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Approved Methods for Volumetric Water Benefit | Guidance for Proposals

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I. Policy Overview

Purpose of Policy

There are multiple methodologies for calculating volumetric water benefit depending on the water stewardship activities. This document seeks to clarify which types of interventions or activities at Water.org result in approved and verifiable VWBs to help guide Global Impact and Strategic Development when creating donor proposals.

II. Policy



Section 1: Approved Methods Here we review approved methods that have been used previously and can continue to be included in donor proposals.



Section 2: Untested Methods This portion reviews methods that align with the VWBA framework but have not yet been vetted. These require collaboration with Insights prior to including in donor proposals.



Section 3: Unapproved Activities Finally, we list activities that do not align with the VWBA framework and should not be included in donor proposals.

Please keep in mind that while some activities may result in approved and verifiable volumes, if they do not also involve repayable finance or benefit people living at the base of the economic pyramid, then leadership should be consulted prior to moving forward.

Section 1: Approved methods

WaterCredit and household lending – Volume Provided

To date, the majority of VWB that Water.org has reported to donors has resulted from households gaining access to water through financing. We track the impact of all interventions funded by the grant and can identify how many people receive access to water¹ and estimate the volumetric water benefit based on the constant of 20 liters per person per day (L/P/D) or 7,300 liters per person per year (L/P/Y).

$$\# \text{ people reached with water} \times 7,300 \text{ liters per person per year} = \text{annual volumetric water benefit}$$

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- This method is easy to calculate based on existing metrics from both uploaded WaterCredit reports and manual impact
- This method has a large evidence base used by multiple donors
- When partners report region information, VWB can be overlaid with donor's manufacturing locations to create compelling maps
- The cost per million liters is very competitive and may attract additional funding

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- In countries where most loans are for sanitation, the VWB may be low
- The assumption of 20 L/P/D may be overly conservative for households connected to piped water

We anticipate this approach will continue to be one of the main methods for delivering volumetric water benefit to donors.

Unrestricted gifts – Volume Provided

For UNR donors, we can calculate the people reached using our organizational cost per person. Because we do not have traceability as to how the funding is used, we calculate the impact differently and as a result, we must be careful to message the volumetric impact more broadly. The calculation first determines the number of people reached:

$$\frac{\text{Donation amount}}{\$5 \text{ cost per person}} = \text{people reached}$$

¹ Water access includes the aggregate categories of water, or water & sanitation. Water quality and sanitation improvements do not count towards volumetric water benefits.

We then calculate the people reached with water by looking at the percent of overall people that are reached with water over the same time period. Often this is around 40%. We can then multiply the people reached with access to water by 7,300 L/P/Y:

$$\# \text{ people reached with water} \times 7,300 \text{ liters per person per year} = \text{annual volumetric water benefit}$$

As an example, a \$500,000 unrestricted gift would result in 100,000 people being reached, of which 40,000 people are reached with water access. 40,000 people X 7,300 L/P/Y = 292 million liters of VWB.

To message this, we would share that the donation “contributed an estimated volumetric water benefit of 292 million liters per year.”



- This method allows us to calculate a conservative estimate for unrestricted donors
- LimnoTech has vetted this approach



- This method is not recommended for donors who need precise volumetric water benefit figures and traceability
- Due to the lack of traceability, there is a risk that we may overattribute VWB to the donor
- The volumes cannot be attributed to specific countries or regions

Section 2: Untested Methods

Currently, Water.org has only used the Volume Provided as described in the previous section. Outside of WaterCredit, Water.org is pursuing many different types of interventions and each intervention will be unique in such a way that will affect the volumetric amount that will occur and be possible to measure.

Because of this, Insights would likely not be able to estimate volumetric targets for proposals in cases where we have not tested the corresponding methodology or have limited information regarding the designs of the interventions. An alternative approach is to propose to a donor that volumetric targets be explored early in the grant as program teams enter design phases with each partner and the types of interventions and what data can be collected is known.

For volumetric estimation for untested methodologies to be included in any proposals, Insights would need to:

- Review the proposed intervention against the VWBA framework and identify the appropriate method. If there is no methodology, then estimations should not be included or committed in the proposal.
- If the VWBA framework isn't clear on how the indicator would be measured and verified, Insights needs a minimum of 10 business days to consult with LimnoTech **prior to including the intervention in a donor proposal.**
- Insights has no way to estimate the cost of verifying these methodologies currently because a wide variety of factors could occur based on the type of intervention, including requirements to collect new information from partners, data management and analysis changes, and verification and reporting costs from LimnoTech.
- When there are methodologies that can be used for the interventions, Insights needs to understand what types of data would be required to forecast or report on the volumes.
 - If Global Impact is unfamiliar with the design details of the water or sanitation improvements, the details required to estimate volumetric water benefit may not be available.

The following methodologies align with the current VWBA framework but have not yet been used by Water.org. These methods may be applicable to our work but need further exploration.

An update to VWBA is expected in 2024 which may also affect the methods described here.

The approaches we use to estimate volumes for WaterCredit household lending or UNR gifts **cannot** be applied to the following methodologies.

Household water access from water utilities – Volume Provided

We can also count volumetric water benefit for new customers that gained access as a direct result of our interventions with water utilities. To do so, we must track the number of utility customers prior to the intervention, the new customers reached because of our partnership, as well as the average metered water consumption per household.

In some scenarios, existing customers may benefit from increased water access or availability. This can also be counted as volume provided and would be calculated based on the volumes provided per customer prior to the improvement and the volumes provided per customer after the improvement. We should only apply the volume provide methodology to new connections or increases in volume. This method should not be applied when the utility invests in water treatment upgrades or improvements.

If household consumption figures are unavailable, the conservative estimate of 20 L/P/D can also be used. We must be careful to count only the volume of water that is treated and delivered to the new household customers.



- Water consumption from households connected to utilities tends to be high (~150 liters / person / day) and can lead to both better water quality for customers and higher volumes for VWB donors



- Careful monitoring is required to count new connections, the volumes per customer, and / or the change in service provision because of the intervention.
- We should anticipate additional costs for validating the volumetric impact

Household access from Community Water Purification Plants (CWPP) – Volume Provided

In the past few years, CWPPs have emerged as a hyper-contextualized solution for water access in some communities in India. These community led ventures bring together repayable financing, government support, and multiple parties to source, treat, and sell drinking water via small kiosks. While CWPPs have not yet been validated through LimnoTech, we believe the volume provided methodology will apply.

To calculate volumetric water benefit, we will use the record keeping of each CWPP. Because not all customers will use the CWPP regularly, we need to track those repeating customers who rely on the purification plant as their primary source of water. Instead of assuming 20 L/P/D, we think it is best to calculate based on the volume of water treated and delivered to households, while separately reporting the number of repeat customers.

$$\text{Volume treated and sold} = \text{Volumetric Water Benefit}$$



- To date, CWPPs have been able to report on the volumes of water they treat and sell



- The VWB is expected to be less because our understanding is that the water is used mainly for drinking and cooking purposes and may not reflect the total volume of water each household uses for bathing, cleaning, washing, etc.
- The volumes treated and sold fluctuate from month to month based on factors such as water source availability, facility downtime for repairs, etc. which may make long-

term projections more difficult to estimate.

- The cost per person and cost per million liters for CWPP is projected to be much higher than other intervention types
- We should anticipate additional costs for validating the volumetric impact

Reducing Physical Water Losses – Reduced Withdrawal

As we expand our work with utility service providers, we expect to track volumes of water saved because of reducing non-revenue water (NRW), more specifically by reducing physical water losses. By partnering with firms that identify and address leaks, inefficiencies, or illegal connections, we expect capital investments will lead to reductions in non-revenue water. These volumes can be tracked using the VWB indicator of Reduced Withdrawal. For example, if physical water losses are reduced from 25% to 20%, the 5% reduction would be multiplied by the total volume treated to determine the VWB. This is also communicated as:

$$\text{Withdrawal}(\text{baseline}) - \text{Withdrawal}(\text{with} - \text{project}) = \text{Volumetric Water Benefit}$$

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- This method naturally fits within our existing activities with some water utilities
- This method is easy to calculate

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- Activities identifying leaks but not repairing them would not count towards VWB, the leaks must be repaired and a reduction in NRW quantifiable to count VWB
- We should anticipate additional costs for validating the volumetric impact

Rainwater harvesting – Volume Provided

Rainwater harvesting improvements make up approximately 0.02% of all Water.org improvements. As of 2023, only 30,220 loans out of more than 13.5 million were for rainwater harvesting systems. However, some interventions are specifically focused on this improvement type. In the forthcoming 2.0 version of the VWBA framework, there is a new methodology for counting volumetric water benefit from rainwater harvesting improvements.

The draft method for calculating rainwater harvesting explains, “The volume of rainwater harvested for direct use may be calculated based on the capacity of the rainwater harvesting system and the average number of times it fills to capacity per year. Alternatively, it may be calculated based on the minimum of the available supply and storage potential” (WRI 17, 2023)

$$\text{Tank size} \times \text{Number of times tank fills to capacity} = \text{Volumetric Water Benefit}$$

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- This methodology allows for more accurate volumes where rainwater harvesting is a priority for the partner, intervention, or donor

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- Additional metrics will need to be tracked to accurately employ this approach (average tank size, average number of times it fills to capacity, variations in rainfall across geographies)
- Because of the extra reporting requirements, this approach will likely not be used except when explicitly required. Before promising this approach to a donor, please ensure that the necessary indicators can be collected and verified through our partners.
- We should anticipate additional costs for validating the volumetric impact

Improving Water Quality through Wastewater Treatment – Volume Treated

In the future, we hope to work with networked sanitation service providers or wastewater treatment plants. Volumes can be counted in this context by increasing the volume of treated water to the minimum standard of water quality for relevant discharge or reuse targets.

$$\text{Volume Treated} = \text{Volumetric Water Benefit}$$



- Globally, wastewater treatment is an area of great need and opportunity for growth
- New wastewater treatment plants could generate more energy than needed, providing excess energy to the grid while reducing greenhouse gases²



- Wastewater must be treated to a minimum standard and undertreated volumes cannot be counted towards VWBs
- Water quality testing is necessary to ensure that the treated wastewater meets quality requirements
- We should anticipate additional costs for validating the volumetric impact

Section 3: Activities that do not result in verifiable volumetric water benefit – Do Not Include in Proposals

Some proposed interventions include examples that would not be counted within the VWBA framework or may not advance Water.org priorities. These should not be included in donor proposals with volumetric targets.

- **Interventions focused on improving water metering**, such as installing, repairing, replacing household water meters do not result in improved access to water and so do not count towards VWB. However, if meters are part of a larger intervention to reduce non-revenue water, that would be acceptable if we can demonstrate the quantifiable reduction in NRW. A water meter installed at a customer's house does not result in water access or volumes provided.
- **Interventions focused only on leak detection** would not qualify for VWB. However, if leaky pipes are repaired or replaced as part of the intervention and the reduction in non-revenue water is quantifiable, then the intervention would result in verifiable VWB.
- **Infrastructure investments that are focused on operational improvements** result in improved services but may not result in greater efficiency with water use and corresponding volumes. For infrastructure interventions to be counted towards VWB, they must result in reduced withdrawal or volume provided.
- **Capital investments** may enable future volumetric water benefit, but the volumes may not be quantified until WSS improvements are made and people directly benefit from the investment.
- **Work with enterprises** may count. However, it's important that activities address household level access and count towards Water.org's impact guidelines. There must be a traceable and quantifiable link between Water.org's work with the SME and the water benefit.
- **Groundwater recharge or nature-based solutions** may lead to verifiable VWBs within the VWBA framework. However, such activities would also need to include benefits to domestic customers (people living at the base of the economic pyramid) and involve repayable financing before it could be included in an intervention.

² <https://pacinst.org/publication/financing-water-in-a-changing-climate/>

- **Interventions focused on improving drinking water quality** for existing customers. This is because the VWBA framework assumes that “drinking water at the point of collection should meet international drinking quality standards, come from an improved water source, and comply with WHO / UNICEF WASH guidance” (VWBA 33, 2019)³. Water.org cannot verify that drinking water meets international drinking quality standards.
- **Water filters** alone do not result in water access and are not counted towards volumetric water targets. However, if a water treatment facility sources and treats water that is used as the primary drinking source, then volumetric water benefits could be counted via volume provided for new customers as a result of Water.org’s involvement.

Additional considerations

If an intervention goes forward with a new or untested volumetric water methodology, then we should budget additional funding for validation from LimnoTech. Those conversations with LimnoTech should begin with intervention design so that we are confident that VWB will be verifiable. It should be clearly communicated to donors that the VWB approach is untested and may not result in verifiable VWBs.

Please also keep in mind that interventions should have a **repayable finance** component as part of Water.org’s overall strategic direction and be targeted towards reaching people living at the **base of the economic pyramid**. While some activities may result in quantifiable volumes, they may not meet our other organizational priorities. Please consult with GI leadership and Insights whenever you encounter a proposed intervention that is not aligned with our overall strategic direction.

³ <https://www.wri.org/research/volumetric-water-benefit-accounting-vwba-method-implementing-and-valuing-water-stewardship>

III. Policy Oversight

Governance

The **Insights Department** is the owner of this Policy and is responsible for reviewing, implementing, amending, and making recommendations for updates or changes to this policy in alignment with the business needs of Water.org.

IV. Additional Resources

Contact for Support

Please contact your **Regional Insights team** or **David Strivings**, Senior Impact Intelligence Analyst, at dstrivings@water.org if you have questions or need clarification regarding this policy.

Related Documents

Please refer to the following resources for greater detail on volumetric water benefit accounting:

- [Volumetric Water Benefit Accounting \(VWBA\): A Method for Implementing and Valuing Water Stewardship Activities](#)
- Water.org's [Volumetric Water Benefit Accounting Foundation Setting](#)

V. Appendix

Appendix A | Recommended VWB Indicator for Common Water Stewardship Activities

Category	Activity	VWB Indicator	Calculation Method	Can Water.org pitch volumetric benefits in proposals?
Land conservation and restoration	Land conservation, land cover restoration	Avoided runoff, Reduced runoff	Curve number method	No
Water supply reliability	Agriculture water demand reduction measures	Reduced withdrawal or reduced consumption	Withdrawal method or consumption method	No
	Operational efficiency measures	Reduced withdrawal	Withdrawal method	No
	Leak Repair			Potential, requires exploration
	Consumer use efficiency measures			Potential, requires exploration
	Water reuse			Potential, requires exploration
	New water supply for crop irrigation	Volume Provided	Volume provided method	No
	Rainwater harvesting	Increased recharge	Capture and infiltration method	Potential, requires exploration

Water access	Access to drinking water supply	Volume Provided	Volume provided method	Yes
Water quality	Agricultural best management practices (BMPs) related to conservation tillage, laser leveling, and cover crops	Reduced runoff	Curve number method	No
	Stormwater management	Volume captured	Runoff reduction method	Potential, requires exploration
	Constructed wetland treatment systems	Volume treated	Volume treated method	No
	Wastewater treatment plants			Potential, requires exploration
Aquatic Habitat Restoration	All Activities	Varies based on activities	Varies based on objectives	No

*if an anticipated activity is not on the list please consult Insights. It would likely require a project with Limnotech or another credible 3rd party to develop, get peer reviewed, and pressure test a new methodology.