

LIXIL's Impact Methodology

OVERVIEW:

Global sanitation and hygiene is one of the strategic pillars of LIXIL's Impact Strategy, and an important driver towards realizing our corporate purpose to make better homes a reality for everyone, everywhere.

LIXIL set the target of [improving sanitation and hygiene for 100 million people around the world by 2025](#) through the introduction of innovative and affordable toilet and hand hygiene solutions.

Until now, this was primarily achieved by delivering toilet solutions to households, and a simple calculation was applied to estimate the number of people reached per toilet per household. However, as our portfolio of products and scope of activities has expanded, and the approach to measurement has evolved in the water, sanitation and hygiene (WASH) sector, we are now updating our methodology to more accurately reflect the impact of our activities.

This document aims to clarify in plain language LIXIL's intent and impact methodology, as we continue to report progress towards our targets.



CONTEXT:

LIXIL's target of improving sanitation and hygiene for 100 million people around the world by 2025 is an intentionally ambitious goal to challenge us to develop innovative business models at scale. By doing so, we can maximize our impact toward the global Sustainable Development Goal (SDG) 6.

Measuring impact is necessary to ensure transparency and to track progress toward our 100 million goal. LIXIL's methodology is designed to be simple and to provide clarity on output, while minimizing complex first-party verification that would divert important resources from market-building efforts.

LIXIL's SATO brand, which provides innovative and affordable toilet and handwashing solutions globally, is the primary driver of the impact. Due to the business model of SATO, LIXIL has limited visibility into the final purchase and therefore end-user impact verification is limited. As a result, we were using a simple multiplier, based on an assumption of the number of people using each unit sold.

At the time, SATO's portfolio was predominantly one product, the original SATO toilet pan, and it was used almost exclusively by households with only a few known and documented exceptions (e.g., refugee camp installations.) The average global household size at the time was estimated as 5 people and therefore impact was determined by:

Previous Impact Calculation = the number of units shipped x 5 people

Since 2020, the SATO brand has expanded to a broader portfolio of toilet and hand hygiene solutions applicable in a range of use situations. The portfolio now includes multiple potential front-end toilets (SATO Pans, SATO Stool); connection systems (e.g., I-trap and V-trap for off-set construction); and accessories (e.g., adapters, foot rests, etc.) With the broader portfolio, we identified two key issues requiring a more complex methodology for measurement:

1. **The risk of double counting:** With the portfolio now including both toilets and connection systems, simply using the number of units of product shipped would not eliminate cases where two products were used together for a single installation (e.g. a SATO pan together with an I-Trap connection). In such cases, counting the two units during the impact calculation would overstate the impact.
2. **Undercounting due to varied use cases:** Due to the expanded portfolio and scope of SATO activities, increasingly products have been used in non-household settings, such as schools or health care facilities. In such cases, the average number of people using each product, and therefore the impact, is higher than in household use.

Therefore, benefiting from improvements in internally available shipment data, we undertook an internal review, engaging our global partners on their methodology as well as collecting and evaluating direct installation data from partners wherever possible. The resulting revised impact methodology aims to address the risks of double counting and under counting and to account for the latest reported figures from partners in order to determine impact progress in a robust, consistent, and transparent way.

Importantly, we will continue to report our impact in terms of people or consumers reached, and not beneficiaries. LIXIL firmly believes in a market-based approach to addressing the water, sanitation, and hygiene challenges and aims to create a sustainable business to ensure that customers will always have access to LIXIL products. This is particularly true for SATO through its new markets where the

consumer may be experiencing the dignity of choice for the first time. We collaborate with partners for guidance on best practices for working in new contexts, cultures, and geographies.

UPDATED IMPACT METHODOLOGY:

LIXIL will measure the impact of our global sanitation and hygiene activities and progress towards our 100 million people target using a volume-based approach, identifying the volume of relevant (i.e., contributing to impact) SATO toilet and handwashing units shipped and using a use-case appropriate multiplier to determine reach.

LIXIL now follows a 4-step process:

1. **Calculate the number of units shipped to the final destination, and adjust the volume to use in the impact calculation to eliminate the risk of over or double counting.** Multiple components may go into a single toilet installation. As we convert from our volume shipped to impact, we want to adjust the volume by a) removing component parts (e.g., collection boxes) and b) adjusting for known sets shipped together (e.g., Pans sold with V-Traps.) Our total volume of shipped units reported each year is therefore greater than the number of units that are used in the calculation of impact.
2. **Allocate the units at the final destination by use case to accurately identify the impact multiplier consistent with sector partners:**
 - **Household use:** With the final destination of products increasingly being tracked and known internally, use the average household size for the final destination country as reported by [UN Population](#).¹ If data is not available, or if the final destination is not known, an average household size of 6 people (per toilet or handwashing station) is used, reflecting the average household size across SATO's target markets.
 - **School:** Average students per toilet seat varies significantly by country (observed 18 - 186, [JMP 2020](#)²) as do national-level target guidelines (20 - 50+ students per toilet.) School toilets are also used by community members and school staff, and will be used by different groups of students as students matriculate over an installation lifetime. To address this wide variation, a multiplier of 100 is used to reflect lifetime reach of the toilet or handwashing station. As schools are often reached with implementation partners, the actual data reported from partners is prioritized (see Step 3.)
 - **Healthcare facility:** Average users reached at healthcare facilities varies significantly by country, type of facility, and geographic location with recommendations for effective infection prevention and control driving number of toilets recommended by facility and/or by beds ([JMP August 2022](#)³). As noted in Step 3, priority is given to actual reported data where available; if actual data is not available, a multiplier of 250 people per toilet or handwashing station is used to reflect staff, outpatient and inpatient capacity, and community reach.

¹ UN Population: Household Size and Composition (<https://www.un.org/development/desa/pd/data/household-size-and-composition>)

² JMP 2020: Progress on Drinking Water, Sanitation, and Hygiene in Schools, page 32 (<https://washdata.org/sites/default/files/2020-09/JMP-2020-WASH-schools.pdf>)

³ JMP: Progress on WASH in health care facilities 2000–2021: Special focus on WASH and infection prevention and control (IPC) (<https://washdata.org/reports/jmp-2022-wash-hcf>)

- **Shared toilets:** For example, those used by multiple households in the community. Based on the approach used by UNICEF, an estimate of 20 people per toilet is used ([UNICEF](#)⁴), reflecting approximately four households.
 - **Community and/or public toilets:** For example, toilets used by an entire community and likely in a public use space. Number of users will vary significantly based on the specific setting and daily foot traffic. Where actual data is not available, 100 people on average per toilet is used (higher than shared household toilets and is comparable to community-level use as school.) *Note: This is not currently a known common use case for SATO.*
 - **Refugee or internally displaced persons (IDP) camp/settlement:** The target for toilet access in emergency settings is less than 50 users per toilet ([UNHCR](#)⁵) while observed ratios can be significantly higher⁶. When implementer-reported data is not available to reflect the specific project setting, an estimate of 150 people per installation is used to reflect a) SATO's deployment early in an emergency with trench toilets, and ultimately shared toilets and household toilets; and b) the durability of the SATO installation extending its lifetime reach (as different users enter the refugee or IDP setting.)
 - **Unknown:** If the final use case is not known, household usage figures will be applied (most conservative impact multiplier.)
3. **Adjust for confirmed actual reach as reported by implementation partners:** Critically, where confirmed data is provided by partners on exact reach and impact (e.g., as part of implementing partners' own data collection or verification), this data would take precedence and be used in lieu of the standardized multiplier figures provided above. This is most critical in the highest potential impact areas such as in institutions (schools, healthcare facilities) and in humanitarian contexts.
 4. **Account for potential for loss:** Adjust the estimated impact down by 5% to yield a conservative estimate of final impact. This reduction may capture variability in supply chains, potential damage to products, or other reasons the impact would not be achieved that have not already been captured in reported numbers, as well as the risk where the solutions are installed in overlapping settings.

IMPLEMENTATION AND ADJUSTMENTS TO REPORTED IMPACT PROGRESS

LIXIL annually reports the progress toward our impact target. To account for the improved data and adjustments, the following steps were taken:

For data prior to Fiscal Year Ending 2020 (FYE2020), representing FYE2013 - FYE2019, impact was previously predominantly reported by multiplying the number of units shipped by 5 people as the majority of use cases were in households. To improve the accuracy of the impact calculation during this period, the volume was adjusted to account for known non-household usage as reported by

⁴ UNICEF: Core Commitments for Children (<https://www.corecommitments.unicef.org/ccc-2-3-7>)

⁵ UNHCR Emergency Handbook: WASH in Emergencies (<https://emergency.unhcr.org/emergency-assistance/water-sanitation-and-hygiene/wash-emergencies>)

⁶ Example from Bangladesh: Exploring waste and sanitation-borne hazards in Rohingya refugee camps in Bangladesh. Chowdhury et al; Journal of Water, Sanitation and Hygiene for Development 1 August 2022 (<https://iwaponline.com/washdev/article/12/8/587/89424/Exploring-waste-and-sanitation-borne-hazards-in>)

partners, and the impact multiplier number was updated to reflect the average household size or use case reach at the final destination. The resulting difference is a cumulative impact of approximately 21 million people compared to a reported 12 million people through 2019.

	FYE2013 - 2016	FYE2017	FYE2018	FYE2019
Total Shipped Volume	1,141,166	279,017	446,006	811,633
Cumulative Volume	1,141,166	1,420,183	1,866,189	2,677,822
Cumulative Impact Reported	5,705,830	7,100,915	9,330,945	12,000,000
Adjusted Volume: Removing double counting and accessories [units]				
Double-counting of I-Traps and V-Traps (Remove where sold with a SATO Pan or Stool)			400	40,080
Adjusted Volume	1,141,166	279,017	445,606	771,553
Adjusted Volume: known use cases [units]				
Refugee Camp (Donations)	3,600		29,628	8,315
Healthcare Facilities (Donations)				4,298
Schools (Donations)	1,000			13,072
Total Volume: Households	1,136,566	279,017	415,978	745,868
Household (Donations)	643,755		19,534	131,415
Households (Sales)	492,811	279,017	396,444	614,453
Adjusted Impact [people reached]				
Refugee Camp (Donations)	540,000		4,444,200	1,247,250
Healthcare Facilities (Donations)				1,074,500
Schools (Donations)	100,000			1,307,200
Total: Households	5,973,861	1,413,717	2,144,724	3,815,421
Household (Donations)	3,200,983		96,440	694,439
Households (Sales)	2,772,878	1,413,717	2,048,284	3,120,982
Adjusted Total Impact	6,613,861	1,413,717	6,588,924	7,444,371
Cumulative Adjusted Impact	6,613,861	8,027,578	14,616,502	22,060,873
5% loss	-330,693	-70,686	-329,446	-372,219
Loss-adjusted Total Impact	6,283,168	1,343,031	6,259,478	7,072,152
Cumulative Loss-adjusted Impact	6,283,168	7,626,199	13,885,676	20,957,829

For data FYE2020 - FYE2024, the expanded SATO portfolio includes comprehensive solutions for multiple toilet configurations (direct pit latrine and off-set installations) as well as now a handwashing station. Due to the expanded portfolio, the risk of double counting multiple components increased. However, improvements in internal data validation and partner reporting allowed for understanding of product-specific volumes as well as visibility into products shipping together and their final use.

As a result, although downward reductions were made to the impact figures due to potential double-counting, overall impact increased due to more accurate reporting of use cases. The 5% loss adjustment was also applied in line with the improved methodology. A summary of the adjustments are below:

	FYE2020	FYE2021	FYE2022	FYE2023	FYE2024
Total Shipped Volume	1,167,583	1,253,025	1,374,839	1,014,973	1,122,571
Cumulative Volume	3,845,405	5,098,430	6,473,269	7,488,242	8,610,813
Cumulative Reported Impact	18,500,000	25,000,000	35,000,000	45,000,000	—
Adjusted Volume: Removing double counting and accessories [units]					
Double-counting of I-Traps and V-Traps (<i>Remove where sold with a SATO Pan or Stool</i>)	-51,024	-28,132	0	-33,985	-31,816
Remaining Accessories (<i>foot rests, adapters, collection boxes</i>)	-138,725	-109,723	-45,313	-72,782	-36,187
Adjusted Volume (<i>see note</i>)	977,834	1,115,170	1,329,526	908,207	1,054,568
Adjusted Volume: known use cases [units]					
Refugee Camp (<i>Donations</i>)		2,421	2,300		
Healthcare Facilities (<i>Donations</i>)		522			
Schools (<i>Donations</i>)	64,000	5,772	90,000		22,260
Total Volume: Households	861,374	1,268,310	1,037,678	904,942	1,031,658
<i>Household (Donations)</i>	131,025	425,583	238,781	202,798	297,187
<i>Households (Sales)</i>	730,349	842,727	798,897	702,144	734,471
Adjusted Impact [people reached]					
Refugee Camp (<i>Donations</i>)		121,050	345,000		
Healthcare Facilities (<i>Donations</i>)		1,305,000			
Schools (<i>Donations</i>)	6,400,000	554,650	9,000,000		2,226,000
Total: Households	4,690,912	8,486,796	5,716,200	4,917,140	5,677,953
<i>Household (Donations)</i>	690,394	3,942,064	1,409,162	1,162,100	1,706,202
<i>Households (Sales)</i>	4,000,518	4,544,732	4,307,038	3,755,040	3,971,751
Adjusted Total Impact	11,090,912	10,467,496	15,061,200	4,917,140	7,903,953
Cumulative Adjusted Impact	33,151,785	43,619,281	58,680,481	63,597,622	71,501,574
5% loss	-554,546	-523,375	-753,060	-245,857	-395,198
Loss-adjusted Total Impact	10,536,367	9,944,121	14,308,140	4,671,283	7,508,755
Cumulative Loss-adjusted Impact	31,494,196	41,438,317	55,746,457	60,417,740	67,926,496

Note: Due to the changes in data tracking for FYE2020 - FYE2024 for the volume shipped and use cases, total annual volumes may be different between the adjusted volume and the volume for allocation for use cases, notably for FYE2020 - FYE2022. Data refinement continues.

Incorporating the updated impact methodology and based on a review of partner-reported and internal documentation, LIXIL has reached approximately **68 million** people through the end of FYE2024 (through 31 March 2024).

ONGOING REPORTING AND DATA REVIEW:

LIXIL's goal is to reach 100 million people by the end of calendar year 2025. We will report our progress toward this goal through FYE2026 (through 31 March 2026) in order to reflect the impact of our investment in this time period. Volume data, and therefore ultimately our estimate of reach, will be reported within 60 days of each fiscal year half close. Only updates to actuals reported by partners will be used to update information for the immediately previous fiscal year. Further validation of the FYE2020-2024 volume and use case data remains underway though only minor revisions are expected.

A NOTE ON INDIRECT IMPACT:

LIXIL is grateful for the opportunity to engage broadly in the water, sanitation, and hygiene sector to contribute to the acceleration of progress of achieving the Sustainable Development Goal 6: Ensuring safe water, sanitation, and hygiene for all. Beyond our SATO brand activities, LIXIL engages in project work to improve local area sanitation and hygiene (e.g., supporting [Lowndes County Alabama](#)) and to promote SDG awareness education in schools in Japan.

In addition, through partnerships with [UNICEF](#), [USAID](#), [Sanitation and Water for All](#), [Toilet Board Coalition](#), [IAPMO/IWISH](#), among many others, LIXIL is leveraging our voice to advocate for policies, local funding, and standards and regulations for an overall stronger enabling environment and a robust sanitation economy. For example, Make a Splash!, LIXIL's shared-value partnership UNICEF, began tracking indirect impact based on UNICEF's guidelines and approach in 2023. For 2023, [Make a Splash! reported⁷](#) a total of 4.6 million in indirect impact: 2.2 million gaining access to sanitation and 2.4 million to hand hygiene through building the capacity of community health volunteers, stimulating microfinance for low-income individuals, among other systems strengthening activities.

LIXIL aims to contribute to overall gains in access to safe sanitation and hygiene through these additional paths, even though it is not tracked or reported directly toward our 100 million goal.

CONTACT POINT:

For questions or clarifications on LIXIL's Impact Methodology and progress, please contact pr_global@lixil.com.

⁷ UNICEF and LIXIL Make a Splash! Progress Overview:
<https://www.unicef.org/reports/make-splash-partnership-progress-report-overview-20222023>