

BEYOND VOLUMES:

exploring the societal value
of corporate water stewardship projects

working paper



Bluerisk



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Disclaimer

The views expressed in this publication are those of the project team and not necessarily those of the project sponsors. This publication contains preliminary findings and recommendations. The goal in circulating it is to stimulate timely discussion, solicit critical feedback, and influence ongoing debate on emerging issues. This paper may eventually be published in another form and its contents revised.

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Glossary

Disability-adjusted life year (DALY)	Measure of change in a person's well-being, accounting for both quality of life (disability-adjusted) and life expectancy. This indicator can be used to measure effects on well-being beyond health.
Health utility of income	The contribution of income to an individual's well-being in a given location.
Health utility of tax	The contribution of taxes to a population's well-being in a given location.
Health	State of physical, mental, and social well-being. Health is sometimes defined more narrowly, encompassing only physical and mental health (based on medical definitions). In this report, health is defined as including well-being, representing an absolute measure of well-being
Human capital	The knowledge, skills, competencies, and attributes possessed by individuals that contribute to their well-being (adapted from the Social & Human Capital Protocol). ¹
Impact	A positive or negative contribution to one or more dimensions of well-being.
Impact pathway	A logical series of cause-and-effect chain of events that describe how a specific activity results in changes in natural or human capital. An impact pathway is described in terms of input, activity, output, outcome, and impact.
Impact valuation	Assessment and accounting of the relative importance, worth, utility, or usefulness of natural or human capital to people and society. Valuation can be monetary or non-monetary (e.g., expressed in physical metrics or quantities).
Outcome	Changes in the lives of those in a target population or natural ecosystem (e.g., difference of income from a living wage, or additional income opportunities derived from acquiring a skill).

¹ Capitals Coalition. 2019. [Social & Human Capital Protocol](#).

Output	Direct measurable result of an activity (e.g., income, access to health care, hours of training received, emissions of greenhouse gases)
Regenerative agriculture	Regenerative agriculture is an alternative means of producing food that has lower—or even net positive—environmental or social impacts.
Social capital	Public institutions, infrastructure, resources, social networks and their shared norms, values, and understanding in a society (adapted from the Social & Human Capital Protocol). ²
Societal value	Any change in status of society value that affects social or human capital, or well-being of individuals or populations, directly or indirectly.
Water stewardship	The use of water that is socially and culturally equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that includes both site- and catchment-based actions. ³
Well-being	State of being comfortable, healthy, or happy. Well-being can be measured in absolute or relative terms related to a person. In this methodology, an absolute measure of well-being that encompasses both quality of life and life expectancy was used.

² Capitals Coalition. 2019. [Social & Human Capital Protocol](#).

³ [Alliance for Water Stewardship website](#) (accessed on August 9, 2022).

Abbreviations

DALY	disability-adjusted life year
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
m³	cubic meter
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
Reg. Ag.	regenerative agriculture
ROI	return on investment
SROI	social return on investment
tCO₂	tonnes of carbon dioxide
US\$	United States dollars
VWB	volumetric water benefit
VWBA	volumetric water benefit accounting
WASH	water access, sanitation and hygiene
WHO	World Health Organization

Executive summary

In response to emerging water challenges, a growing number of companies are engaging in corporate water stewardship and working with others to achieve more sustainable water management. Many of these companies use volumetric water benefit accounting (VWBA) to estimate volumetric water benefits (VWBs) and identify, select, and monitor projects. However, experience on the ground has shown that the same VWB in different locations delivers very different societal value.

This paper aims to show the link between VWBs and societal value, and to explore the feasibility of using existing methods to quantify and value the societal impact of water stewardship projects. The ultimate goal is to improve decision-making and strengthen water stewardship strategies and outcomes.

To achieve this outcome, Bluerisk, the Bonneville Environmental Foundation, and Valuing Impact worked with The Coca-Cola Company, Danone S.A., Ecolab Inc., and Nestlé Waters to estimate the societal value of 22 different water stewardship projects across nine project categories in 11 different countries. The estimate used social return on investment (SROI) methods coupled with the frameworks from the Natural Capital Protocol and the Social & Human Capital Protocol.⁴

The results showed that it is possible to measure societal value along a wide variety of impact dimensions. All 22 projects delivered positive societal value, with a combined positive societal impact of \$39 million in U.S. dollars (US\$) a year. The VWB measure was found to be a good indicator that positive societal value is delivered, although the measure is not correlated with the magnitude of the effect. The magnitude of the effect is most likely influenced by other dimensions, such as the local context, stakeholder preferences, project design criteria, and so on. The valuation of societal impact is thus an important indicator to measure, a complement to the VWB that informs decision-making and strategy.

The SROI ratio, which measures the total societal value generated per dollar invested in a project, was used to normalize and compare results across geographies and project categories. An alternative indicator used to normalize results is the value per drop—that is, the societal value divided by the VWB, measured in dollars per cubic meter (US\$ / m³). The average SROI across projects was found to be 3.95 (that is, for every dollar invested, 3.95 dollars were delivered in terms of societal value), and the average value per drop was found to be 0.19 US\$ / m³.

4 Capitals Coalition. 2019. [Social & Human Capital Protocol](#).

Analyzing the SROI and value per drop indicators more closely showed an important variation in results across the portfolio of project. The projects' contributions in terms of impact drivers were also very variable (e.g., well-being, income generation, education and skills, ecosystem services), revealing the opportunity to optimize projects' societal value per unit of cost or unit of VWB across impact drivers. A correlation between societal and business value was also analyzed and found to be inconclusive. Some projects did deliver both societal and business value, highlighting an important opportunity to scale up water stewardship strategies.

These and other findings indicate that estimating the SROI may significantly improve decision-making by offering insights into how projects can be identified, designed, and implemented to optimize for societal value. However, these findings need to be taken in the context of the limited scope of this project, which analyzed a relatively small number of water stewardship projects together with a preliminary impact framework and method. In short, more research will be needed to strengthen and expand the findings of this paper.

To scale up the magnitude and impact of corporate water stewardship investment, it will be essential to build on the current processes used to identify, vet, and select projects, and to improve and expand the metrics used to measure and report progress by going beyond volumes toward consistent, comparable, and relevant societal value metrics.

Moving forward, the team seeks to

- advance the development of standardized methods for understanding and valuing the societal impact of water stewardship projects;
- strengthen and expand the results presented here by covering more projects; and
- improve the current impact framework to facilitate selection and support of projects that expand societal benefit alongside water resilience.

The team aims to achieve this through a follow-up project involving more partners, experts, and stakeholders. If you are interested, please contact the project team.

Background

Water is one of the world's most important renewable and shared resources. Water security is essential to society; it provides critical support for socioeconomic development, environmental sustainability, agriculture, energy production, and human health and well-being.⁵ At the current rate of use, 40 percent of the global population will live in regions of high water stress by 2030. At the same time, 80 percent of water pollution from wastewater discharge is currently untreated, and nonpoint sources from agricultural runoff will further threaten human access to water and significantly damage biodiversity. This situation is exacerbated by climate changes that put additional pressure on water resources.

This global water crisis not only affects human communities and natural ecosystems, but also creates business risks and causes financial impacts across the private sector. As a result, more companies are seeing the business value in engaging in corporate water stewardship.^{6,7} Corporate water stewardship helps companies understand, identify, and mitigate water-related business risks by recognizing the shared nature of water challenges and working with others to achieve more sustainable management of water resources. Investing in corporate water stewardship can not only improve water security for companies but also generate a suite of cobenefits that improve the conditions for society as well.⁸

To date, many companies have made progress in assessing the environmental benefits of water stewardship. Over the past few years, the volumetric water benefit accounting (VWBA) method⁹ has become an increasingly common approach used by companies to assess the benefits of water stewardship and the merits of various water stewardship opportunities, which contributes to solving shared water challenges. Many companies also use VWBA methods to track progress toward meeting public commitments to restore, balance, replenish, or regenerate a certain volume of water in ways that may reduce business risk and address local shared water concerns. However, the VWBA

5 [UNESCO World Water Assessment Programme. 2020. United Nations World Water Development Report 2020: Water and Climate Change.](#) Paris.

6 [World Wildlife Fund webpage on corporate water stewardship](#) (accessed on August 9, 2022).

7 [CEO Water Mandate webpage on resilience](#) (accessed on August 9, 2022).

8 World Bank. 2019. [A Water-Secure World for All.](#) Washington, DC.

9 Reig, P., W. Larson, S. Vionnet, and J.B. Bayart. 2019. "[Volumetric Water Benefit Accounting \(VWBA\): A Method for Implementing and Valuing Water Stewardship Activities.](#)" Working Paper. Washington, DC: World Resources Institute.

method is focused only on the accounting of volumetric benefits; measuring additional dimensions, such as the social, cultural, and economic benefits of water stewardship, has presented a challenge. These additional benefits include everything from acres of restored habitats, greater availability of fresh water, and increased biodiversity to more recreational space, additional jobs, fewer social costs, and increased tax revenue.

Although many corporate water stewardship projects have successfully accounted for volumes of water, water stewardship is not only about volume, but also about using water in a way that is socially equitable, environmentally sustainable, and economically beneficial. To account for societal impacts and benefits adequately, metrics for the social and economic benefits that ensue from these efforts are needed.

Problem statement

The reality of water is local—the same volumetric water benefit in different locations will likely deliver very different social and environmental (societal) benefits, depending on the type of activity and the local catchment context. Because of this, evaluating investments in water stewardship using volumetric water benefits (VWBs) alone may address shared water challenges, may even deliver high volumes of water, but may not maximize the societal impacts generated by those corporate investments. For example, a cubic meter of water delivered to a household without access to water provides a different societal value (e.g., reduction of waterborne diseases and increased ability to access employment and education) than does a cubic meter of water captured in a stormwater management system (e.g., avoidance of downstream water treatment costs or provision of ecosystem services). Similarly, a cubic meter of water treated and discharged into an irrigation canal provides a different societal value (e.g., increased agricultural productivity) than does a liter of water discharged into a wetland (e.g., increased carbon storage capacity or enhanced biodiversity). It is the project team’s assumption that understanding such differences and being able to measure them quantitatively will improve decision-making processes and strengthen water stewardship strategies and outcomes.

Given the interest in the VWB methods used in water stewardship strategies, this paper addresses the following questions on the connection between societal value, VWBs, and business value:

Question 1: How do VWBs and societal value compare?

Question 2: Can societal value be quantified to improve decision-making during water stewardship project discovery and design?

Question 3: Can societal value and business value be pursued in parallel?

This work is part one of a two-phase study that will inform the development of a common framework, guidance document, or other tools to enhance water stewardship decision-making during project discovery and design. It will also help companies maximize project value for both business and society. A second phase of work will aim to involve more organizations, experts, and stakeholders than did the first.

Approach

To answer the questions listed above, Bluerisk, the Bonneville Environmental Foundation, and Valuing Impact worked with The Coca-Cola Company, Danone S.A., Ecolab Inc., and Nestlé Waters to estimate the societal value of 22 water stewardship projects across nine project categories in 11 different countries (Appendix 1); one project was global (Table 1). Combined, the 22 projects

- delivered more than 210 million cubic meters in VWBs;
- comprised a total annualized cost of US\$ 9.9 million;
- played an important role in achieving company objectives for water stewardship; and
- were selected to yield a diverse range of societal benefits, activity types, and geographies.

By answering the three questions noted earlier, the team hopes to

- support the improvement of methods to identify, design, and measure the progress of water stewardship projects;
- create insights to inform the development or refinement of corporate water stewardship strategies in ways that accelerate and scale societal value; and
- provide a foundation for the development of an impact valuation framework for water stewardship projects that could be used by any company globally.

Table 1

Country, Project Type, and VWBs		
Country	Project Type	Estimated VWB (m³/year)
Argentina	Forestry	111,388,000
Belgium	Reg. Ag.	30,757
Ecuador	Forestry	920,000
Egypt	WASH	900,000
Greece	Water supply infrastructure	175,000
Indonesia	Forestry	83,010
Indonesia	Industrial water efficiency	7,800
Indonesia	Water supply infrastructure	167,055
Indonesia	WASH	61,703
Italy	Irrigation	1,000
Mexico	Reg. Ag.	208,011
Mozambique	WASH	20,747
Switzerland	Water supply infrastructure	69,060
United States	Industrial water efficiency	2,116
United States	Industrial water efficiency	16,219
United States	Water supply infrastructure	242,177
United States	Reg. Ag.	92,235,311
United States	Reg. Ag.	581,583
United States	Forestry	362,455
United States	Floodplain	17,570
United States	Wetlands	19,100
World	Ag. water quality	3,393,600
Grand Total		210,902,275

Note: WASH = water access, sanitation, and hygiene; Reg. Ag. = regenerative agriculture.

Limitations

The portfolio of projects assessed is not fully representative of all possible water stewardship projects; further, local context, project design, and partners have an important role and may influence in the success of these projects. Nevertheless, these projects, which were carefully selected in consultation with local stakeholders, successfully addressed the identified local shared water challenges while delivering both VWBs and societal value. Table 2 offers a snapshot of the work this paper presents and notes what it does not.

Table 2

Scope of Work

What this paper is

What this paper is not

An initial high-level exploration and quantification of activities that deliver VWBs and positive societal value

A conclusive comparison between the correlation of VWBs and societal value

A demonstration that societal value can be measured and valued, and that such measurement can bring useful information for decision-makers to strengthen water stewardship strategies and investment decisions

A detailed and statistically significant assessment of a large portfolio of projects

A small portfolio of illustrative projects

A conclusive assessment of the value generated by different project categories and a recommendation for one project category over another

A call to action to develop standardized methods and to develop a second phase of work using more detailed data and a larger portfolio of projects

A standard impact framework and method

Method

Over recent years, several methods have emerged that estimate the full value of natural, human, and social capital impacts across corporate value chains.¹⁰ Frameworks to measure societal value are also becoming more frequently used by the public, not-for-profit, and financial sectors; such frameworks have been developed by the Global Impact Investing Network,¹¹ the Impact Management Project,¹² the Capitals Coalition,¹³ and the Value Balancing Alliance.¹⁴ The team used the SROI ratio,¹⁵ the Natural Capital Protocol,¹⁶ and the Social & Human Capital Protocol¹⁷ to estimate the societal value generated by each project (in particular, to estimate projects' outcomes and impacts). The SROI method has been used extensively in the past 10 years in a variety of contexts and in various activity sectors. Two emerging frameworks, the Natural Capital Protocol and the Social & Human Capital Protocol, are in position to become the most influential frameworks for the private sector. Each has an active community of supporters and is in use by a range of organizations throughout the world.

For this paper, the team obtained project specific variables for each of the 22 projects from The Coca-Cola Company, Danone S.A., Ecolab Inc., and Nestlé Waters. These variables included

- activities carried out and their location;
- stakeholders involved and affected;
- financial input and cofinancing;
- duration of the activities; and
- a variety of activity-specific outputs that were delivered.

10 For instance, see [Natura & Co.](#), [Novartis](#), or [Olam](#) (accessed on August 9, 2022).

11 [Global Impact Investing Network website](#) (accessed on August 9, 2022).

12 [Impact Management Project website](#) (accessed on August 9, 2022).

13 [Capitals Coalition website](#) (accessed on August 9, 2022).

14 [Value Balancing Alliance website](#) (accessed on August 9, 2022).

15 Social Value UK. [A Guide to Social Return On Investment 2012](#). Liverpool, UK: Social Value Network UK.

16 Capitals Coalition. 2016. [Natural Capital Protocol](#).

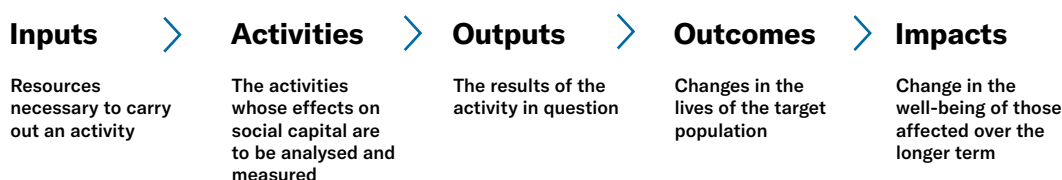
17 Capitals Coalition. 2019. [Social & Human Capital Protocol](#).

The activity-specific outputs included, for example, the area of land or natural infrastructure conserved or restored, the number of beneficiaries reached, the number of hours of training or experience delivered, changes in agricultural practices, a change of income for stakeholders, the cost of activities, or VWBs delivered.

To estimate societal value, the team developed impact pathways (Figure 1) to build a framework (Figure 2) and applied the framework to each project. The impact framework links the inputs (resources used by companies and their partners), the activities covered (the broad theme of the project), and the outputs (main themes covered, using a range of output metrics) to the outcomes and impacts. Applying an impact framework made it possible to estimate the outcomes, impact, and societal return on investment of each water stewardship project according to their local context (Appendix 2).

Figure 1

Illustration of a Standard Impact Pathway¹⁸



The outcomes were defined as a change in economic value for a stakeholder (e.g., income generated or costs avoided) or as direct impacts on human well-being, using disability-adjusted life years (DALYs) (e.g., diseases avoided). To translate the economic outcomes from all project types into human well-being (including for natural capital projects), utility models and valuation factors¹⁹ were used. These factors were aligned with the local context (e.g., watershed, region, country) whenever data were available.

Measuring the impact as well-being does not mean the focus was only on human health—very far from it. All possible activities lead to a change in human well-being, even the measure of natural capital through ecosystem services. These changes in well-being are traditionally valued in terms of the costs to society, individuals, or businesses, all of which in turn directly affect quality of life (e.g., better air quality, less climate change, increased water availability, etc.). However, measuring a single impact connected to all types of activities, output, and outcomes makes it possible to obtain consistent, comparable, and relevant impact results.

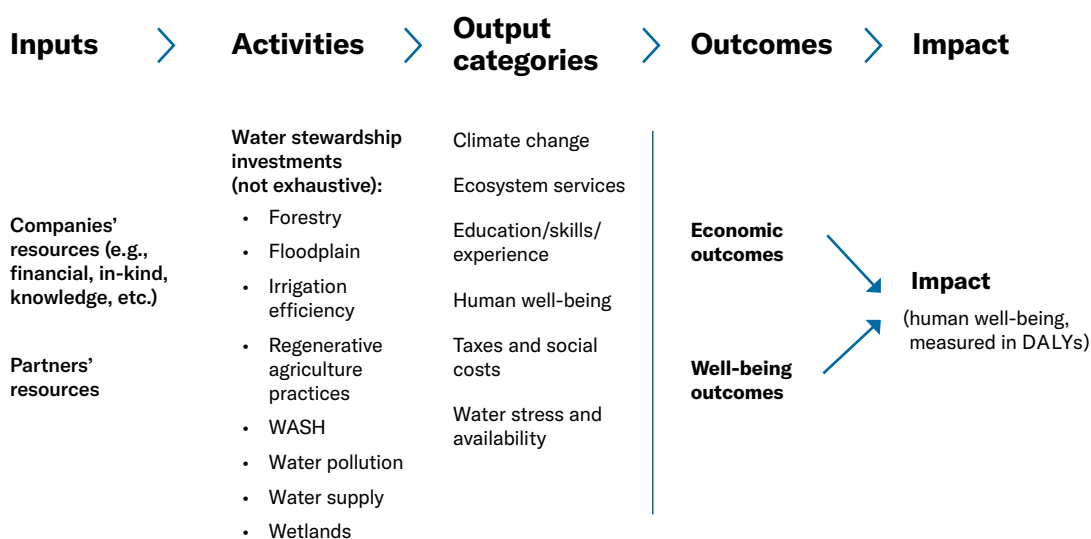
The valuation of DALYs, or well-being, uses the societal concept of the utility of life. This concept uses as a proxy the average economic productivity of a life (40,000 US\$/DALY). Appendix 2 provides a summary of the methodology used to value each of the outputs (or impact driver) listed in Figure 2.

¹⁸ Adapted from the [Capitals Coalition’s Social & Human Capital Protocol](#) (2019).

¹⁹ Vionnet, S., R. Adhikari, and S. Haut. 2021. [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.

Figure 2

Impact Framework



The impact framework outlined above was chosen because it provides three key characteristics:

- **Comprehensiveness:** The proposed approach allows consideration of all activities and impacts across natural, social, and human capital. All types of activities in the lifetime of the projects assessed can also be considered, which ensures the capture of all the potential positive and negative impacts of a project.
- **Relevance:** The approach relies on using an impact pathway from input, activity, output, outcomes, and impacts, which ensures a strong focus on measuring what matters. Impact was defined as the value of human well-being (social and human capital) linked to all types of activities carried out by humans, whether they impact human well-being directly or indirectly (economic activity).
- **Comparability:** The approach of valuing the societal impact of each project, activity, and pathway allows for greater consistency in the way impact is measured, which leads to more accurate comparability across very different project types. For instance, it is possible to measure the relative value to society of job creation, water stress reduction, greenhouse gas (GHG) emissions avoided, education, change of behaviors, and tree planting in a consistent way.

To evaluate results, two ratios were used to normalize results and compare projects, including:

Social return on investment ratio (SROI)

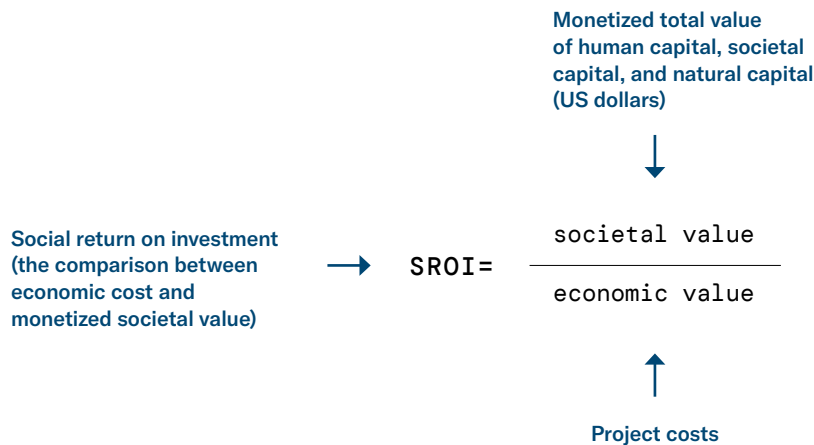
defined as the ratio between the total societal value generated by a project (monetized, expressed in US\$/year) divided by the input invested in a project (annualized value in US\$/year) (Figure 3). The higher the ratio, the higher is the efficiency of a project in delivering societal value.

Return on investment (ROI)

defined as the total net business value generated (monetized, expressed in US\$/year) divided by the financial input invested in a project (annualized value in US\$/year). The business value is estimated as a combination of direct operational costs, changes in revenue, and avoided risk internalization (e.g., license to operate, physical risks of shortage of water, regulatory risks of water regulations, etc.).

Figure 3

Social Return on Investment Calculation



Results

The 22 projects studied were not linked to company names to maintain confidentiality and help focus attention on the results. Combined, the 22 projects delivered a total societal benefit of US\$39 million/year, while the average value per drop is 0.19 US\$/m³ (societal value divided by the volumetric water benefit) (Table 3). The average SROI is 3.95, meaning that for every dollar invested in a project, on average US\$3.95 of societal value is delivered.

Table 3

Summary of Results for the Projects Assessed

Projects Assessed	Total Volumetric Water Benefit (m ³ /year)	Total Societal Value (US\$/year)	Average SROI
22	211 million	39 million	3.95

The results indicate that the 22 projects evaluated all delivered societal value according to the local context and addressed the identified shared water challenges in consultation or partnership with local stakeholders. The SROI indicates that the projects delivered more in value than what they cost, demonstrating that in addition to VWBs, these projects were efficient at delivering societal value.

The results were used to help answer the three questions posed earlier:

Question 1: How do VWBs and societal value compare?

Question 2: Can societal value be quantified to improve decision-making during water stewardship project discovery and design?

Question 3: Can societal value and business value be pursued in parallel?

Question 1: How do VWBs and societal value compare?

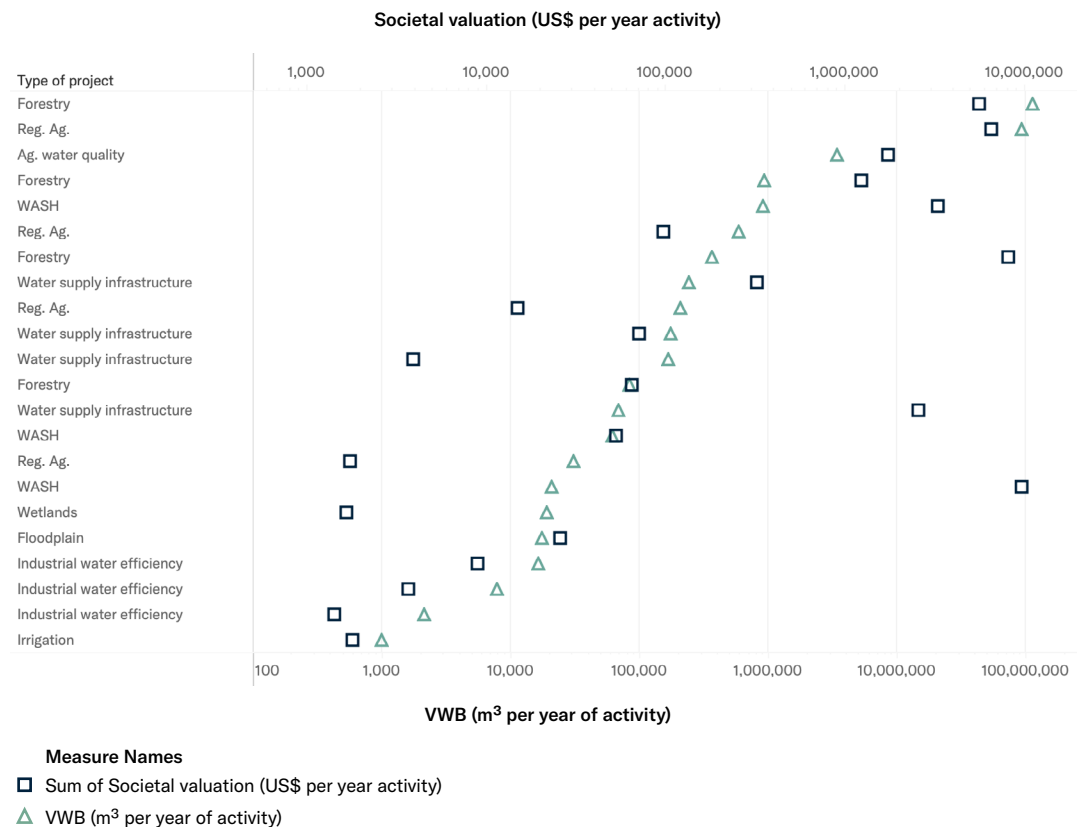
For all the projects assessed, positive societal value was created in parallel to volumetric water benefits, demonstrating that VWB is an accurate predictor for positive societal value, although the magnitude of the societal value varies greatly depending on the project and local context (Figure 4). The fact that the magnitude of VWBs delivered does not directly correlate to the magnitude of societal value could indicate the context-specific nature of projects—meaning that a VWB could deliver societal value for one activity in one location but may not necessarily do the same in a different location, given the different local context, varying project objectives, and stakeholder preferences.

This indicates that it likely cannot be concluded that a project category always delivers more societal value than another category, as it will depend on the local context and project setting rather than the category itself. Some projects deliver relatively small VWBs while delivering significant societal value, and the converse can also be true, highlighting again the importance of the local context. Due to the small sample size of each project type within the study’s scope, none can statistically be associated with higher societal or VWBs than others. The study also analyzed the correlation between societal value and severity of water stress, and no clear trend was identified.

More research, based on a larger sample size, is needed to analyze further this correlation between VWBs and the magnitude of societal value. Further research can help determine whether some key driving factors could be identified.

Figure 4

Absolute Societal Value Generated (in US\$/year) Plotted Against the Volumetric Water Benefit Generated (m³ per year of activity) (logarithmic scale)



Overall, the results indicate that for the 22 projects that were assessed, the following was true:

- VWB is associated with positive societal value (measured quantitatively).
- The magnitude of the societal value measured quantitatively depends on multiple factors including local context, project objectives and stakeholder priorities.

Question 2: Can societal value be quantified to improve decision-making during water stewardship project discovery and design?

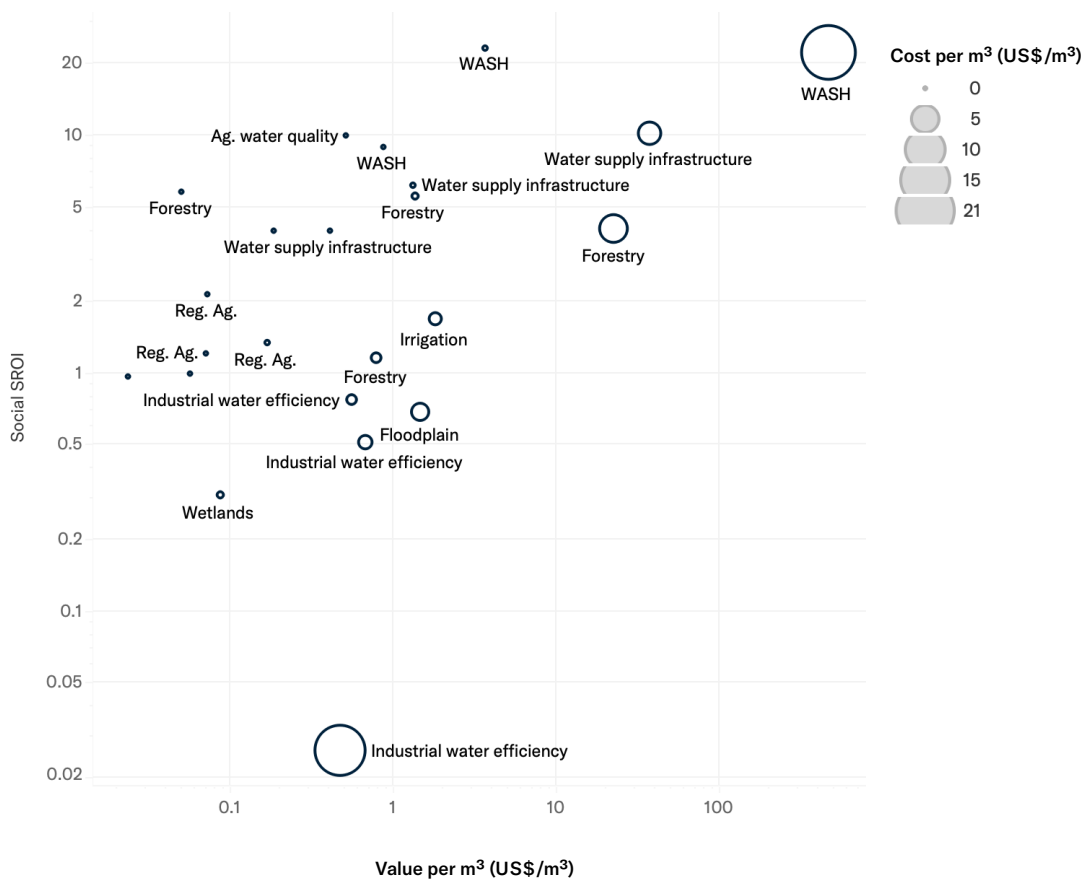
The short answer is yes, societal value can be measured in a consistent way across project types to help inform decision-making and understand the ability of water stewardship projects to deliver societal value. When measuring the performance of projects, it is often useful to normalize the results to make them comparable. To achieve that, the ratio between the societal value generated (in U.S. dollars) and the input required to deliver it (also in U.S. dollars), commonly refer to as the SROI, was estimated. The value per drop (US\$/m³), which is the ratio between the societal value generated (US\$/year) and the VWB (m³/year), was also estimated. Both are performance indicators that allow comparison of results among various projects and require similar input data, including societal value generated (in US\$/year), project cost (in US\$/year), and project VWB (m³/year).

The SROI and value per drop were plotted for the project portfolio evaluated in this study, using logarithmic axes to visualize and account for a wide range of results (Figure 5). The range of SROI varies from 0.02 to 20, meaning that for every U.S. dollar invested in a project, an equivalent societal value of between 0.02 to 20 is delivered. Like the SROI, the value per drop shows a large range, from close to 0 to 461 dollars per cubic meter (US\$/m³), although most of the projects are in the range of 0.1 to 3 US\$/m³. The wide range of results demonstrates that there is a clear opportunity to improve the project selection process by directing investments toward solutions that more efficiently generate societal value.

The two indicators can be used to optimize decision-making processes when investing in water stewardship projects that deliver VWBs. The SROI is particularly useful for deciding between projects when there is a budgetary constraint, helping to optimize a portfolio of projects by focusing limited funds on the projects that deliver the highest impact. In addition, these same selection criteria can be used to optimize the design and development of new projects to maximize societal value. On the other hand, the value per drop is useful to maximize societal value when establishing and pursuing volumetric commitments, such as water replenishment, restoration, balance, or regeneration targets.

Figure 5

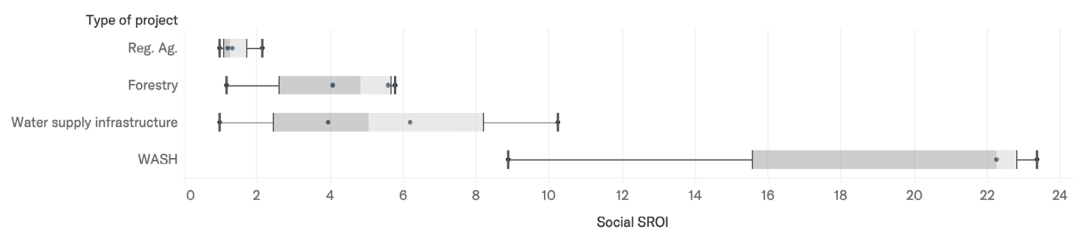
Measure of Efficiency: SROI Plotted Against Value per Drop (US\$/m³)



The distribution of SROI results across four project types for which we had sufficient data points (Figure 6) was compared. For all project types, there is a wide range of SROI and value per drop, which shows that opportunities for improvements could be actively targeted. This large range in efficiency highlights, again, an opportunity to incorporate societal value as a consideration during the decision-making process when selecting, designing, and delivering projects over time. Each project is unique, and with societal value as a consideration, more projects can be selected that deliver greater societal value in alignment with the local context.

Figure 6

Variation of SROI across Project Categories



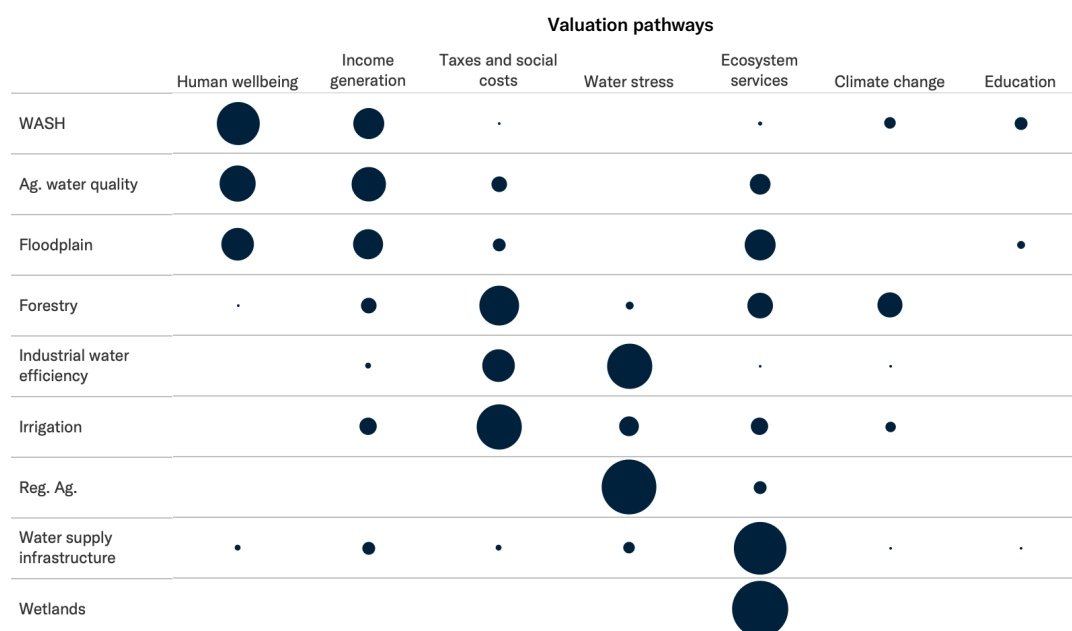
According to this analysis, the optimization drivers can be quite diverse. The importance of the following was identified:

- Understanding and incorporating the local context, in particular local socioeconomic and environmental conditions, into the project selection process;
- Ensuring that a selection process considers project alternatives that carry the greatest potential to deliver combined societal and water benefits and that due diligence is carried out;
- Being flexible with the project design, implementation, and funding timelines, to ensure that investments address the root causes of shared water challenges; and
- Partnering with the right organizations to deliver impact at scale and across human, social, and natural capital.

The benefits generated, per type of valuation pathway, for each project category reviewed in this study appear in Figure 7. The data demonstrate that the types of societal value generated across different project types differ greatly depending on the project category and even on the specific project selected. Understanding the mechanisms and pathways behind how projects deliver societal value is key to developing and selecting projects that optimize impact. Although the projects are grouped here for demonstrative purposes, each project is unique and can have a different result profile per valuation pathway.

Figure 7

Results per Project Category and Relative Contribution by Impact Pathway



Overall, for the projects that were assessed, the results indicate the following:

- Measures of societal value generated can be estimated per project and used to improve decision-making around project selection and management. Understanding the SROI and value per drop gives practitioners more insight into how different projects can be optimized to maximize the societal value.
- The estimation of societal value should be as granular and regionalized as possible to support decision-making. Such granular results, combined with aggregated metrics of efficiency such as SROI and value per drop, can be used to draw key insights into project impacts.

Question 3: Can societal value and business value be pursued in parallel?

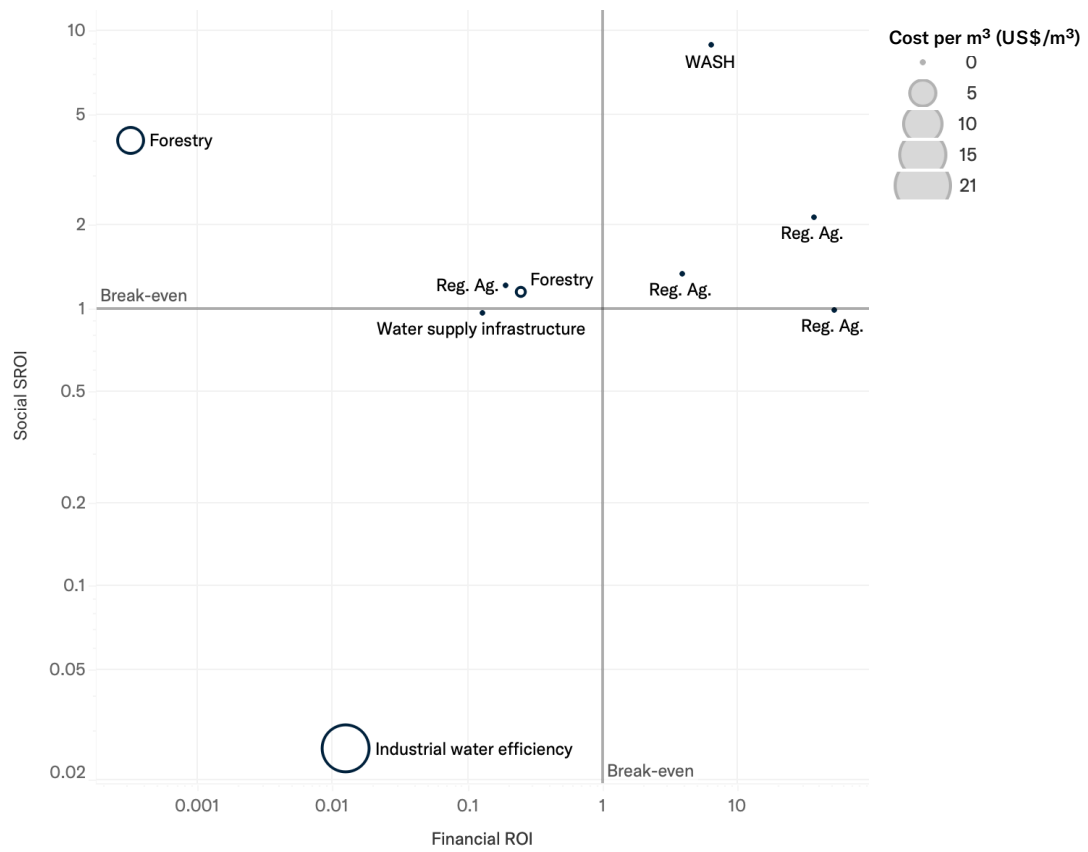
Of the 22 projects that were assessed, there were nine projects for which there was additional information on the business drivers and objectives associated with the project. For those projects, the correlation between societal value and business value (measured as financial ROI) was evaluated. Business value was defined as

- reductions in direct operational costs at facilities or sites;
- increased or maintained revenues, through reputational and brand value associated with water stewardship action and engagement undertaken by a company; and
- risks avoided through investments at the watershed level that address shared water challenges and their root causes.

The results regarding this correlation are inconclusive (Figure 8). This may be because of a limited sample size or a lack of transparency as to why the specific projects were chosen. The fact that some water stewardship projects do not deliver both societal and business value represents a major barrier to accelerating and scaling corporate water stewardship programs around the world. Yet it also offers a major opportunity moving forward. Companies that identify projects that deliver both societal and business value will undoubtedly be more effective at reducing physical risks and strengthening their social and legal licenses to operate in both the short and the long term.

Figure 8

SROI (societal value) Plotted Against Financial ROI (business value)



Discussion

Investments in corporate water stewardship have generated significant positive impact and value, with demonstrated potential to help overcome shared water challenges. As this work evolves, opportunities are emerging to improve implementation strategies, enhance business value, and increase the societal impact and cobenefits generated by corporate investments. In particular, untapped potential exists to increase the societal benefits that accrue along with water resilience and security outcomes. Some simple modifications to existing project selection and development processes—modification supported by quantitative metrics of societal value highlighting specific impact drivers—can help leverage corporate investment and achieve a broader set, and higher value, of social and environmental benefits.

Because VWB is a primary selection factor and impact measure for many projects, to scale up the magnitude and impact of corporate water stewardship investment, it is essential to build on the current processes used to identify, vet, and select projects, and evolve and expand the metrics used to measure and report progress by going beyond volume toward consistent, comparable, and relevant societal value metrics. Companies could begin now to:

- Build on the project selection process to rigorously assess which projects can simultaneously achieve VWB, societal value, and business value. Modification to the project selection process can strengthen the business case and encourage increased investment from more companies.
- Enhance corporate goals and commitments to extend beyond a simple volumetric measure of success. This will emphasize the importance of societal impact and business value that can be readily generated by water stewardship action.
- Reframe program budgeting and timing processes used to identify, curate, select, and fund projects to ensure that sufficient flexibility exists in identifying and selecting projects on the basis of the greatest local impacts and long-term value.

Companies should also realize that in some cases, a single project will not generate a range of cobenefits. A portfolio approach to selecting projects can allow companies to maximize impacts across water needs and business and social value.

Four additional developments would support achievement of the recommended actions:

- A common impact framework specific to water stewardship should be consolidated. This can be based on the preliminary impact framework proposed here and on other supporting frameworks, a literature review, and stakeholders' or experts' inputs.
- Experience should be accumulated and shared on the deployment of the impact framework by assessments of a wider range of projects across diverse geographies and project categories.
- More in-depth analyses of societal value and results should be completed to develop insights that will broadly inform and strengthen water stewardship strategies.
- More partners should subscribe to and participate in this agenda to ensure acceptance and scale.

To conclude:

This paper presents a call to action that seeks to do two things: to expand collaboration on developing standardized methods for understanding and estimating the societal value of corporate water stewardship projects and to evolve the current concept of a water stewardship impact framework to facilitate selection and support of interventions that expand societal benefit along with water resilience. The current approach and analysis have limitations. As a next step, this work could be strengthened by engaging additional organizations, experts, and stakeholders to enlarge the assessed portfolio of projects and different points of views. Expanding the field of projects would lead to better conclusions regarding trends, better analytics, and more holistic views on the relationship between VWBs and societal value.

Appendix 1:

Project categories

Flood plain

Activities aimed at creating natural infrastructure and improving stormwater or flood management. It is typically an area that can store part of the excess water received through infiltration, storage, or topography design. This type of project usually has the benefit of avoiding damage to houses and infrastructures, as well as improving water quality.

Forestry

Activities related to reforestation or forest conservation and management. Forests are key natural infrastructures that can deliver various water benefits to society and communities (e.g., access to fresh water, seasonal water availability, groundwater recharge, water filtration to reduce nonpoint source pollution). These projects actively reforest an area, or conserve or manage an existing forested area, to deliver water, biodiversity and carbon benefits, and sometimes economic activity benefits and access to water for humans.

Irrigation

Activities linked to the optimization of the use of irrigation water for agriculture production. These projects can deliver benefits not only in terms of reduction of water stress, but also in terms of carbon benefits (reduced energy used to pump water and for infrastructures and fertilizers application optimization) and income (reduced costs of production).

Regenerative agriculture (Reg. Ag.)

activities on agricultural lands and farms that include mulching, composting practices, soil cover and soil health, intercropping, crops rotation, and no tillage, among others. These activities usually improve soil health and water retention and filtration, but also deliver benefits in terms of crop productivity, resilience, and farmer income.

Agricultural water quality (Ag. water quality)

Activities that reduce nonpoint sources of pollution from agriculture. The societal value covers biodiversity, farmer income, crop productivity, and water utility reduced treatment costs.

Water, sanitation, and hygiene (WASH)

Activities to remediate the lack of access to WASH for communities. There is still a big fraction of the world population lacking basic services, leading to a range of different impacts that could be avoided: lack of education, land use change (deforestation), lack of productive time, diseases (diarrheal diseases in particular), and so on.

Industrial water efficiency

Activities that deliver reduced water use per unit of production at industrial sites related to leaks, efficiency of processes, water treatment, recycling, and other similar solutions. These activities can generate reduction of water stress, reduction of energy and infrastructure use, and reduced costs of operation, among other benefits depending on the local context.

Water supply infrastructure

Activities to ensure the supply of water to communities through various investments in natural or gray infrastructure. The key benefit of these activities is the resilience of the water supply for communities and the reduction of water stress.

Wetlands

Activities that conserve or create wetlands, which support key ecosystem services (water filtration and regulation, carbon storage, etc.) and support habitats for biodiversity.

Appendix 2:

Detailed description of impact pathway modeling

The following impact pathway categories were used in the impact framework and model developed to assess the different projects reported on here. These are not exhaustive; other impact pathways could be added to account for more societal value delivered. However, for the limited scope of this paper, these are the most important pathways covered.

Climate change

The impact on climate change was assessed as reduced emissions of greenhouse gases (GHGs) or carbon sequestration by ecosystems (e.g., forests). Standard carbon accounting frameworks such as the GHG Protocol or ISO 14064, and data sets and methods (e.g., from the ecoinvent database or IPCC) were used. For instance, the forestry projects accounted for the yearly carbon sequestration by trees while the irrigation efficiency projects considered the emissions avoided by reduced energy use for irrigation. Some water, sanitation, and hygiene projects considered the emissions avoided by reduced energy used to boil the drinking water for households, reducing further deforestation in some cases. The valuation of the GHGs was done using the social cost of carbon, calculated as 120 U.S. dollars divided by tonnes of carbon dioxide equivalent (120 US\$/tCO_{2e}). This economic cost to society was then translated into a societal value, based on the valuation of human well-being, using a publication on the health utility of tax²⁰ with a worldwide average factor, given that climate change is a global issue.

Ecosystem services

Ecosystem services, which cover provisioning, regulating, and cultural services, were valued using standard environmental economic methods (such as damage or mitigation costs, stated or revealed preferences, or market prices), often using transfer value from literature adapted to the local context. The resulting change in economic value to society that those ecosystem services provided was then valued using the health utility of income and tax publication,²¹ considering local valuation factors (associated to the health utility of tax as this value is shared among stakeholders) at the country level to account for the local context whenever possible.

20 Vionnet, S., R. Adhikari, and S. Haut. 2021. *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.

21 Vionnet, S., R. Adhikari, and S. Haut. 2021. *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.

Education

Education can refer to different activities related to the gain of experience by volunteers or project stakeholders, the training of students, or professional training, for instance. Education is valued using the future potential earning premium concept, which assumes that training will lead to better professional opportunities and income in the future. This study considered earning premium per type of education, data published by the World Bank²² that were then associated to the duration of the training (or equivalent) received by the different stakeholders. The potential additional income was valued using the health utility of income,²³ which is provided at country level.

Human well-being

Human well-being is assessed based on the disability-adjusted life year (DALY) indicator, which is a common indicator and method used by policy decision-makers, nongovernmental organizations, research institutes, and in the private sector. The DALY measure considers the changes in quality of life, positive or negative, that are associated with a disease, accident, or health condition (such as depression, sense of inclusion, etc.). As its name indicates, it multiplies a condition weight (in percent) by a duration (in years). Condition weights are published by the World Health Organization in *The Lancet* and can easily be adapted to conditions that are not explicitly included by comparison techniques. The DALYs calculated were then valued using the technique of social utility of life, which can be estimated by an ideal production capacity of humans (using as a proxy the gross domestic product per capita of countries in the Organisation for Economic Co-operation and Development, e.g.). This is a low estimate of the value of life, as its utility is generally higher than just its economic production potential. However, it was used here as a conservative reference.

Income generation

Change of income for different stakeholders was assessed based on standard accounting techniques, using whenever possible primary data on cost reduction or increased income from jobs creation. Whenever primary data were not available, average salaries data and change estimates from the literature were used. The change of income was then valued using the health utility of income valuation factors,²⁴ which are specific to each country, to translate change of income into a change of well-being.

22 Montenegro, C. E., H.A. Patrinos, and H. Anthony. 2014. Comparable Estimates of Returns to Schooling Around the World. Policy Research Working Paper No. 7020. Washington, DC: World Bank Group.

23 Vionnet, S., R. Adhikari, and S. Haut. 2021. 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.

24 Vionnet, S., R. Adhikari, and S. Haut. 2021. 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.

Taxes and social costs

Taxes were estimated mostly from personal income taxes whenever a change of income was assessed. A change of social costs, or social benefits, for the activities that had a direct impact on public spending in general was also considered. For instance, whenever a change of health status was assessed, a reduction of health care costs or social benefit (e.g., unemployment) was estimated as a direct result in some cases. All those effects, taxes, and social costs were then valued using the health utility of tax valuation factors, which are specific to each country.

Water stress and availability

The change in water availability, often linked directly to a volumetric water benefit, was assessed considering the avoided cost to society or specific stakeholders, using a mitigation/solution cost approach. Country- and sector-specific estimates of those costs were used, based on a publication of the World Resources Institute that included a public data set.²⁵ The associated cost for the society (which is specific to each country) was then valued, using the health utility of taxes valuation factors to translate those into a change in well-being.²⁶

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- 25 Strong, S., S. Kuzma, S. Vionnet, and P. Reig. 2020. *Achieving Abundance: Understanding the Cost of a Sustainable Water Future*. Working Paper. Washington, DC: World Resources Institute.
- 26 Vionnet, S., R. Adhikari, and S. Haut. 2021. *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.



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