

ADB

SHARE THE LOAD



*Launching the Laundry Movement
with the Water Community*



DID YOU KNOW?

About 4 billion people worldwide wash their clothes by hand, which is nearly 50% of the planet's population.¹

¹ Stellar Market Research. 2024. *Laundry Detergent Market: Global Market Outlook and Forecast (2025-2032) Trends, Statistics, Dynamics, Segmentation by Product, Application, Distribution Channel, and Region*.

WHY LAUNDRY? AN UNTAPPED OPPORTUNITY FOR CHANGE

Laundry is the simple yet necessary act of washing clothes, a chore so mundane that it is often overlooked. However, as unassuming as it can be, laundry has far-reaching impacts.

For many people around the world, primarily women and girls, laundry is still done by hand. Despite progress with the kinds of washing machines available and a growing laundry care industry (valued globally at \$177.85 billion in 2024),² there has been hardly any widespread change in the way clothes are cleaned for years.

In countless households, especially in rural and urban poor communities in Asia and the Pacific, women can spend up to 20% of their active hours solely on manual laundry—and this is even higher for areas where access to water is limited. This forgotten burden usually requires carrying hefty bundles of clothes to distant water sources (or conversely, fetching heavy containers of water in slippery paths), in addition to the constant scrubbing, rinsing, lifting, bending, drying, and folding. This arduous process can lead to chronic pain, mental pressure, and increased exposure to health and safety risks. Moreover, it comes at the expense of time potentially spent for more valuable pursuits and better well-being.

Machine washing, on the other hand, also has its own challenges relating to accessibility, affordability, water consumption, and energy use and resulting carbon emissions.

The time is ripe for a global conversation. The world has to clean up its act now, from addressing the gaps in research and policies to introducing more initiatives that prioritize innovation and multisector solutions.

Could laundry be the next breakthrough for people, planet, and progress in Asia and the Pacific?

² This market size only covers laundry detergents (powder, liquid, fabric softeners, and others).

THE CRISIS OF CLEANING OUR CLOTHES



WATER

Laundry and water are deeply intertwined, from water availability and quality to sanitation and hygiene. Manual washing needs about 20 liters per wash,³ which can be reduced with proper tools and detergents, while machine washing requires about 75 liters per load.⁴ A 2010 journal article estimated that about 20 trillion liters of water are used globally for domestic washing machines.⁵

HEALTH

Soiled clothes, contaminated water, and shared laundry spaces can increase the spread of infectious diseases during the washing process. Damp clothing can lead to the growth of microbes and infrequent or poor-quality washing can also lead to hygiene issues and increase the risk of infections. In clinics and hospitals, cleanliness of textiles (e.g., bed linens, drapes, patient gowns) are especially critical for the safety of patients and health care workers.

WELL-BEING

Due to societal norms, laundry is often seen as “women’s work,” with women spending up to 15 hours per week on this task⁶—time that could otherwise be devoted to childcare, income-generating activities, or rest. The physical demands of carrying heavy, wet laundry and washing in uncomfortable positions can be strenuous. Additionally, women from low-income households may face health risks from exposure to harsh chemicals in detergents and bleach.

ENVIRONMENT

Detergents with synthetic surfactants and phosphates contribute to the eutrophication of water bodies. If unmitigated, this can lead to “dead zones” where aquatic ecosystems cannot survive. Another growing threat is the amount of microplastics in the oceans. Plastic microfibers are released when clothes with synthetic fabrics are washed. These microplastics have permeated the food chain, affecting marine life and humans.

ENERGY

There is more energy used in machine washing, unless water is heated for manual washing. Washing machines typically consume 0.5–2.5 kilowatt-hours (kWh) per cycle, though high-efficiency models using cold water and compatible detergents⁷ can go as low as 0.3 kWh. Drying consumes even more—around 3 kWh per load.⁸ These energy demands translate directly into carbon emissions: a 2-kWh wash cycle can emit approximately 1 kg of carbon dioxide, while a 3-kWh drying cycle may produce up to 1.5 kg.

HOUSEHOLD ECONOMY

The quantity and type of clothing in a household significantly influence laundry practices. Frequent washing, high water temperatures, and harsh detergents accelerate wear and tear. For low-income homes, replacing worn clothing can be costly—especially when limited wardrobes require more frequent laundering. Additionally, delicate or special garments often demand extra care, time, and effort, shaping how laundry is managed.

EMPLOYMENT

In many urban areas, women from low-income households earn a living as laundry workers, offering laundry and ironing services. Despite the physical demands of the work, they often receive minimal compensation and face precarious working conditions, including unreliable water supply, limited access to detergents, and a lack of job security.

INNOVATIONS

Innovations in laundry soaps and detergents have contributed to better cleaning, although mostly for machine washing. These include better water and energy efficiency, enhanced hygiene through disinfection features, and reduced physical labor through automation and smart technologies. Technological progress has also improved textiles—such as the development of stain-resistant fabrics—and water supply systems.

³ Team Dr. Monk. 2020. Solar Soaker User Research.

⁴ Whirlpool. [How much water does a washing machine use?](#)

⁵ K. Laitala et al. 2020. [Laundry Care Regimes: Do the Practices of Keeping Clothes Clean Have Different Environmental Impacts Based on the Fiber Content?](#) *Sustainability*. 12 (18).

⁶ This information was collected by MetaMeta, a Dutch social enterprise, during field research and validated by data from The Washing Machine Project and Solar Soaker.

⁷ N. Andersen. [The Energy-Hungry Washing Machine: How Many Kilowatts Does It Really Use?](#) *Home Gear Geek*.

⁸ [Electricity usage of a clothes dryer](#). *Energy Use Calculator*.

LAUNDRY AND WATER

Whether through handwashing in a tub or using a machine, laundry begins with water. To fully understand and transform this everyday task, it must be examined through a water-focused lens—recognizing its central role in hygiene, labor, and sustainability.

Water Supply and Availability

Water availability mainly determines a household's ability to do laundry. In many rural and underserved areas across Asia and the Pacific, water scarcity and intermittent supply remain persistent challenges. Communities often rely on hand pumps, shallow wells, or groundwater, but when these sources are unavailable or insufficient, they must turn to distant streams, wells, or even contaminated water sources. Ensuring adequate water supply should be prioritized. Its availability also requires looking at water-use efficiency, reuse practices, and adoption of water-saving technologies.

Water Quality

Water quality is just as critical as water supply in ensuring effective and safe laundry practices. For instance, groundwater sources in certain areas of Nepal—particularly in the Terai region—have been found to have arsenic and iron, forcing families to use polluted surface water for washing. This not only compromises cleanliness but also poses significant health risks. In other countries in Asia and the Pacific, many households contend with poor drainage systems. This causes laundry wastewater to mix with sources of drinking water, undermining public health. Water quality is also affected by temperature. In the region, it is common to use cold water which, while energy-efficient and gentler on fabrics, limits disinfection. Detergents and soaps formulated for cold-water use are needed.

Water Resources Management

While water can affect the wash and washer, laundry can also conversely impact water through the release of microplastics and harmful chemicals. There is no difference between the discharge of microplastics from handwashing and machine washing. Microfibers from fabrics, such as polyester and nylon, become part of wastewater that end up in water bodies, including groundwater—infiltrating both drinking water supply and food sources, and entering human bodies. Even more alarming, one dryer can discharge up to 120 million microfibers yearly, which is 1.4 to 40 times of that from washing machines.⁹

⁹ City University of Hong Kong. 2022. [Research finds clothes dryers are an overlooked source of airborne microfibers](#). *Phys.org*. 8 April.



WASH IS NOT WASHING

The water, sanitation, and hygiene field, or WASH, is an integral part of the water sector. Programs and discourse focus on access to clean water, safe sanitation, and personal hygiene, especially improving handwashing services. While laudable, hygiene through the role of laundry is usually left out. The implications of washing clothes have been disregarded in WASH.

Meanwhile, clean clothes and linens are essential for preventing the spread of diseases, ensuring dignity, and upholding basic standards of hygiene and health. This is even more pronounced in hospitals and hotels, where there are strict protocols. Improper handling of soiled linens, such as shaking contaminated fabrics, can also aerosolize pathogens, increasing the risk of transmission. This WASH gap has to be addressed and can serve as an entry point to introduce more interventions through policy and programming.

LAUNDRY STORIES: THE HARSH REALITY OF WASHING CLOTHES

Every day is laundry day for Sangita

Sangita is responsible for washing the clothes of her entire family. These are cleaned once a week. A mother of a 6-month-old baby, she also has to wash her baby's clothes every single day. The only source of water, though, is from a public waterspout that she has to journey for at least an hour. She takes two jerry cans of 20 liters each and carries them on her head using a head strap called *namlo* in Nepali. Sometimes, she uses a *doko* or a traditional conical basket to carry the can, which helps to distribute the weight and ease the load on her shoulders. Washing is hard work for Sangita. She may take time out each day to clean her baby's clothes but for Saturdays, it's all about doing the remaining laundry and nothing else.¹⁰

Maili's senior struggles

Maili is 65 years old and lives with her husband. Two of their children are married and live far away, while the other lives alone in a separate house. As an empty nester, she takes care of all the household chores. Doing the laundry has been a challenge, however, since the water supply is not reliable and she can no longer wash clothes while seated. Maili tries to save tap water for laundry, and she does the washing standing up. She rests in between washing, but it is still difficult, she said.

Ranjita and managing menstrual customs

For 33-year-old Ranjita, washing clothes is a daily task given that she has to do the laundry for all seven members of her family. On average, she spends 10 hours per day for washing alone, excluding other parts of the process, such as collecting the clothes, hanging to dry, and folding. This process is further complicated when menstruation practices are involved. Cleaning menstrual clothes is not allowed when people are around. There also must be a separate soap or tools used for washing. Laundry is already challenging on its own, so when customs are mixed in, the burden is multiplied.



¹⁰ All the stories in this page are taken from one source produced by MetaMeta. This was then shared with the Asian Development Bank for a study on laundry practices. S. Yakami. 2022. 10–15 hours of hard work every week: Laundry stories from Nepal. *The Water Channel*. 15 April.

LAUNCHING THE LAUNDRY MOVEMENT

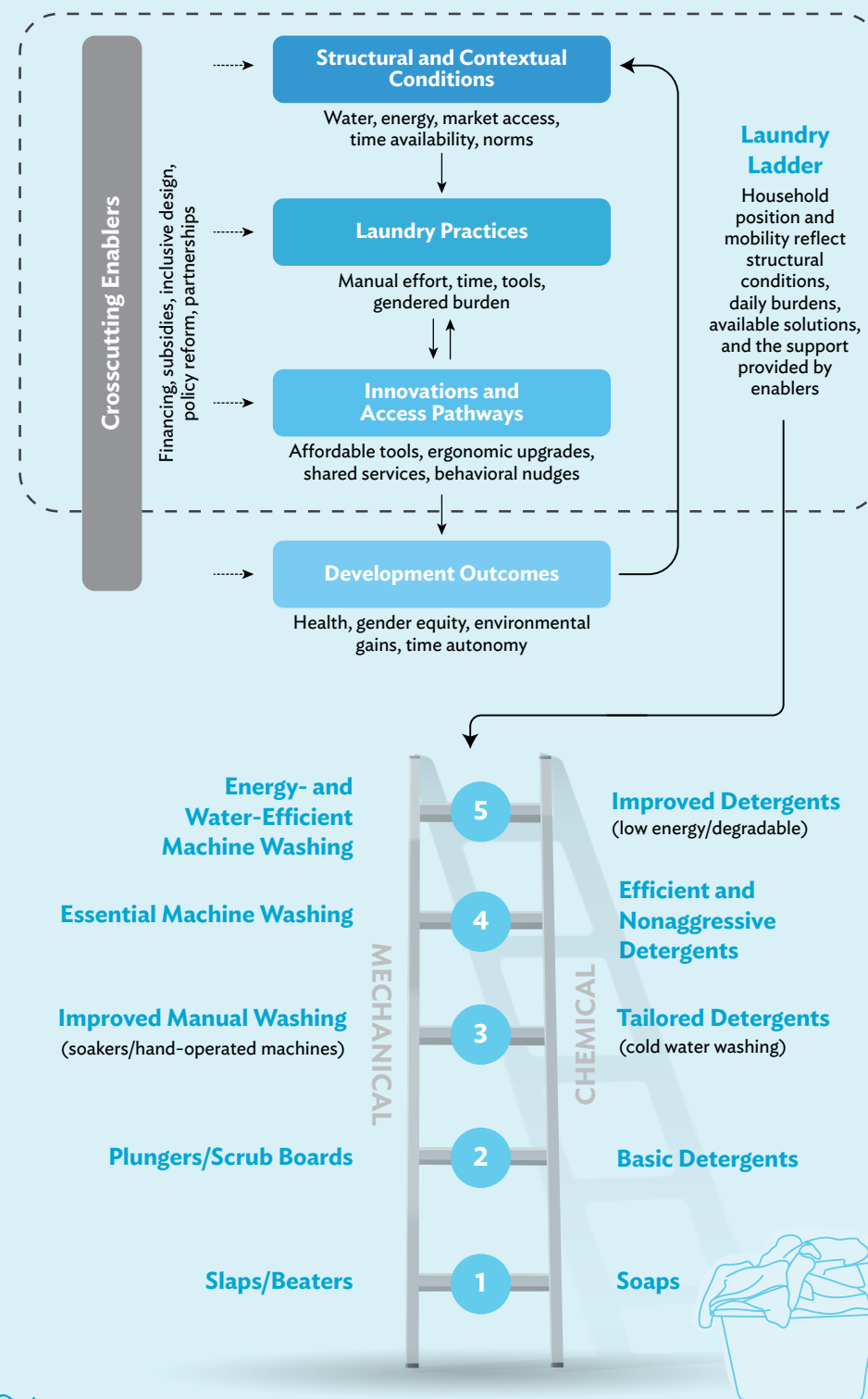
The notion that laundry is a menial task belies its systemic challenges. To address these, the Asian Development Bank (ADB) through its Water and Urban Development Sector Office, Sectors Department 2 has introduced the **Laundry Transformation initiative**. This seeks to uplift laundry from its forgotten status in the development landscape and transform laundry practices by bringing together siloed disciplines to tackle inefficiencies, shift cultural norms, reduce environmental burdens, and empower communities.

The initiative is open for collaboration to further generate evidence, deepen understanding of laundry (especially manual laundry, the reality for billions of people), inform policy, guide innovation, and ensure laundry's place in WASH and the overall sustainable development agenda.

As a start, ADB funded a study led by the Netherlands-based social enterprise MetaMeta to analyze how laundry is done in different parts of the region and increase knowledge of its impacts. The study and the initiative highlight the need for a systems-thinking approach that comprehensively looks at the structural conditions, laundry practices, and existing tools and innovations to identify scalable, context-appropriate pathways for improving laundry, particularly in resource-constrained settings. This approach is the **Laundry Systems Framework**, and it articulates how systemic improvements can lead to long-term development outcomes.

Together with the framework is the **Laundry Ladder**, a proposed concept which seeks to illustrate household mobility along a scale of laundry practices and conditions, both mechanical (from basic tools to washing machines) and chemical (detergents). In Asia and the Pacific, many households continue to be on the lower rungs of this ladder due to affordability, infrastructure limitations, and restricted product availability. Understanding where communities are on the ladder shows the potential for improvement and for designing inclusive solutions.

By focusing on laundry as a system—one that touches water, energy, health, livelihoods, and care—it becomes possible to identify opportunities for circularity, equity, and innovation.



TIME TO ACT: HARNESSING MOMENTUM FOR TRANSFORMATION



Scale up innovative washing tools

New technologies, such as the Solar Soaker, Divya Washing Machine, and Tumble Drum, rethink the possibilities of manual laundry. With these tools, washing is less labor-intensive, more efficient, and highly beneficial for those in rural areas. The Divya, for example, is a hand-cranked machine that uses less water and 80% less time.



Introduce improved basic practices via outreach

Extensive soaking, using scrub boards, and having washing platforms in communities can have immediate positive impacts in addressing time poverty and safety. Promoting these and organizing an information drive or behavior change campaigns with civil society organizations and companies selling detergents (many of whom have established distribution networks even in far-flung locations) can make a huge difference.



Accelerate detergent innovations

From health to sustainability, detergents have a big role in alleviating laundry challenges. The global detergent market, though huge, can drive more innovation for products catering to rural and low-income settings. These communities require soaps and detergents that are eco-friendly, water-saving, and ideal for cold-water use.



Foster inclusive business models

Countless women are employed as laundry workers across Asia and the Pacific. Given this informal and toilsome work, there is a need for safe and secure employment. Community-run laundry services, women-led enterprises, and cooperatives can help provide improved facilities and better social and economic benefits. Fostering partnerships can also lead to startup assistance, such as microfinancing for laundry tools, business skills training, and other social interventions like insurance and children's welfare support.

Partner with detergent companies to develop eco-friendly, cold water-efficient products for rural and urban markets.

Use existing distribution networks to promote better laundry practices (e.g., soaking, less water-intensive methods).

Develop laundry-specific water partnerships for reliable, safe water sources (avoiding river washing, reusing greywater).

Integrate water-efficient laundry systems in community infrastructures.

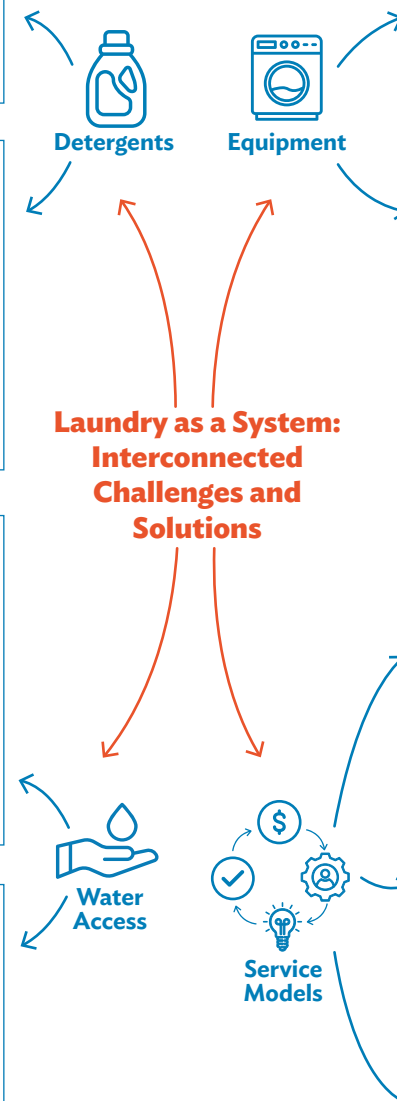
Promote semiautomated, hand-powered machines for rural and peri-urban areas where electricity is limited (e.g., Divya, Tumble Drum, Solar Soaker).

Invest in communal equipment models where shared access to machines reduces household burden and creates service-based income for women.

Support women-led community laundry small and medium enterprises offering affordable, shared services.

Increase innovation (e.g., Solar Soaker, Divya Machine) through business models adapted to low-resource settings.

Explore circular models, such as detergent subscription services tied to laundry tools.





JOIN THE MOVEMENT: IT'S TIME TO SHARE THE LOAD!

The onus to change the way laundry is seen and practiced is on everyone. ADB welcomes potential partners, funders, and various practitioners and changemakers to generate awareness and build a strong coalition toward laundry transformation.



Collaborate across sectors

Water may be an immediate entry point to tackle laundry's issues, but it will require the effort of various sectors and engagement with stakeholders to ensure holistic renewal and mobilize action.



Increase knowledge and research

Since laundry has not had a solid place in international development, thorough research and knowledge is a must to provide evidence and inform supportive regulations and programs.



Push for partnerships and pilot solutions

To help break silos, developing partnerships will be key. This could be both within ADB and beyond—for expanding knowledge and piloting innovative and tangible solutions grounded in local context.



Strengthen the narrative

Creating strategic and effective communication campaign can attract attention and partners and reinforce the importance of reshaping laundry. The narrative can be made compelling with insights and stories from the field.



Build capacity and support upskilling

Developing the capacity of key players will increase the understanding on laundry and its negative impacts across many sectors, encouraging more people to analyze its various facets and contribute to its improvement.



Attract private sector funding

From financing to its agile problem-solving approach, the private sector will be a critical player in scaling up technologies and solutions for better laundry practices.



Promote planning and policy development

Sustaining the gains of this movement will need complimentary supportive policies and investments, whether for wider water supply infrastructure, regulation for detergent composition, or enforcement of laundry standards in health clinics.



Contact ADB

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FAST FACTS ABOUT LAUNDRY

Women devote up to 20% of their weekly active time to manual laundry. Each step of the laundry process demands effort, from soaking and scrubbing to drying and folding. This is equivalent to 10–15 hours per week, and is often done without proper tools, which can lead to chronic pain and skin problems.

Cleaning clothes amounts to the annual carbon dioxide emissions from 136 coal-fired power plants. This is 530 metric tons of carbon dioxide equivalent per year due to washing, drying, ironing, and dry cleaning, according to the Carbon Trust.

Over 700,000 microplastic fibers could be released per wash. This is from an average 6-kilogram load of laundry with clothes made from synthetic materials like polyester. These microplastic fibers end up in the environment, affecting both biodiversity, food, and human health.

The first electric washing machine came out in 1908. Called Thor, it was invented by Alva J. Fisher using a drum-type washer with a steel tub powered by an electric motor. It was seen as a game changer, ready to revolutionize hand-powered tubs and actual handwashing to reduce time and effort spent for manual laundry—except, even a century after, many still wash by hand today.

A standard washing machine uses about 75 liters of water per load.

The share of water consumption for laundry use ranges between 5% and 19%, depending on the water used per wash cycle and on the total water consumption of the household, based on a 2010 study. Currently, there is no definitive number on water usage given the many variables and laundry practices, proving the difficulty—and need—for a thorough study.

Sources: K. Laitala et al. 2020. *Laundry Care Regimes: Do the Practices of Keeping Clothes Clean Have Different Environmental Impacts Based on the Fiber Content?* *Sustainability*. 12 (18); Sarah Turnidge. 2024. *Manual washing machines to be given to thousands abroad*. *BBC News*; I. Napper and R. Thompson. 2016. *Release of synthetic microplastic plastic fibres from domestic washing machines: Effects of fabric type and washing conditions*. *Marine Pollution Bulletin*. 112 (1-2); Whirlpool. *How much water does a washing machine use?* C. Pakula and R. Stamminger. 2010. *Electricity and water consumption for laundry washing by washing machine worldwide*. *Energy Efficiency*. 3 (4).

Notes:

In this publication, “\$” refers to United States dollars.
ADB recognizes “Hong Kong” as Hong Kong, China.
All photos by ADB.



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