive assessment and understanding of impact**. The WIVF covers a wide range of pathways, which allows for a detailed understanding of the mechanisms of impact creation and informs project design. It considers interventions such as nature conservation and regeneration and also accounts for indirect outcomes, such as reduced social costs and increased tax revenues. This comprehensive approach ensures that all potential drivers of impact are captured, with the ones with the most material impact highlighted, as well as the associated parameters along the impact pathways to inform projects and activities design.

- **Negative outcomes are integrated into the WIVF, enabling cost–benefit analyses and risk assessment.** The WIVF offers an integrated approach by not only capturing positive outcomes but also integrating potential negative impacts, such as the financial burden on households from facility costs or loan repayments and environmental externalities. This holistic perspective shows the net positive impact, which is the sum of costs and benefits. By addressing often-overlooked negative impacts, the framework helps identify barriers to scaling societal value creation while also supporting risk management, due diligence, and active engagement of project owners to ensure that efforts are not only effective but also sustainable.

- **The valuation of societal value across all types of capital brings consistency and comparability, allowing comparisons among project portfolios.** By systematically capturing the full value of all projects to society, the WIVF allows the comparison of different projects on the same basis. This benchmarking capacity allows us to identify underperforming projects and understand how to improve them. It also helps identify overperforming projects, which can then be replicated. This information will allow for more effective capital or budget allocation to deliver higher societal.

- **The WIFV facilitates engaging stakeholders and communicating the impact of WASH initiatives to a broader audience.** Expressing results and value in monetary terms provides a common language that is easily understood by diverse stakeholders, making it simpler to convey the significance and effectiveness of initiatives. The results can also be linked to financial metrics and building an integrated P&L table allows for the direct comparison of financial information with societal impact.

1.2 Alignment with WASH4Work

The WASH Benefits Accounting Framework, developed by WASH4Work, a coalition of organizations hosted by the CEO Water Mandate, a UN Global Compact partnership[6], has been the recent standard for evaluating WASH projects. This framework was groundbreaking for its comprehensive approach and the detailed guidance it offers project implementers to collect data and assess project performance and multiple benefits for people, communities, and businesses.

The WASH Benefits Accounting Framework focuses on outputs and outcome metrics (vs. outputs), which means it promotes the measurement of direct and indirect benefits resulting from project implementation while systematically considering how those change people's lives.

By adding the extra step of impact valuation to the measurement process, we connect those output and outcome metrics to changes in societal value, specifically in terms of the well-being[7] of the targeted population. This way the WIVF consolidates different and otherwise incompatible metrics into a single indicator. This impact valuation step brings comparability and consistency to the impact measurement process, allowing organizations to achieve the following:

- **Identify impact drivers** from projects with multiple dimensions.
- **Compare projects' social return of investments and allocate resources efficiently** improving the selection of WASH projects, and leading to better investment decisions.
- **Communicate results and engage with stakeholders using simpler and more accessible language** to facilitate effective engagement between project developers and stakeholders.
- **Identify projects' risks and the potential negative impacts** of activities.
- **Better project design and strategies** to deliver higher societal impact of WASH initiatives to ensure sustainable benefits.

The WIVF recognizes and builds upon the WASH Benefits Accounting Framework developed by WASH4Work. Our goal in creating WIVF is to ensure alignment and compatibility with WASH4Work, enabling organizations to leverage the strengths of both approaches for a more comprehensive impact assessment.

A detailed analysis of the WIVF and the WASH Benefits Accounting Framework by WASH4Work alignment is presented in Appendix I.

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6 https://unglobalcompact.org

7 Well-being does not mean we focus only on human health. Well-being measured is based on the concept of QALY (Quality Adjusted Life Years) and extended by Valuing Impact to measure societal value through a wide range of drivers such as income, education, health, taxes, environmental externalities, and ecosystem services.

2.

The WASH Impact Valuation Framework

This section introduces the general approach to valuing impact and the WIVF, detailing the activities, outputs, and outcomes it covers. The following subsections present the overview of the WIVF framework with the description of the impact pathways, and the subsequent sections go into details of the different parts.

2.1 The general approach to valuing impact

In this subsection, the valuation approach is introduced. The WIVF integrates current leading practices in the impact valuation field by leveraging the Natural Capital Protocol[8], the Social and Human Capital Protocol[9], and the SROI method[10].

This framework is based on the eQALY impact valuation method[11] published by Valuing Impact. This methodology has been successfully applied in various contexts, from single activities and projects to entire businesses and investments. It was chosen for this framework because of its capacity to combine fundamentally different impact measures (e.g., ecosystem services and personal income) into a single impact measure, defined as well-being. Defining a unique, objective, and comparable impact metric (expressed in monetary terms) enhances the relevance of the information for decision-makers and makes it accessible to a broader audience that might otherwise lack access to these insights.

8 Capitals Coalition, 2016.

9 Capitals Coalition, 2019.

10 Social Value International (https://socialvalueuk.org/resources/a-guide-to-social-return-on-investment-2012/).

11 Vionnet et al., 2024. eQALY impact valuation method – A consistent, comparable, and relevant valuation method of well-being to support organizations' decision-making. Valuing Impact.

The eQALY method adheres to the following guiding principles:

Consistency
The pathways, including their impact indicators and valuation techniques, are developed or chosen using the same definition of impact and pathway steps (input, activity, output, outcome, and impact).

Comparability
The impact indicator(s) and valuation techniques used are directly related and ensure comparability, meaning that the same types of valuation techniques need to be used across all defined impact indicators.

Relevance
The defined pathways and impacts are connected to the decision-making context or are explicit in their meaning.

Transparency
The information, data, assumptions, and parameters used in the method for each impact pathway are fully traceable.

To assess impact, the eQALY relies on the concept of the impact pathway, which is a chain of cause–effect events resulting from a particular intervention that ultimately leads to a change in well-being. It is a way of mapping out how an intervention is expected to bring about change affecting different stakeholders, starting from the inputs (resources) and activities, through to the outputs (products) and outcomes (short- and medium-term effects), and ultimately the impact (long-term effects). This logical chain is depicted in Figure 1.

Figure 1

Impact pathway based on WASH4Work and aligned with the WIVF[12]

Pathway	Inputs	Activities	Outputs	Outcomes	Impacts
Definition	The time, resources, and costs that go into the project.	WASH-related interventions.	The tangible, direct changes and deliverables generated through project implementation.	The short-and medium-term changes resulting directly or indirectly from project implementation.	The long-term, lasting changes for people, businesses, and the environment, resulting indirectly from project implementation.

12 WASH4Work, 2024. WASH benefits accounting framework.

Finally, to quantify the impact, the following equation is applied to all the impact pathways identified in a project:

IMPACT PATHWAY

$$\text{Output} \times \text{Outcome} \times \text{Additivity} \times \text{Valuation factor} = \text{Societal value}$$

Whereas:

- **Output** is the direct, measurable result of an activity (e.g., the number of beneficiaries with improved hygiene education). It is often based on primary data collected directly from the activity or the organization performing the activity.
- **Outcome** represents changes in the lives of the target population or natural ecosystem (e.g., improved health due to access to safe water). Since outcomes are more difficult to measure, they are often informed by primary data and/or secondary data or statistics.
- **Additivity** is a multiplier between 0 and 100% that reflects the extent to which the impact measured is happening. This additivity factor can capture various effects, such as the solution's decrease in efficiency over time, the level of impact attributed to each project participant, and the improvement over a baseline.
- **Valuation factor** expresses the change in well-being (QALY) per unit of outcome. It is usually provided in monetary terms to facilitate communication with stakeholders.
- **Societal value** refers to the impact on natural, human, and social capital. In this methodology. We express societal value in terms of change in the well-being of the targeted population. The societal value is then used to estimate the SROI: the ratio between the societal value created and the investment required to achieve it.

More information on the eQALY methodology is available in Appendix II.

2.2 Overview of the WIVF

The WIVF is presented in this subsection, detailing the activities, outputs, and outcomes covered.

The scope of the WIVF covers WASH-related activities (water, sanitation, and hygiene access and education), nature conservation and regeneration activities impacting communities/households, employees/workplaces, supply chains, the environment, and institutional activities, such as capacity building and staff education.

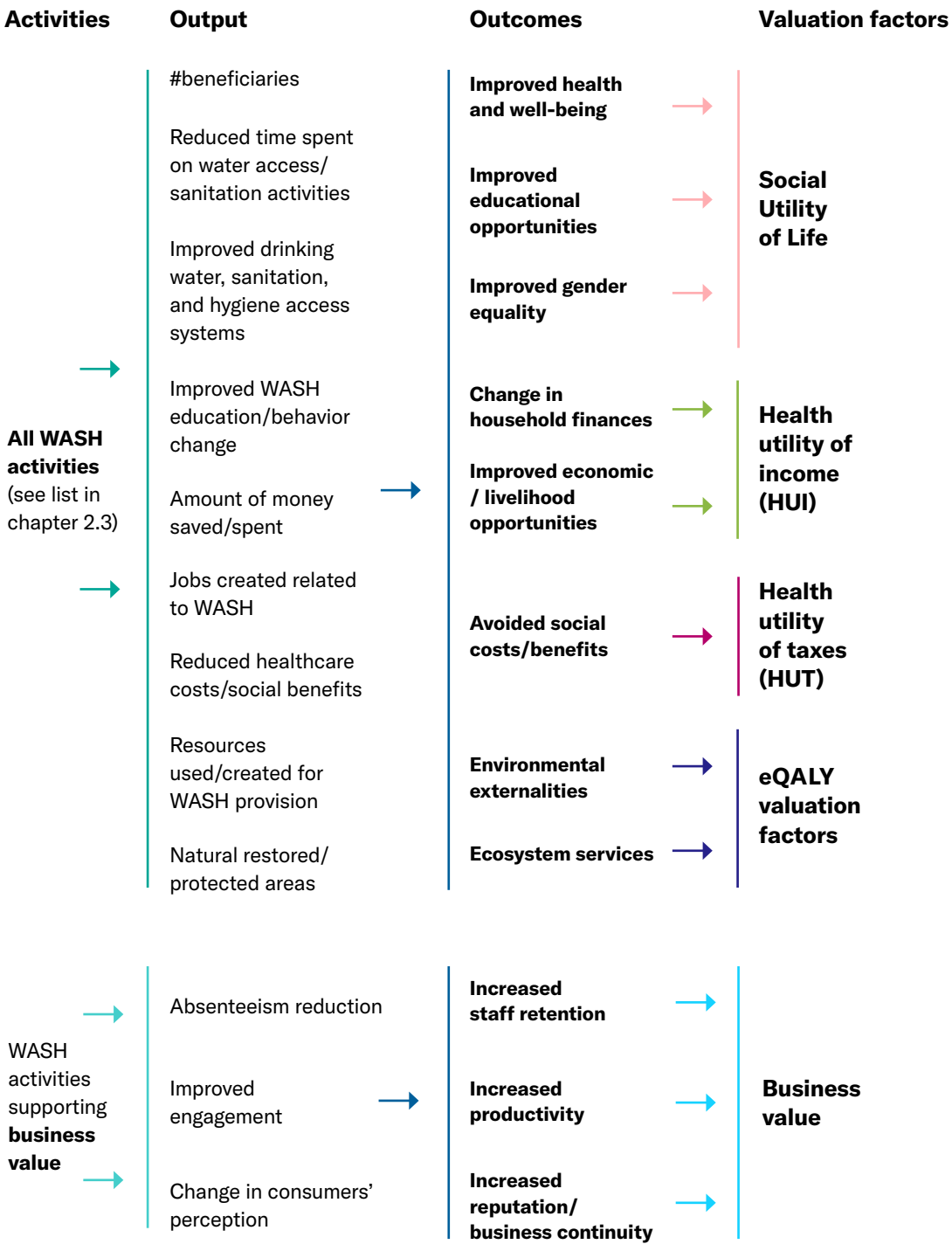
Each activity connects to a list of outputs, which then leads to outcomes. Literally, any activity can lead to any output, and those connections will need to be mapped out specifically for each project assessed. Each outcome uses a specific valuation method and valuation factors, which are summarized in Chapter 2.4 and provided in detail in Appendix III.

Although the WIVF focuses on societal value, we added a section at the bottom of the framework to address business value related to staff retention and productivity as well as business reputation (and sales performance). These business value approaches are also described in Appendix III.

Table 1 presents the WIVF, outlining WASH activities and their expected outputs and outcomes.

Table 1

Overview of the WASH Impact Valuation Framework



2.3 Activities covered by the WIVF

The description and scope of the activities covered by the WIVF are described below:

Water access and education activities
Include the development of infrastructure for sourcing and distributing water, including well construction, household connections, and piped systems. They also involve water collection and storage through rainwater harvesting and tanks as well as water treatment using facilities, household filters, and wetland systems. Additionally, these activities focus on improving efficiency and resilience by reducing water use through advanced technologies and processes, along with providing training and education on sustainable water use, cost recovery, maintenance, management, and water quality.

Sanitation access and education activities
Include developing infrastructure for improved sanitation facilities, such as workplace, household, or community toilets. They also involve wastewater and sewage treatment systems designed to remove pathogens. Furthermore, they include providing training and education on maintaining and managing sanitation infrastructure, addressing gender-specific considerations, and ending open defecation.

Hygiene access and education activities
Include ensuring the availability of handwashing or bathing facilities with soap and water, providing access to adequate menstrual hygiene products and private facilities for washing and changing, and offering training and education on proper handwashing, food hygiene, and menstrual hygiene practices.

Institutional activities
Based on the WASH Benefits Accounting Framework by WASH4Work, include relationships with stakeholders, facilitating community dialogs on social and cultural norms, engaging in water governance, and building capacity through training and data analysis. The WIVF mainly considers the capacity-building dimension, excluding governance.

Nature conservation and regeneration
including activities such as reforestation and the preservation of natural areas, often enhance and support the impact of WASH initiatives (e.g., protecting water sources). Moreover, the WIVF measures the long-term changes experienced by individuals or groups affected by WASH initiatives by focusing on their well-being as a unique indicator of societal value. By using well-being as a standard metric, the framework allows for a comprehensive assessment of the impacts related to economic contributions, environmental benefits, and health outcomes.

WASH activities for business value
Which is the last part of the framework, cover business values alone. Once employees have access to water and sanitation, absenteeism will drop (due to reduced sickness), and turnover will also drop (given that employees will value the work more). Finally, these investments can support licenses to operate and increase the reputation of businesses, which is typically measured in terms of either production cost or sales.

A detailed description of each outcome covered by the WIVF is presented below.

2.4 Summary of outcomes and the impact valuation method

The WIVF offers a broad range of impact pathways for comprehensively measuring the impact of WASH initiatives.

The impact patterns of the WIVF are described in Table 2, along with their descriptions and valuation approaches. A detailed description of the valuation methodology for each outcome and pathway, including key indicators and data sources, is found in Appendix III.

Table 2

Outcome description and valuation approach

Societal value pathways

Outcome: Improved health and well-being	
Description	**Valuation approach**
WASH interventions that improve water quality, facilitate access to safe water, and provide facilities to enhance sanitation will reduce the incidence of WASH-related diseases, thereby improving health and well-being. This pathway can also cover other health or well-being benefits, such as reductions in gender violence or social integration.	Change in health is measured as the improvement in quality of life measured in Disability Adjusted Life Years (DALYs) avoided due to a reduction in WASH-related diseases or other causes. The WHO and The Lancet provide a full list of DALYs per country per WASH-related causes. The DALY equation allows us to account for additional health and well-being outcomes by considering disability weight and duration. The DALY is monetized through the concept of the social utility of life, assuming the ideal economic productivity of a human being as a proxy for the social utility of life. We use the average OECD GDP per capita as a proxy for the value of DALY (constant for the entire world).
Outcome: Improved educational opportunities	
Description	**Valuation approach**
This is regarding WASH interventions that decrease school absenteeism. By improving WASH services, children can spend more time in school due to fewer sick days and reduced responsibilities related to water collection. Additionally, most WASH projects embed some level of capacity-building and training that will also equip participants (e.g., educators, volunteers, or employees) with valuable skills that can enhance their career and job opportunities, which is an important aspect considered in this pathway.	The outcome of education/training is the potential future income premium (expressed as extra income per hour or day of training). The earning premium for education is estimated using the lifelong increment in earnings derived from a specific educational activity. The Health Utility of Income (HUI) factor for a specific location is used to translate the income contribution into a change in well-being. Taxes derived from this income can also be valued using Health Utility of Taxes (HUT) factors.

Outcome: Changes in household finances

Description	Valuation approach
WASH activities have the potential to change household finances and communities through multiple avenues. This includes cost savings, such as health expenditures (e.g., on medicine) and access to alternative safe water (e.g., the price of a bottle of drinking water, energy used for boiling water, or filters). If the beneficiary assumes an expense to access a service (e.g., a loan or a fixed cost to finance an intervention or the maintenance of facilities), this amount must be considered a negative change in household finances	The amount of money saved or spent on purchasing water, accessing safe water and sanitation facilities, and healthcare before the intervention is measured as a change in household income, which can either increase or decrease. The HUI in a given location is used to translate the income contribution into a change in well-being.

Outcome: Improved livelihood/economic opportunities

Description	Valuation approach
Economic gains can be expected when improved WASH services allow individuals to spend more time participating in income-generating activities (e.g., work). WASH activities can also lead to job creation and support for local WASH enterprises. For example, jobs may involve the construction, operation, or repair of infrastructure as well as training and education.	The economic value of time saved is measured as the additional income generated by dedicating that time to income-generating activities. In the case of direct employees, income can be taken as the full salary and monetary benefits paid to employees. The HUI in a given location is used to translate the income contribution into a change in well-being. The additional income generated will also generate tax payments to the state, and this should be considered an outcome for the government and society. The HUT in a given location is used to translate the tax contribution into a change in well-being.

Outcome: Improved gender equality

Description	Valuation approach
WASH initiatives, such as providing women and girls with access to sanitation facilities and hygiene products when needed, reducing the distance women typically travel to collect water, or offering hygiene education, help reduce risks and save time, thereby improving economic opportunities and enhancing health and well-being.	This outcome is measured in terms of improved well-being due to exposure to lower-risk activities and well-being gained due to a sense of dignity/ empowerment (see the improved health and well-being pathway). The outcome is monetized through the social utility of life concept, assuming the ideal economic productivity of a human being as a proxy for the social utility of life. Improved economic opportunities are also measured, but with another pathway (see the improved economic/ livelihood opportunities pathway). The Health Utility of Income (HUI) methodology is used to translate the overall change in income into a change in well-being (eQALY).

Outcome: Avoiding social/healthcare costs

Description	Valuation approach
WASH initiatives that improve health can lead to significant reductions in healthcare costs for the state by decreasing the incidence of waterborne diseases and other health issues related to poor sanitation and hygiene. This, in turn, lessens the burden on public health systems and reduces the need for social benefits, such as disability payments and sickness allowances, that are often provided to individuals suffering from these conditions. Furthermore, healthier populations are more productive and can contribute more effectively to the economy.	This represents the economic benefit due to a reduction in healthcare costs and/or social benefits disbursed by the state. It also represents the economic benefit that states receive due to an increase in tax contributions from employment/additional income. The HUT methodology translates the overall change in tax collection into a change in well-being.

Outcome: Environmental externalities

Description	Valuation approach
WASH activities can create environmental externalities such as pollution, eutrophication, and climate change, which cause a range of direct and indirect effects on people's health and well-being, due to the consumption of electricity and materials for water source protection, etc. The effects can be positive or negative, depending on the cause. Initiatives that increase the use of resources and energy will have a negative impact, while WASH initiatives that lead to a reduction in resources (e.g., energy for boiling water to reduce contamination) can be considered to have a positive impact. Agricultural and other practices that reduce contamination or improve the quality of/access to water are included in the WIVF (e.g. pesticide reduction, wetlands conservation).	Environmental externalities are quantified using reference flows from or to nature, resulting from economic activity as a first step. The life cycle assessment approach, methods, and databases are used to inform the cause–effect chain of events from the activity to the environmental impacts. These impacts are categorized into three major areas of protection: human health, ecosystem services, and resources. The impacts on human health are directly related to the direct well-being pathway. The resource pathways are monetized using economic costs (damage or mitigation costs) and then translated into well-being impact (eQALY) using a utility factor.

Outcome: Ecosystem services

Description	Valuation approach
Activities related to nature conservation (e.g. reforestation/afforestation, wetland restoration, sustainable agricultural practices) can have a positive impact on biodiversity while enhancing the effectiveness and sustainability of the WASH programs by ensuring access to clean water and a healthier ecosystem.	Each unit of area is associated with several ecosystem services (outcomes), which are valued (impact) based on primary data collection, expert interviews and data, and research data that are transferred and adapted to the assessed cases. The types of ecosystem services can include direct-use services (e.g., fishing), regulation services (e.g., carbon storage and sequestration), and cultural value (e.g., tourism). The HUT is used to reflect the well-being value of ecosystem services, which is assimilated into a change in public spending.

Business value pathways

Outcome: Increased staff retention

Description	Valuation approach
WASH services at the workplace or home can significantly affect employee retention. Inadequate services may lead to voluntary turnover as employees seek better conditions or force staff to leave due to the increased time required to access these services for their families or to illnesses caused by waterborne disease.	This represents the economic value of reducing the turnover of employees at the workplace for business. This pathway does not have an additional valuation, as it is not translated into well-being equivalent value; rather, it considers only the business value represented (financial value).

Outcome: Increased productivity

Description	Valuation approach
A decrease in disease incidence, workplace absenteeism, and time spent accessing WASH services can lead to enhanced business productivity. Beyond the industry-specific units produced and perceived productivity, the financial benefits of this improved productivity can also be estimated.	This represents the economic value of a change in productivity at the workplace. The increase in productivity of an employee can be calculated as a percentage of the employee's annual salary. This pathway does not have an additional valuation, as it is not translated into well-being equivalent value; rather, it considers only the business value represented (financial value).

Outcome: Increased reputation/business continuity

Description	Valuation approach
A company that invests in WASH services, both internally and in the surrounding community, can strengthen its image as a socially responsible business. Additionally, ensuring WASH standards across a company's supply chain can maintain the business's positive reputation by aligning with global standards. This can improve relationships with stakeholders, including customers, investors, and local communities. Moreover, WASH conditions can lead to crises, such as disease outbreaks, which can quickly become public and harm a company's reputation.	An increase or decrease in reputation can directly impact business value by influencing sales through changes in consumer perception, increasing or decreasing litigation costs related to reputational issues, and affecting the risks of operational disruptions. This pathway does not have an additional valuation, as it is not translated into well-being equivalent value; rather, it considers only the business value represented (financial value).

2.5 WASH impact valuation process

To develop an impact valuation assessment in practice, methodological steps are followed from defining the objective and scope to integrating the results into decision-making and strategy. Figure 2 shows the different stages of an impact assessment.

Figure 2

Impact valuation methodology steps

1	**Define the scope and objective of the assessment**	This step considers elements such as the target population and stakeholders relevant for the analyzes (e.g. employees, farmers, members of a community, government, business executives), the issue to address (e.g. unsafe water access, hygiene behavior, etc.), the location, and the objectives regarding the results of the assessment (e.g. the scope of outcomes can include social valuation but also business value).
2	**Map pathways and create an impact framework**	The WASH Impact Valuation framework provides a comprehensive map of pathways to assess and connect the activities, outputs and outcomes relevant to the initiative to be assessed.
3	**Identify and collect primary and secondary data**	This can be done through interviews with stakeholders and desktop research. Key relevant data includes descriptions and information related to the activities. Secondary data from literature review and statistics is also relevant to complement the primary data in the estimation (e.g. incidence rate of WASH disease in a given location, earning premium from education that can be gained due to the reduction of absenteeism, etc.)
4	**Build an impact valuation model**	This step refers to the implementation of the methods for the estimation of outcomes results based on the framework developed and data collected, allowing the eQALY guidance, and using Valuing Impact Excel template.
5	**Review and analyze the results**	This stage involves identifying absolute impact and the impact drivers and areas of improvement and/or scaling impact.
6	**Influence decision-making and maximize societal value**	The results of the assessment should provide valuable insights for decision-making developing strategies that scale impact and ensure the sustainability of initiatives.

3.

WASH illustrative case studies

3.1 Overview of the case studies

This section presents illustrative impact valuation case studies based on projects developed by leading organizations in the field and businesses across different regions[13]. The purpose is to demonstrate how the implementation of the WIVF provides relevant and comparable information on the impact and performance of projects and initiatives, thereby supporting decision-making. This overview focuses specifically on the impact valuation results of WASH projects using the WIVF method.

The selected initiatives encompass a diverse range of activities across various regions, with each addressing distinct challenges.

Table 3 provides an overview of the selected cases described in this report and details the type of initiative, its location, the reach of beneficiaries (number of people beneficiated by the intervention directly and indirectly by the WASH intervention), and the range of investments made by an organization for delivering activities throughout the project period, which ranges from 2 to 5 years.

13 Reckitt, Water Aid, and others.

Table 3

Overview of projects

Project name	Location	Project goal	No. of beneficiaries	Project budget (USD)
Hygiene education in schools	Oceania, Europe, Asia, and Africa (5 countries)	Providing hygiene education in schools to teach positive hygiene habits, reduce preventable illnesses, and reduce absenteeism rates at school.	>1.5 million	>600,000
School infrastructure for sanitation/ water	Latin America (1 country)	Installing rainwater harvesting systems in schools to reduce water scarcity and improve access to water for sanitation and hygiene.	>4,000	>10,000
Water source protection	Latin America (1 country)	Constructing spring protection and promoting nature conservation to improve farmers' living conditions and preserve the environment.	>5,000	>600,000
Loans for WASH infrastructure	Asia (2 countries)	Expanding micro-credit activities to enhance water and sanitation facilities to improve health, gender equity, and economic outcomes.	>1.5 million	>3 million
Well drilling	Africa (2 countries)	Drilling boreholes and protecting wells to provide farmers with closer access to safe water.	>150,000	>600,000
Water, sanitation, and hygiene access at the workplace	Asia (1 country)	Reaching underserved, water-scarce tea-growing communities to provide workers with drinkable water, decent toilets, and good hygiene education.	>7,000	>100,000

3.2 Insights from the results

Applying the WIVF to all the case studies listed above brought us valuable insights that are summarized below. The insights covered:

- Identification of impact drivers (understanding the mechanism of impact)
- Benchmarking (comparing projects)
- Social value vs. output (going beyond output to measure impact)
- Communication, engagement and reporting (the potential of impact valuation results to drive communication)

3.2.1 Insight 1 – Identifying impact drivers

Insights summary

The implementation of the WIVF provides comparable evidence of an initiative's impact and allows for the identification of key impact drivers and the underlying root causes behind those outcomes.

Different applications derive from this understanding, such as the following:

- Strategy planning, refining, and improving project design and implementation.
- Data collection improvements, focusing on material outcomes.
- Stakeholder engagement, clearly identifying the most significant impact drivers demonstrating the value and effectiveness of the initiative.
- Communication and reporting, providing a more comprehensive view of how initiatives contribute to broader societal value.

Figure 3 outlines the contribution of each outcome per project and indicates the most significant driver of positive impact for each initiative. The figure lists all the case studies in lines that were assessed with the WIVF and we indicated in columns the main impact drivers (outcomes) contributions. We used colors to reflect on the magnitude of impact, green for positive impact and red for negative impact, for confidentiality reasons.

Figure 3

Contributions of impact drivers and total societal value created

Project	Improved health and well-being	Improved educational opportunities	Improved economic/ livelihood opportunities	Avoided social costs/taxes	Environmental externalities	Changes in household finance	Improved gender equality	Ecosystem services
Hygiene education in schools - Oceania								
Hygiene education in schools - Europe 1								
Hygiene education in schools - Asia								
Hygiene education in schools - Africa								
Hygiene education in schools - Europe 2								
School infrastructure for sanitation/water - Latin America								
Water source protection - Latin America								
Loans for WASH infrastructure - Asia 1								
Loans for WASH infrastructure - Asia 2								
Wells drilling 1 - Africa								
Wells drilling 2 - Africa								
Water, sanitation and hygiene access at workplace - Asia								

Positive Negative Negligible

We can derive the following insights from the results:

- Health and well-being outcomes are the most relevant impact drivers of these WASH initiatives. Addressing the issue of diseases associated with WASH by providing access to safe water, sanitation facilities, and hygiene education in targeted countries and populations has the potential to create positive value due to the high Disability Adjusted Life Years (DALYs) per capita linked to WASH diseases.
- The potential opportunities to improve livelihood and economic opportunities through time saved from water collection and sanitation activities is another relevant outcome of WASH initiatives. This is particularly relevant for initiatives that address access to safe water, such as loans for WASH infrastructure and the project that provides access to water and sanitation at workplace in Asia, which help reduce the number of trips and time required to reach safe water sources.

- Educational opportunities are a key outcome when WASH initiatives are well-targeted, focusing on hygiene education and providing sanitation infrastructure and access to safe water in schools.
- There are notable positive impacts on outcomes related to avoided social costs and tax contributions. This includes additional taxes paid due to WASH job creation or additional future outcomes due to a reduction of absenteeism. In regions where tax rates and social benefits are relatively higher (e.g., Oceania, Europe), the impact of the associated outcomes is significant.
- Avoided social costs refer to the savings that governments can achieve by reducing expenses, such as healthcare costs, or by creating jobs, which decreases the need to pay social benefits.
- It is important to recognize the potential negative impacts associated with some initiatives. In the case of the water source protection project in Latin America, one significant concern is the financial burden placed on beneficiaries, who may have to cover part of the construction costs for protection measures. However, in this case, the avoided costs from not having access to drinkable water leads to a net positive change in household finances. Additionally, in initiatives where beneficiaries receive loans to build water or sanitation facilities, the cost of the loans and interest payments can create a financial burden that reduces the benefits and, in some cases, creates overall negative results. Another critical aspect of these negative outcomes is the environmental impact. Environmental externalities are inherent in all initiatives aimed at protecting water sources or constructing sanitation infrastructure, largely due to the types of materials used (e.g., water and sanitation access and WASH education in the Asia project). These negative factors are often overlooked when assessing the overall impact of such programs.
- Many of the initiatives face data collection challenges that limit their assessment. The lack of relevance of some outcomes within the overall impact may be due to insufficient data on outcomes (e.g., reduction in violence in water collection activities, lack of data on the time saved and the use of the time in productive activities, etc.). This highlights opportunities and needs to enhance monitoring and data collection efforts related to these outcomes to improve positive impact of WASH initiatives. Those could include surveys to collect well-being improvements, absenteeism reduction, use of saved time, monitoring tree planting and conservation practices, practices for water purification, etc.

3.2.2 Insight 2 – Benchmarking

Insights summary

The WIVF enables the comparable measurement of SROI, allowing for the benchmarking of the relative performance of projects across different contexts.

The following applications can be derived from this information:

- Benchmarking serves as a driver for improving the efficiency of an initiative's design and is also crucial for informed due diligence, capital allocation, and setting meaningful targets.
- This information draws attention to aspects such as a lack of consideration of the local context, insufficient prioritization due to an overemphasis on building on existing opportunities, and a lack of understanding of the broader system facilitation that must be managed to scale impact.

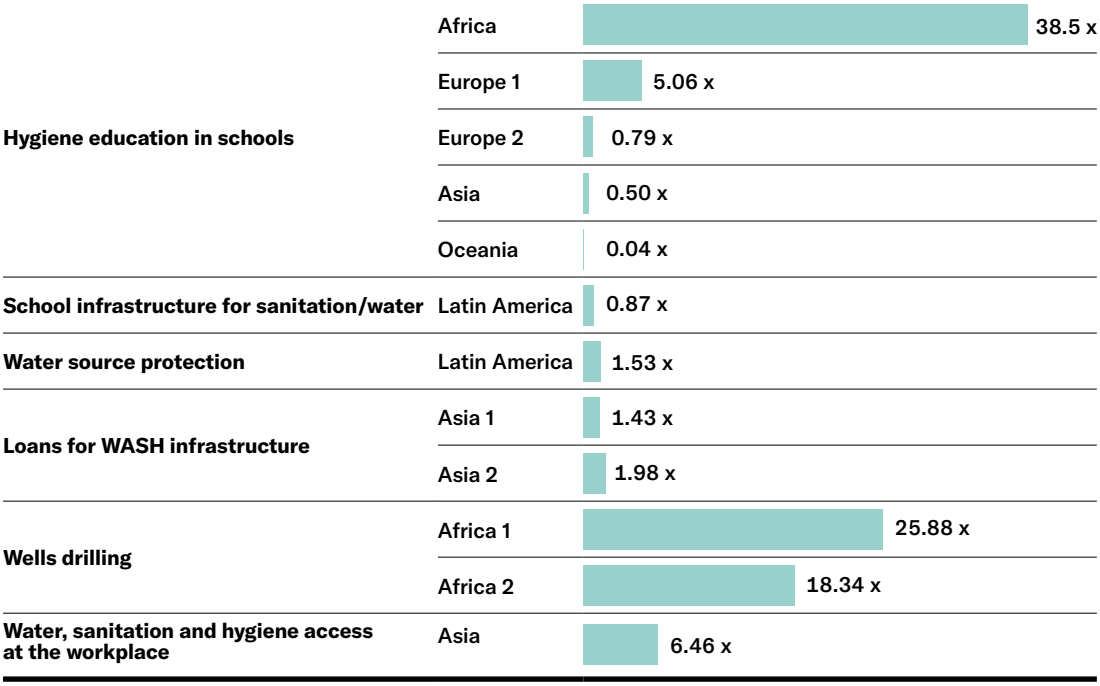
The social return on investment of each initiative is presented in Figure 4[14]. The social return on investment is calculated as the ratio between the societal value divided by the cost of the project, calculated on an annual basis. It is a measure of the efficiency of the investment and normalized results that allow direct comparison between projects in a portfolio, for instance.

14 The SROI of each initiative is estimated by calculating the ratio between the total societal value created (in USD) and the investment made. For WASH infrastructure loans, the method considers the total capital disbursed as the investment.

Figure 4

Benchmarking WASH projects according to SROI

Social value / Investment



There is a wide range of values, with the highest representing the most efficient in terms of the relationship between the investments made and the societal value created. We can derive the following insights from the results:

- The hygiene and education initiative in Africa is highly efficient. This initiative exemplifies well-selected beneficiary targets and issues to address. Hygiene education is lacking in this target population, while the diseases linked to WASH are significant in the region. The potential to achieve significant outcomes from this baseline is high, while the costs are not substantial. However, the same initiative in Oceania shows lower performance due to differences in the context and the baseline of the target beneficiaries, indicating the need for a better project design (e.g., different beneficiary targets or issues to address, cost review, etc.).

- Negative impacts and high costs reduce the potential efficiency of investments and must be considered in assessments. Water source protection in Latin America is not efficient in providing a positive impact. This inefficiency is linked to the profile of the beneficiaries, for whom issues of water access and WASH-related diseases are not significant, while the costs associated with constructing protection measures are high. Additionally, there is a negative environmental impact due to the materials used and a negative effect on household finances, as the beneficiaries bear part of the costs, thereby reducing the positive impact on other outcomes. This raises the need to reconsider capital allocation, potentially investing in other projects, exploring cost-reducing solutions (e.g., nature-based solutions for protection construction), or altering project design.

3.2.3. Insight 3 – Societal value vs. outputs

Insights summary

The WIVF delivers monetized impact results that are easy to communicate and integrated into financial data, enabling straightforward comparisons of investment efficiency across projects or activities—going beyond simply counting beneficiaries.

The practical learnings are as follows:

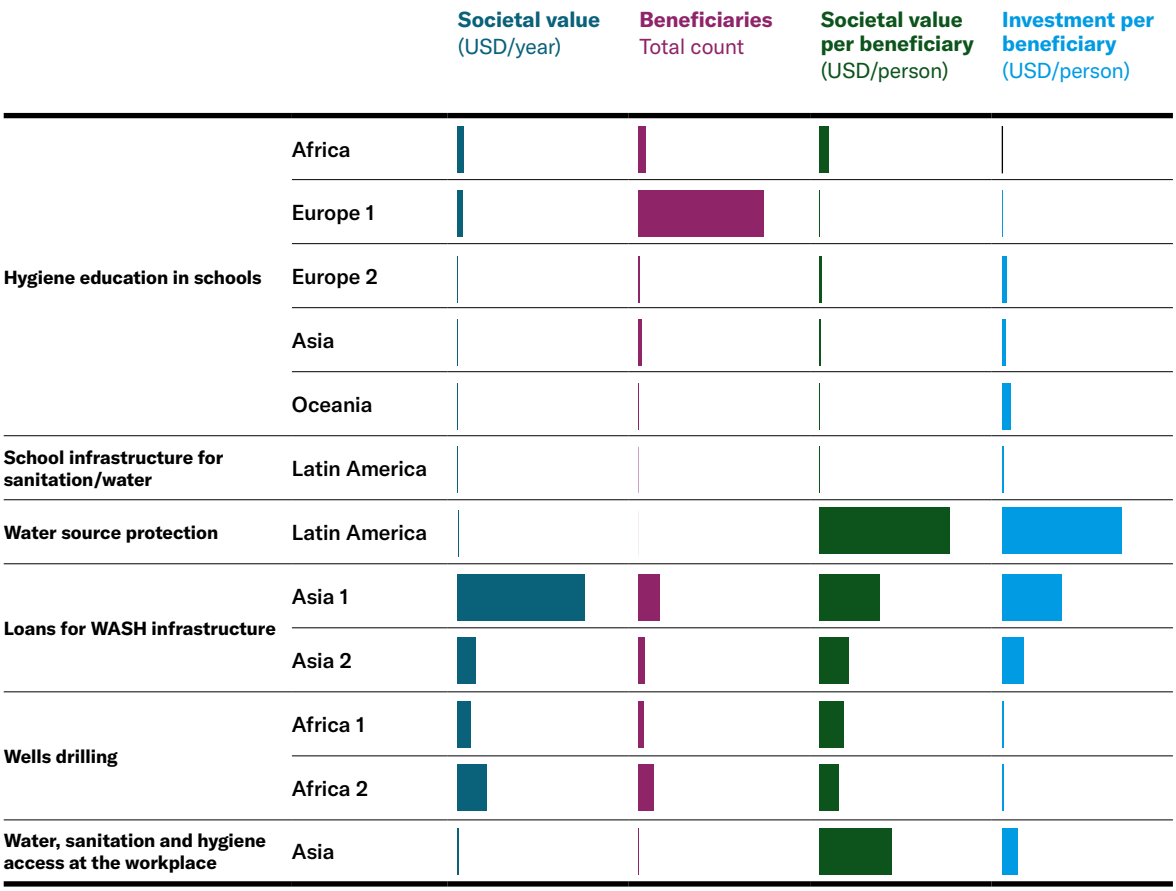
- The results highlight the complementarity of impact valuation, demonstrating that focusing solely on outputs or outcomes is insufficient for informed decision-making.
- Relying solely on outputs can mislead decision-making in terms of resource allocation or project prioritization.
- Optimizing resources requires understanding the absolute societal value that a project creates, especially when targeting areas where societal value can scale at lower costs.
- Stakeholder engagement and communication are enhanced when the impact of initiatives is demonstrated while using metrics such as monetized values helps reach a broader audience.

Figure 5 presents the relationship between outputs, societal value, and costs[15] per beneficiary reached per initiative.

15 The costs represent the investment made to deliver the activities. In the case of infrastructure loans in Asia, the value is based on the capital disbursed, which exceeds USD 100 million.

Figure 5

Societal value and costs per beneficiary



We can derive the following insights from the results:

- The number of beneficiaries and societal value are poorly correlated. Hygiene education in Europe reaches a larger number of beneficiaries compared to the same initiative in Africa, although the societal value is higher in the latter region.

  There is no clear relationship between societal value and investment cost per beneficiary.

- The hygiene education in schools program implemented in five countries demonstrates a significant reach at a low cost per beneficiary, whereas the water source protection initiative in Latin America shows the opposite.

3.2.4 Insight 4 – Communication, engagement, and reporting

Insights summary

Compared to conventional impact assessment frameworks, the WIVF provides clear added value as it reveals a lack of correlation between impact valuation results and traditional metrics, such as the number of beneficiaries or cost per beneficiary.

All the projects assessed provide, on average, $3.6 for every $1 spent. This is relatively in line with previous estimates by the WHO and others. Additionally, when adding the business value that those projects bring, the WIVF can powerfully demonstrate the case for investing in WASH.

The practical learnings are as follows:

- The value of WASH investment for different audiences should be communicated and reported clearly in a non-expert and uniform way.
- The business value of investing in WASH should be demonstrated.
- Financial reporting on projects should be integrated in parallel with societal value (impact) reporting.

4.

Standardization and outlook

The WIVF is our contribution towards a standardized WASH impact evaluation methodology, building on existing accounting methods such as the WASH Benefits Accounting Framework by WASH4Work. It offers significant benefits by providing exhaustive coverage across the three types of capital (social, human, and natural), identifying impact drivers, enabling comprehensive cost–benefit analyses, and ensuring consistency and comparability for projects developed in various regions.

The insights and evidence gathered from the extensive case studies have been instrumental in shaping project strategies. This has led us to making the framework broadly available for wider use and collaboration, with the aim of encouraging additional pilot tests to validate the framework's effectiveness in various contexts and raising awareness by publishing this working paper as an open-source document to boost visibility and broader participation.

Our objective is to develop a robust WIVF that will evolve into a widely recognized standard supported by a diverse coalition of partners. By engaging more stakeholders, we aim to transition from this working paper to a well-rounded standard that reflects collective efforts. The inclusion of diverse perspectives, experiences, and expertise will enrich the framework, making it applicable across various contexts while also enhancing its credibility and acceptance, thereby increasing the likelihood of widespread adoption.

The path forward presents an opportunity to identify potential partners for pilot testing and initiate collaborations, establish a roadmap for awareness and stakeholder engagement activities to support the transition to a formal standard and create a detailed plan for the standardization process.

5.

Appendix I — WASH4Work alignment

The WIVF acknowledges and builds upon existing accounting frameworks, such as the WASH Benefits Accounting Framework by WASH4Work.

This section outlines the key findings from comparing the two frameworks (WIVF and WASH Benefits Accounting Framework by WASH4Work). The purpose of this comparison is to find the extent to which the WIVF is built on the foundation of the WASH4Work framework and to identify the additional elements it introduces that address gaps in understanding the material societal impact drivers of WASH projects across different contexts, thereby supporting more effective decision-making through a deeper understanding of these projects' societal impacts.

The general alignment insights are described below, with a detailed analysis at the indicator level provided in the following sections.

5.1 Alignment of activities

The WIVF aligns with the WASH4Work framework by encompassing all of its key activities, including access to water, sanitation, hygiene, and related education, as well as institutional efforts.

Additionally, the WIVF extends beyond the WASH4Work framework by incorporating nature conservation and regeneration activities, allowing for the inclusion of positive societal value generated by these environmental initiatives, which are not covered by the WASH4Work framework. Figure 6. Alignment with activities in the WASH Impact Valuation Framework describes the WIVF activities covered.

Figure 6

Alignment with activities in the WASH Impact Valuation Framework

Activities covered in the WASH Impact Valuation Framework

Water access and education	Sanitation access and education	Hygiene access and education	Institutional*	Nature conservation and regeneration
The accessibility, availability, and quality of the water source for drinking, cooking, personal hygiene, and other domestic uses. This also includes measures to improve the efficiency and resiliency of supply systems.	The accessibility of sanitation facilities and services for the management of excreta.	The accessibility of the conditions and practices that help maintain health and prevent the spread of disease.	Capacity building and Community dialogues.	Includes non-WASH activities that can positively impact WASH, such as reforestation, planting trees, etc.

Out of scope WASH4WORK framework

* The WIVF does not cover some activities, such as the institutional WASH4Work activities related to water governance, including direct engagement in water governance, policy, and public water management (e.g., community water committees and communication and reporting on WASH access and activities).

5.2 Alignment of outputs and outcomes

The alignment at the output and outcome levels is assessed by comparing the WASH4Work indicators that either directly match (the output or outcome indicators are the same indicator) or are indirectly covered (the output or outcome indicator is addressed indirectly in the pathway and/or covered by other indicators) by the WIVF.

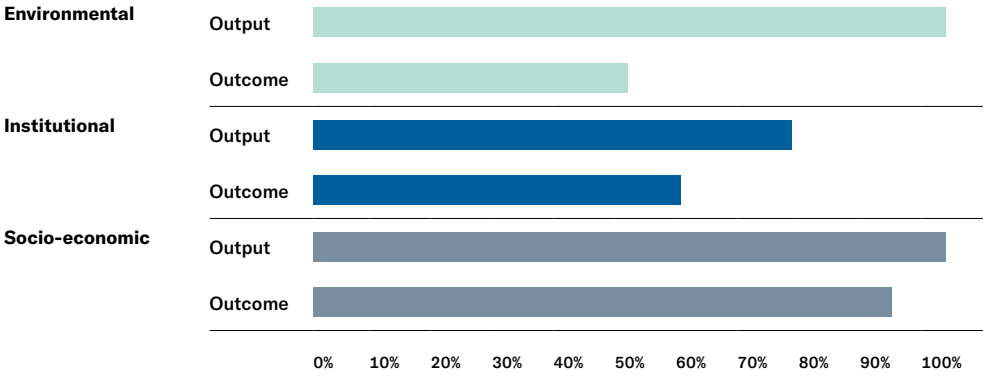
5.2.1 General alignment

Figure 7 shows the percentage of outputs and outcomes from the WASH4Work framework included in the WIVF (e.g., within the environmental category, 100% of outputs are included in the WIVF, while 50% of outcomes are included).

Figure 7

Overall WASH impact framework alignment

WASH Impact Framework alignment at output/outcome level



- **The overall alignment between the frameworks is high.** That is, 93% of the outputs presented in the WASH4Work framework are either directly or indirectly covered in the WIVF, with 68% of these addressed at the outcome level.
- **The institutional category presents the lowest alignment, followed by the environmental category.** At the institutional level, the gap in alignment primarily concerns indicators related to governance and community resilience. Governance indicators[16] are relevant for understanding the broader institutional landscape within the WASH sector. However, they fall outside the scope of impact measurement, as they can track the effectiveness of the systems supporting WASH initiatives rather than the direct outcomes of the initiatives themselves.
- **Environmental indicator alignment shows a gap at the outcome level,** particularly with advanced indicators related to improved water quality and climate adaptation and mitigation. These indicators are beyond the scope of the WIVF, as they are currently used as context markers rather than measures of outcome or impact.
- **Socioeconomic indicators related to women's leadership and decision-making roles in WASH, as well as the number of women in WASH leadership positions, are outside the scope of the WIVF.** These indicators are considered contextual parameters, and their direct impact on gender equality and beneficiaries' quality of life is difficult to measure, which is the primary focus of the framework.

16 For example, number of strategies or plans developed and implemented and the number of organizations involved in collecting and reporting WASH data.

The WIVF incorporates additional outcomes that offer a more holistic perspective, including the following:

- **The WIVF includes outcomes from conservation and regeneration activities**, such as reforestation or wetland restoration, which are integrated into the assessment, increasing the scope covered from the WASH4Work.
- **The WIVF extends its scope to include outcomes related to social costs that are avoided and increased tax contributions.** WASH initiatives can decrease government expenditures, not only by lowering healthcare costs but also by enhancing employment, generating additional state revenue through job creation, and stimulating economic activity. For example, the outcomes related to improved economic opportunities, which create additional income and lead to potential tax contributions, are considered under the WIVF. Additionally, improved health outcomes have the potential to reduce healthcare costs for states as well as generate social benefits.
- **The negative change in household finances outcomes is integrated into the WIVF.** WASH initiatives often include loans to build sanitation facilities or access water, and the cost of these loans and interest payments can create a financial burden that reduces benefits and, in some cases, leads to overall negative outcomes.

This broader approach enables a more accurate assessment of the full spectrum of benefits that WASH interventions can deliver, ultimately leading to more informed and impactful strategic decisions.

5.2.2 Detailed alignment

The alignment of outputs and outcomes is assessed by directly comparing the indicators (the output or outcome indicators are the same indicator) or indirectly (the output or outcome indicator is used indirectly in the pathway and/or covered by other indicators) addressed by each framework. One example of a direct indicator is the outcome “Distance traveled to access WASH services,” which is used in the WIVF to estimate the economic value of time saved that leads to improved economic/livelihood opportunities. One example of an indirect indicator is the outcome “Reduced prevalence and severity of water insecurity,” which can be encompassed within the broader outcome of improved health/well-being but is not a direct parameter used.

Table 4 describes the indicators not covered in the WASH Impact Valuation Framework covered in the WASH4Work framework.

Table 4

Indicators covered and not covered by category in the WASH Impact Valuation Framework

WASH4WORK category	Total	Covered				Not covered	
		Directly	Indirectly	Total	% of total	Total	% of total
Socio-economic	30	23	5	28	93%	2	7%
Outcome	22	16	4	20	91%	2	9%
Output	8	7	1	8	100%	0	0%
Institutional	**23**	**10**	**4**	**14**	**61%**	**9**	**39%**
Outcome	19	8	3	11	58%	8	42%
Output	4	2	1	3	75%	1	25%
Environmental	**10**	**4**	**3**	**7**	**70%**	**3**	**30%**
Outcome	6	2	1	3	50%	3	50%
Output	4	2	2	4	100%	0	0%
Total	**63**	**37**	**12**	**49**	**78%**	**14**	**22%**

Alignment overview

- **Thirty-two out of 49 advanced output and outcome indicators are covered either directly or indirectly in the WIVF.** Major gaps in overall alignment are found in institutional outcome indicators and environmental outcome indicators.
- **In the environmental category, the WIVF covers three out of six outcome indicators,** excluding indicators such as the level of treatment required for use, the ability to adapt to climate-related events, and the proportion of bodies of water with good ambient water quality.
- **At the socioeconomic level, only two out of 30 indicators are not covered.** These are specifically related to women's leadership and women's role in decision-making concerning WASH as well as the number of women's positions in WASH leadership management. These indicators represent contextual parameters and fall outside the scope of the WIVF, as attributing a direct relationship between management positions and impact on gender equality makes it challenging to measure the effect on beneficiaries' quality of life, which is one of the purposes of the WIVF.
- **The environmental alignment shows a gap at the outcome level,** particularly with three advanced indicators related to improved water quality (surface or groundwater) and climate adaptation and mitigation. These indicators are beyond the scope of the WIVF, as they are currently used as context markers rather than measures of outcome or impact.
- **The institutional category presents the lowest alignment,** with 14 out of 23 indicators covered in the WIVF. The gap in alignment primarily concerns indicators related to governance and community resilience. Governance indicators, such as the number of strategies or plans developed and implemented and the number of organizations involved in collecting and reporting WASH data, are relevant for understanding the broader institutional

landscape within the WASH sector. However, they fall outside the scope of impact measurement, as they can track the effectiveness of the systems supporting WASH initiatives rather than the direct outcomes of the initiatives themselves.

Table 5 describes the indicators not covered in the WASH Impact Valuation Framework that are covered in the WASH4work framework.

Table 5

Indicators not covered in the WASH Impact Valuation Framework

Category based on WASH4work framework	Output/ Outcome	Name	Indicator description	Core/ Advanced
Socio-economic	Outcome	Improved gender equality	Women's role in household decision making related to WASH	Advanced
Socio-economic	Outcome	Improved gender equality	Increased proportion of positions in WASH management and leadership held by women	Core
Institutional	Output	Improved governance	Number of strategies or plans developed and/or implemented	Advanced
Institutional	Outcome	Improved water governance	Increased integrated water resources management	Advanced
Institutional	Outcome	Improved water governance	Increased number of organizations collecting and reporting WASH data collecting and reporting WASH data	Advanced
Institutional	Outcome	Improved water governance	Increased Institutional capacity	Advanced
Institutional	Outcome	Improved knowledge, awareness, and understanding	Level of WASH knowledge, awareness, and understanding	Core
Institutional	Outcome	Improved community resilience	Water-use efficiency	Advanced
Institutional	Outcome	Improved community resilience	Service capacity	Advanced
Institutional	Outcome	Improved community resilience	Volume of water available for WASH	Advanced
Environmental	Outcome	Improved water quality (surface or groundwater)	Proportion of bodies of water with good ambient water quality	Advanced
Environmental	Outcome	Improved water quality (surface or groundwater)	Level of treatment required for use	Advanced
Environmental	Outcome	Improved climate adaptation and mitigation	Ability to adapt to climate-related events	Advanced

6.

Appendix II — eQALY methodology details

Impact valuation methodology enables the translation of a wide variety of impact metrics across natural (tCO_2eq, kg phosphorus, kg particular matter, etc.), social (social benefits, taxes, etc.), and human capital (wages, the feeling of integration, health, and safety, etc.) into monetary units. Defining a unique, objective, and comparable impact metric (expressed in monetary terms) enhances the relevance of the information for decision-makers and makes it accessible to a broader audience that might otherwise lack access to these insights

The eQALY methodology[17]defines a single impact indicator for all pathways and activities covered by an organization, project, or investment across their entire value chain or life cycle and across all three capitals: human, social, and natural. This single-impact indicator is a measure of human well-being, and it covers all these dimensions, building on an absolute and objective definition of well-being (as opposed to a subjective definition informed by self-stated preferences).

Human well-being has different dimensions, and two key indicators—disability-adjusted life years (DALY) and quality-adjusted life years (QALY[18])—are commonly used to measure human health in impact valuation. The eQALY method introduces an "equivalent-QALY" (eQALY) indicator, which includes not only health and quality of life but also other measurable economic factors, like wages, providing a more comprehensive assessment.

The equation below shows the principle of the equivalent QALY, summing up different contributions originating from different activities, all impacting well-being.

eQALY

$$\mathbf{eQALY} = QALY_{\text{quality of life}} + QALY_{\text{life expectancy}} + QALY_{\text{income}} + QALY_{\text{education}} + QALY_{\text{climate change}} + QALY_{\text{biodiversity}} + \cdots$$

17 Samuel Vionnet, The eQALY impact valuation method, 2024. https://www.valuingnature.ch/post/eqaly-impact-valuation-method

18 Quality-adjusted life year (QALY) is a generic measure of disease burden, including both the quality and the quantity of life lived.

One QALY represents one year of life in good health. If a person dies, they lose the QALYs they would have gained until reaching their life expectancy. If someone's quality of life decreases during a year, QALYs can measure this by accounting for a percentage loss based on standard disability weights, like those from the Global Burden of Disease (GBD). For example, a QALY of 0.5 means a person lived for a year with only 50% of their full quality of life. Quality of life changes can be linked to various factors, including income, social integration, and environmental conditions.

The eQALY is monetized using a constant value across all situations and geographies to respect human rights.

Two main valuation pathways are considered in this method:

1. **The first type of pathway is related to direct health or well-being effects.** These occur when an activity affects someone's physical and psychological health (e.g., reduction of disease) or other well-being dimensions (e.g., self-esteem, feeling of belonging) The outcomes related to direct health or well-being effects are already expressed in eQALY or change in wellbeing. A valuation factor can be used to monetize the direct health/well-being outcome. The factor used is the Social Utility of Life, which informs the utility for the entire society and corresponds with real economic value, rather than relying on people's perceptions and preferences. A range of companies use an ideal productivity value as a proxy for this Social Utility of Life. The average GDP per capita of the OECD is recommended to estimate this value.

2. **The second pathway links economic outcomes or proxies, such as income or taxes, to health and well-being.** These pathways require the use of utility models, to translate a change in economic outcome into a change in the quality of life of individuals (human capital) or groups of people (social capital). This is the role of the associated methods, such as the Health Utility of Income (HUI)[19] and Taxes (HUT)[20,21].

All the impact pathways follow the cause-effect chain of events that lead to a change.

The valuation approach follows the equation presented below:

IMPACT PATHWAY

`Output × Outcome × Additivity × Valuation factor = Societal value`

19 Represents the contribution of income to individuals' well-being for a given location. It captures the utility of money translating economic measures into measures of societal value expressed in changes in well-being at the individual or population levels.

20 Represents the contribution of tax to populations' well-being for a given location and captures the utility of taxes/avoided social costs translating economic measures into measures of societal value expressed in changes in well-being at the individual or population levels.

21 Vionnet, S., R. Adhikari, and S. Haut. The Health Utility of Income and Taxes—Part A: Health Utility of Income—Impact Valuation Methodology, Global Assessment and Application to Businesses. White Paper. Valuing Impact, 2021.

Whereas:

- **Output:** The direct measurable result of an activity (e.g. number of beneficiaries with improved hygiene education). It is often based on primary data collected from the activity directly or from the organization performing the activity.

- **Outcome:** Changes in the lives of the target population or natural ecosystem (e.g. improved health due to access to safe water). It is often informed partly by primary data and secondary data or statistics, as outcomes are more difficult to measure.

- **Additivity:** a multiplier between 0 and 100% which reflects to which extent the impact measured is happening. This additivity factor can capture various effects. The additivity of an impact is one or multiple multiplier(s) defined between 0 and 100%, accounting for different effects. It can be also understood as the risk of the impact not happening as expected.

- **Valuation factor:** factor expresses the change in QALY per unit of outcome.

- **Societal value:** Refers to the natural, human, and social capital value together. In this methodology, we express societal value in terms of well-being.

All activities lead to a change in human well-being, even the measure of natural capital through ecosystem services.

The effects captured by the additivity multiplier are the following.

ADDITIVITY

$$\text{Additivity}\,(\%) = \text{Baseline}\,(\%) \times (1 - \text{Dropoff}\,(\%)) \times \text{Attribution}\,(\%)$$

Whereas:

- **Baseline:** defines the amount of change from a baseline that is achieved by an activity, beyond what is already defined by the outcome indicator

- **Dropoff:** defines the fraction of the outcome that fails to occur over time due to various reasons (e.g., breakdown of equipment, lack of commitment of beneficiaries, etc.).

- **Attribution:** defines the fraction of the impact which can be attributed to a specific organization and input, if other organizations and input are used to deliver the same outcome.

The WIVF also includes economic outcomes that reflect business/financial value related to productivity at the workplace, staff retention, and the company's reputation that can impact the overall financial success and sustainability of a business and do not translate into societal value.

7.

Appendix III — Detailed Impact valuation method

7.1 Impact pathway and general equation

The estimation of the societal value follows the logic of the impact pathway.
Figure 8 below is an illustration of the generic equation that is used for calculations, and it serves as a basis.

Figure 8

Societal value generic equation

7.2 Additivity factors and time accounting

Additivity factors can capture various effects, accounting for different influences. They can also be understood as the risk of the impact not occurring as expected. Different sources can serve as proxies or provide information to estimate these values. Below, several examples are presented that may offer guidance on the estimation of these factors.

Baseline factors

- For improved health outcomes, depending on the challenge addressed, the baseline parameter can range from very low values (10–15%) when the intervention does not solve the whole problem to higher values (100%) when the intervention is comprehensive and long term.

- For absenteeism reduction at school, there is a slight chance that increased health outcomes occur due to other factors not related to the intervention, or that the intervention is inefficient for a variety of reasons. Therefore, an average efficiency of 60–80% could be used to account for uncertainty.

- The change in healthcare cost linked to the reduction of disease measured can be determined by considering the number of times individuals are getting a disease per year or by using the ratio between the additional number of days gained from the reduction of disease and the average number of days sick in the population.

Dropoff

- For a safe water source infrastructure, the project might fail to provide maintenance over longer periods, leading to the deterioration of the infrastructure. In cases such as this, a 20% drop-off per year can be used. In other cases, in which the effect of the intervention can be sustained, drop-off values of 0–10% can be used.

- In the case of reduction of absenteeism due to improved health or training on WASH, although there might be an initial health outcome over the long term, some interventions might fail to provide long-term support for the new habits or increased health to be maintained over time. We suggest 20–50% to account for the efficiency wearing out.

- For a change in household finances due to costs saved, without long-term follow-up programs, it is recommended to use a low drop-off parameter in the range of 10–20%.

Attribution

Attribution defines the fraction of the impact that can be attributed to a specific organization or initiative. For example, the rate of financing or resources used to deliver an impact can be employed when multiple parties contribute to the occurrence of an impact (e.g. if two organizations finance an initiative 50% can be attributed to each). Attribution can be applied after calculating the total impact, allowing us to separate the overall results from the portion specifically attributed to an activity.

Impact accounting across a period of time

Time accounting in impact valuation assessments must be carefully considered. The time dimension can relate to the duration of the project, the longevity of the benefits, and other time-related factors. Below is a definition of each time dimension considered in the assessments.

- **Funding duration –** The duration of the entire project or activities supported by the available funding (e.g., a 3-year investment in building new water wells).
- **Scope of the study –** Based on the study's scope, a duration can be set as a cut-off point beyond which no further activities are considered.
- **Duration of the activities/lifetime of the activity (output happening) –** How long the activity takes place or lasts (e.g., a water pump installed with a 5-year lifespan, an education program over 2 months, conservation of 1 ha of land for 1 year, etc.).
- **Duration of the benefits/outcomes –** How long the benefits/outcomes occur during and after the activity (e.g., a 20-year duration accounted for the earning premium from educational outcomes).

Figure 9

Illustrative example of the duration of outcomes

WASH illustrative project

Funding duration	**4 years** (600 springs in total, 150 per year on average.
Scope of study	5 years
Duration of activity (output happening)	
Concrete infrastructure	**20 years**
Reduction of diseases	**5 years**
Productive time saved	**5 years**
Education	**1 year**
Duration of outcome	
Concrete infrastructure	**1 time**
Reduction of diseases	**1 year**
Productive time saved	**1 year**
Education	**20 years**

General equation: output × outcome AP × VF

Output (total) = funding duration × output (per year)

Outcome (total) = outcome (per year) × duration of outcome ×
if (DurationActivity > ScopeStudyDuration,
duration of activity/ScopeStudyDuration,DurationActivity)

7.3 Impact pathways valuation method details

The present section offers a detailed explanation of the WIVF pathways (social, environmental, and business), covering the identified output and outcome indicators, the valuation approach, and recommended data sources for each indicator.

Additionally, the equation is applied to each pathway through an illustrative example (using mock data) to demonstrate the societal value estimation process.

7.3.1 Societal value pathways

7.3.1.1 Improved health and well-being

Rationale

WASH interventions that improve water quality, facilitate access to safe water, and provide facilities to enhance sanitation will reduce the incidence of WASH-related diseases, thereby improving health and well-being.

Output

Indicators

- The number of direct and indirect beneficiaries impacted by the intervention.
- Number or % of people with access to basic drinking water, sanitation, or hygiene services.

Sources

- Local/primary data specific to the target population impacted by the WASH activities (e.g., from a local health center) are preferable.
- Indirect beneficiaries can be estimated based on statistics or assumptions. (e.g. average people living in a farm/house).

Outcome

The change in health is measured as the improvement in quality of life measured in DALYs avoided due to a reduction in WASH-related diseases. While waterborne diseases (specifically diarrheal diseases) are most associated with WASH issues, there may be cases when vector-borne diseases are also relevant (e.g., malaria).

For well-being impact, the change of life quality is also taken and the associated disability weights list for WASH issues is extended to other conditions beyond health by comparing equivalent situations (e.g., well-being due to avoiding risk activities during water collection).

Indicators

- % Disability weight linked to WASH diseases
- Duration of disease (days/months per year)
- Daly per capita ((Disability Adjusted Life Years) related to WASH diseases in each location.
- The mortality rate from diarrhea, acute respiratory infections, protein-energy malnutrition, and soil-transmitted helminthiases attributable to inadequate drinking water, sanitation, and hygiene.
- % improve well-being/engagement/feeling of integration. due to the intervention

Sources

- Global Burden of Disease.
- WASH-related disease burden estimation tool
- USAID WASH Needs Index Data Visualization
- Water Action Hub pulls drinking water, sanitation, hygiene, and menstrual health data from the JMP database by country.
- Survey of the average perceived level of mental well-being, considering stress, anxiety, shame, and embarrassment
- Survey of Reported average number of sick days per employee
- Survey of the population practicing proper handwashing/practicing open defecation before and after intervention.

Valuation factor

Description	Source
The outcome is monetized through the social utility of life concept assuming the ideal economic productivity of a human being as a proxy for the social utility of life.	GDP per capita data for OECD countries.

Illustrative numerical example:

A WASH initiative that provides access to safe water through infrastructure building and thus improves the health of beneficiaries.

Metric	**Output**	×	**Outcome**	×		**Additivity**		×	**Valuation factor**	=	**Societal value**
Guiding question	How many direct beneficiaries does the WASH project have?		What is the impact of the project's activities on the beneficiaries' health?		How many of the beneficiaries did not have access to clean water before the initiative?	What is the rate of decay of the infrastructure put in place?	How much does the sponsoring organization contribute to the impact?		What is the monetary value of people's well-being? (social utility of life)		What is the monetary value of the project's impact on people's well-being?
Value	100	×	2×10^{-3}	×	60%	(1–20%)	50%	×	55,681	=	**668 Thousand**
Unit	beneficiaries		DALY / beneficiary		N/A	N/A	N/A		USD / DALY		**USD**

7.3.1.2
Improved educational opportunities (+)

Rationale

WASH interventions that improve water quality, ensure access to safe water, and provide sanitation facilities help reduce WASH-related diseases, leading to decreased school absenteeism. By improving WASH services, children can spend more time in school due to fewer sick days and reduced responsibilities related to water collection.

The capacity building and training will also equip participants (e.g., educators, volunteers, employees) with valuable skills that can enhance their career and job opportunities, which is an important aspect considered in this pathway.

Output

Indicators	Sources
• The number of children attending school/not attending due to reduction of disease/better health.	• Local data is preferable from local schools and educational partners.

Outcome

The outcome of education/training is the potential future income premium (expressed as extra income per hour or day of training). The earning premium of education is estimated using the lifelong increment in earnings derived from a specific educational activity.

The expected income of the beneficiaries is then multiplied by the expected duration of the impact over the years (e.g. 20 years for standard schooling or a lower duration value where there is high uncertainty regarding the utility of the skills acquired).

The additional income generated will also generate tax payments to the state and this is considered as an outcome for the government and society.

Indicators	Sources
• Number of hours/days of education gained in a year/number of missed days per student due to better health. • $ earning premium from education school year (primary/secondary). • % tax rates per country/province of intervention.	• Local/Primary data can be collected following studies to track changes over time, providing data on the long-term earning premium of education. • Earnings premium data from the World Bank can be used aggregated at the country level.

Valuation factor

Description	Source
The Health Utility of Income (HUI) methodology is used to translate the overall change in income into a change in well-being (eQALY). The HUI measures the impact of a change in marginal income on the population's life expectancy, thus bridging the gap between income and life quality. The Health Utility of Taxes is used to translate the tax contribution into a change in well-being.	Valuing Impact dataset.

Illustrative numerical example:

A project for improving WASH infrastructure at school and thus reducing absenteeism.

Metric	**Output**	×	**Outcome**		×	**Additivity**		×	**Valuation factor**	=	**Societal value**
Guiding question	How many children are impacted by the project?		How many days of school did each child gain per year?	What is the earning premium associated with a day of education?	For how long does this earning premium materialize?	How many of the skipped days were due to WASH-related diseases?	What is the rate of decay of the intervention?	How much does the sponsoring organization contribute to the impact?	What is the monetary value of people's well-being from earning premium of education in a given location?		What is the monetary value of the project's impact on people's well-being?
Value	100	×	20	× 1.35	× 20	× 70%	× (1–10%)	× 50%	× 1.86	=	**32 Thousand**
Unit	Children		Days/child	USD / day / year	years	N/A	N/A	N/A	USD / USD		**USD**

7.3.1.3
Change in household finances (+/-)

Rationale

WASH activities have the potential to change households' finances and communities through multiple avenues.

Examples of costs that can be saved include health costs (e.g. medicine), and the cost to access alternative safe water (e.g. price of a Bottle of drinkable water, energy used for boiling water, filters).

If the beneficiary assumes an expense to access the service (e.g. a loan or a fixed cost to finance an intervention or maintenance of facilities) this amount of money must be considered as a negative change in household finance.

Output

Indicators

- Number of beneficiaries experiencing a change in their household finances due to a WASH intervention.

Outcome

The amount of money saved or spent on purchasing water, accessing safe water and sanitation facilities, and healthcare costs before the intervention is measured as a change in household income, which can either increase or decrease.

Indicators

- $ Amount of money saved/spent due to WASH initiative (e.g. price of a bottle of water).
- $ The cost of loans/interest.
- Price of water/filters ($).
- Water consumption consumed per day/year.
- Energy consumption used for boiling water.

Sources

- Surveys of the amount spent/ average percentage of household annual income expended on WASH services.
- Surveys on the household practices to access drinkable water.
- Literature review. For example, according to the Sphere Association (2018), a target of 5% or less of household income should be used to buy water for drinking and domestic hygiene.

Valuation factor

Description

The Health Utility of Income (HUI) methodology is used to translate the overall change in income into a change in well-being (eQALY).

Source

Valuing Impact dataset.

Illustrative numerical example:

A project for building wells for a community to freely access drinkable water.

Metric	**Output**	×	**Outcome**	×		**Additivity**		×	**Valuation factor**	=	**Societal value**
Guiding question	How many direct beneficiaries does the WASH project have?		How much did each beneficiary spend on average buying drinkable water?		How much of the water necessities does the well supply?	What is the rate of decay of the intervention?	How much does the sponsoring organization contribute to the impact?		What is the monetary value of people's well-being from saved money in a given location?		What is the monetary value of the project's impact on people's well-being?
Value	100	×	25	×	80%	× (1–10%)	× 50%	×	1.86	=	**1.7 Thousand**
Unit	beneficiaries		USD / beneficiary		N/A	N/A	N/A		USD / USD		**USD**

7.3.1.4
Improved economic/livelihood opportunities

Rationale

Economic gains can be expected when improved WASH services allow individuals to spend more time participating in income-generating activities (e.g., work).

WASH activities can also lead to job creation and support local WASH enterprises. For example, jobs may involve the construction, operation, or repair of infrastructure, as well as training and education.

Output

Indicators	Sources
• Number of short/long term Jobs/Businesses created due to WASH activities. • Number of beneficiaries impacted due to the WASH intervention. • Reduced time/distance spent on water access activities (minutes/hours/km) due to the intervention.	• Survey of the average time saved per person per day for water collection/sanitation. • Local information on jobs/businesses created per project/activity. • Survey on number of trips per day/distance per day for water collection/sanitation.

Outcome

The economic value of time saved is measured as the additional income generated by dedicating that time to income-generating activities.

In the case of direct employees, the income can be taken as the full salary and monetary benefits paid to employees.

The additional income generated will also generate tax payments to the state and this should be considered as an outcome for the government and society.

Indicators	Sources
• Increased income/Salaries paid ($). • Number of working hours. • % tax rates.	• Survey of average time spent daily on income-generating activities. • Reported average household income. • Local data on wages or income/wage statistics by skill level by country or state.

Valuation factor

Description	Source
The Health Utility of Income (HUI) methodology translates the overall change in income into a change in well-being (eQALY). The Health Utility of Taxes is used to translate the tax contribution into a change in well-being.	Valuing Impact

Illustrative numerical example:

A project hires local employees to help conduct its activities on the field.

Metric	**Output**	×	**Outcome**	×	**Additivity**		×	**Valuation factor**	=	**Societal value**
Guiding question	How many direct jobs does the WASH project create?		What is the average income per employee?		How much of the employee earnings is paid with the project budget?	How much does the sponsoring organization contribute to the project budget?		What is the monetary value of people's well-being from income in a given location?		What is the monetary value of the project's impact on people's well-being?
Value	15	×	7,000	×	75%	50%	×	1.86	=	**73 Thousand**
Unit	employees		USD / employee		N/A	N/A		USD / USD		**USD**

7.3.1.5
Improved gender equality

Rationale

WASH initiatives, such as providing women and girls with access to sanitation facilities and products when needed, reducing the distance women typically travel to collect water, and offering hygiene education, help reduce risks and save time, thereby improving economic opportunities and enhancing health and well-being.

Output

Indicators

- Number of women experiencing a change in inequality due to the intervention.

Sources

- Survey of the percentage of women and girls that have had adequate access to water/sanitation facilities and products
- Survey of the share or total number of women exposed to violence/risk activities related to WASH issues

Outcome

The outcome is measured in terms of improved well-being due to the exposure to less-risk activities and well-being gained due to the sense of dignity/empowerment gained (see improved health and wellbeing pathway).

Improved economic opportunities are also measured (see pathway improved economic/livelihood opportunities).

Indicators

- Disability weight for moderate anxiety disorder as a proxy.
- % reduction exposure to risk activities/violence.
- % improve level of satisfaction/well-being.
- Increased income due to saved time used in productive activities.

Sources

- Global Burden of Disease.
- Survey to collect the level of increased satisfaction/ reduction in the exposure to risk activities related to WASH activities.
- Statistics/literature review on gender violence related to WASH activities.

Valuation factor

Description

The Health Utility of Income (HUI) methodology is used to translate the overall change in income into a change in well-being (eQALY).

Sources

- GDP per capita data for OECD countries. USD Currently this value is 55,681 USD/ DALY.
- Valuing Impact dataset

Illustrative numerical example:

A project saves women's time and allows them to use it for productive activities, enhancing their income.

Metric	**Output**	×	**Outcome**	×		**Additivity**		×	**Valuation factor**	=	**Societal value**
Guiding question	How many women beneficiaries are there in the project?		What is the average income that these women are generating?		What is the share of women engaging in income-generating activities?	What is the rate of women who stop generating income after 1 year?	How much does the sponsoring organization contribute to the impact?		What is the monetary value of people's well-being from income in a given location?		What is the monetary value of the project's impact on people's well-being?
Value	50	×	2,000	×	80%	× (1–10%)	× 50%	×	1.86	=	**67 Thousand**
Unit	women beneficiaries		USD / woman		N/A	N/A	N/A		USD / USD		**USD**

7.3.1.6
Avoided social costs/benefits

Rationale

WASH initiatives that improve health can lead to significant reductions in healthcare costs for the state by decreasing the incidence of waterborne diseases and other health issues related to poor sanitation and hygiene.

This, in turn, lessens the burden on public health systems and reduces the need for social benefits, such as disability payments and sickness allowances, that are often provided to individuals suffering from these conditions.

Furthermore, healthier populations are more productive and can contribute more effectively to the economy,

Output

Indicators	Sources
• Number of beneficiaries with improved health due to WASH. • Number of short/long-term jobs related to WASH services.	• Survey of beneficiaries that are reporting improvement in health. • Local data on the number of jobs created related to the intervation.

Outcome

Represents the economic benefit due to the reduction in healthcare costs and/or social benefits disbursed by the state.

Also, it represents the economic benefit states receive due to an increase in tax contributions from employment/additional income.

Indicators	Sources
• $ Amount saved on healthcare costs or social benefits by the state. • % tax rate on income. • $ Amount of income due to employment.	• Open-source data from the World Health Organization or the World Bank can be used to estimate each country's per capita health expenditure. • Survey on salaries paid/additional income. • Survey on social benefits received by people impacted by the intervention.

Valuation factor

Description	Source
The Health Utility of Taxes (HUT) methodology translates the overall change in tax collection into a change in well-being. The HUT measures the impact of a change in marginal tax collection on the population's life expectancy, thus bridging the gap between taxes and life quality.	Valuing Impact dataset.

Illustrative numerical example:

A project improves people's health and thus allows the state to save spending on healthcare.

Metric	**Output**	×	**Outcome**	×		**Additivity**		×	**Valuation factor**	=	**Societal value**
Guiding question	How many beneficiaries are impacted by the project?		What is the annual spending on healthcare to treat WASH-related conditions?		How many of the beneficiaries rely on state-funded health care?	What is the rate of decay of the intervention?	How much does the sponsoring organization contribute to the impact?		What is the monetary value of people's well-being from additional tax contributions in a given location?		What is the monetary value of the project's impact on people's well-being?
Value	100	×	500	×	80%	(1–15%)	50%	×	1.11	=	**1.9 Thousand**
Unit	beneficiaries		USD / beneficiary		N/A	N/A	N/A		USD / USD		**USD**

7.3.1.7
Environmental externalities (+/-)

Rationale

WASH activities can create environmental externalities like pollution, eutrophication, and climate change, which cause a range of direct and indirect effects on people's health and well-being, due to the consumption of electricity, materials for water source protection, etc.

The effects can be positive or negative depending on the causes. Initiatives that increase the use of resources and energy will have a negative impact, while WASH initiatives that lead to a reduction of resources (e.g., energy for boiling water to reduce contamination) can be considered to have a positive impact.

Agricultural and other practices that reduce contamination or improve the quality/access to water are included in the WIVF (e.g. pesticide reduction, wetlands conservation).

Output

Environmental externalities are quantified based on a reference flow of activity (e.g., km of transport), material (e.g., kg of plastic), or energy (e.g., kWh of electricity or MJ of natural gas), which represents the output (either used or avoided).

Indicators

- Volume treated/provided (mt^3, liters).
- Improved Quality of water.
- Materials /energy used for WASH provision (mt^3, kWh, etc.)
- Amount of resources used/created.

Sources

- Reported amount of energy used in providing WASH services.
- Local information on the number of facilities built/renovated.
- Testing for contaminants.
- Reported type and amount of materials used for water source protection.
- Survey on agricultural practices (e.g. pesticide reduction, efficient irrigation techniques.

Outcome

Environmental externalities are quantified using reference flows from or to nature resulting from economic activity as a first step.

The life cycle assessment (LCA) approach, methods, and databases are used to inform the cause–effect chain of events from the activity to the environmental impacts.

These impacts are categorized into three major areas of protection: human health, ecosystem services, and resources.

Indicator (ReCiPe or EF3.0 method):

- Climate change
- Water depletion
- Marine ecotoxicity
- Freshwater ecotoxicity
- Marine eutrophication
- Freshwater eutrophication
- Marine plastics
- Ionizing radiation
- Particulate matter formation
- Photochemical oxidant formation
- Ozone depletion
- Human toxicity
- Land use
- Terrestrial ecotoxicity
- Terrestrial acidification
- Metal depletion

Sources

- Ecoinvent lifecycle assessment database
- Literature on LCA or footprint

Valuation factor

Description	Source
The impacts on human health are directly related to the direct well-being pathway. The resources pathways are monetized using economic costs (damage or mitigation costs) and then translated into well-being impact (eQALY) using a utility factor.	Valuing Impact dataset.

Illustrative numerical example:

A project's electricity consumption from the local grid contributes to climate change by driving demand for energy production that releases GHG emissions.

Metric	**Output**	×	**Outcome**	×	**Additivity**	×	**Valuation factor**	=	**Societal value**
Guiding question	How much electricity is being consumed?		How much CO_2–eq is being released for every unit of electricity consumened? (ideally informed by an LCA analysis?		How much does the sponsoring organization contribute to the impact?		What is the societal value of CO_2 emissions?		What is the monetary value of the project's impact on people's well-being?
Value	1,000,000	×	0.16	×	50%	×	0.14	=	**11 Thousand**
Unit	kWh		$kgCO_2$–eq / kWh		N/A		USD / $kgCO_2$–eq		**USD**

7.3.1.8
Ecosystem services

Rationale

Activities related to nature conservation (e.g. reforestation/afforestation, wetlands restoration, sustainable agricultural practices) can create a positive impact on biodiversity while enhancing the effectiveness and sustainability of WASH programs by ensuring access to clean water and a healthier ecosystem.

Output

Indicators

- Protected areas (Ha, m^2).
- Number planting trees.
- Identification/change of Key species.

Sources

- Reported data on outcomes from nature conservation (e.g. number of planted trees.
- Monitoring key species that indicate ecosystem health.

Outcome

Each unit of area is associated with several ecosystem services (outcomes), which are valued (impact) based on primary data collection, expert interviews and data, and literature data that are transferred and adapted to the assessed cases. The types of ecosystem services can include direct-use services (e.g., fishing), regulation services (e.g., carbon storage and sequestration), and cultural values (e.g., tourism).

Indicators

- $/HA Economic Value of different types of ecosystem services.

Sources

- Global estimates of the value of ecosystems and their services in monetary units provides the value per type of ecosystem.

Valuation factor

Description

The HUT is used to reflect the well-being value of ecosystem services, which is assimilated into a change in public spending.

Source

Valuing Impact dataset.

Illustrative numerical example:

A project protects mangrove areas, which provide storm protection to coastal areas.

Metric	**Output**	×	**Outcome**	×	**Additivity**	×	**Valuation factor**	=	**Societal value**
Guiding question	What is the size of the mangrove area protected?		What is the economic value of the storm protection provided by the mangrove?		How much does the sponsoring organization contribute to the impact?		What is the well-being monetary value of the ecosystem?		What is the monetary value of the project's impact on people's well-being?
Value	1,000	×	500	×	50%	×	0.72	=	**180 Thousand**
Unit	HA		USD / HA		N/A		USD / USD		**USD**

7.3.2 Business value pathways

7.3.2.1 Increased staff retention

Rationale

WASH services at the workplace or home can significantly affect employee retention. Inadequate services may lead to voluntary turnover, as employees seek better conditions, or force them to leave due to the increased time required to access these services for their families or illnesses caused by waterborne disease.

Output

Indicator	Source
• Number of employees with higher engagement due to WASH intervention.	• Human Resources reports.

Outcome

Represents the economic value of reducing the turnover of employees at the workplace for business

Indicators	Sources
• % Increased retention rate/reduced turnover. • $ Cost of hiring/training an employee.	• Human resources at the workplace. • Literature review on average salaries in the industry.

General ecuation

Output	×		Outcome	=	Business value (USD)
# Employees with a higher level of satisfaction due to WASH intervention.		% Turnover reduction	× $ Cost hiring/training employee		

7.3.2.2
Increased productivity

Rationale

A decrease in disease incidence, workplace absenteeism, and time spent accessing WASH services can lead to enhanced business productivity. Beyond industry-specific units produced and perceived productivity, the financial benefits from this improved productivity can also be estimated.

Output

Indicator

- Number of employees with a higher level of engagement due to WASH intervention
- Number of employees with better health due to WASH initiative.
- The average number of sick days per employee per year.

Source

- Human Resources reports.

Outcome

Represents the economic value of reducing the turnover of employees at the workplace for business

Indicators

- % Increased retention rate/reduced turnover.
- $ Cost of hiring/training an employee.

Sources

- Human resources at the workplace.
- Literature review on average salaries in the industry.

General ecuation

Output	×	Outcome			=	**Business value (USD)**
# Employees with a higher level of satisfaction due to WASH intervention.		% Productivity increased	×	What is the monetary value that employees bring to the business?		

7.3.2.3
Increased reputation/business continuity

Rationale

A Company that invests in WASH services, both internally and in the surrounding community, can strengthen its image as a socially responsible business. Additionally, ensure WASH standards across their supply chain can maintain a positive reputation by aligning with global standards. This can improve relationships with stakeholders, including customers, investors, and local communities

Moreover, WASH conditions can lead to crises such as disease outbreaks, which can quickly become public and harm a company's reputation.

Output

Indicator	Source
• $ sales increased/decreased	• The total sales reported by the company.

Outcome

An increase or decrease in reputation can directly impact business value by influencing sales through changes in consumer perception, increasing or decreasing litigation costs related to reputation issues, and affecting the risks of operational disruptions.

Indicators	Sources
• % consumers lost/gained • $ Savings from Reduced Disruptions • $ Value of legal actions avoided	• Survey on consumer satisfaction. • Reported litigation costs and supply chain conflict costs.

General ecuation

Output	×	Outcome	=	Business value (USD)
$ Sales a year		% Consumers influenced by WASH initiatives reputation		

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