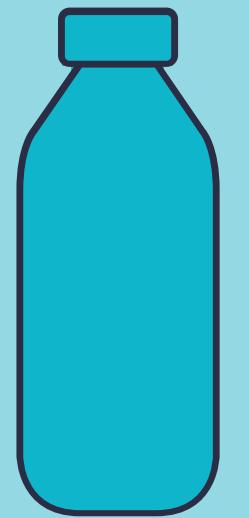


ZERO
WASTE
LIVING
LAB

Enviu Indonesia IMPACT REPORT 2023

a program by **enviu**



QQ

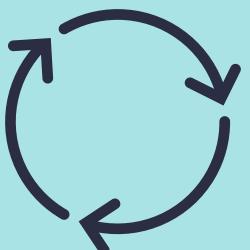
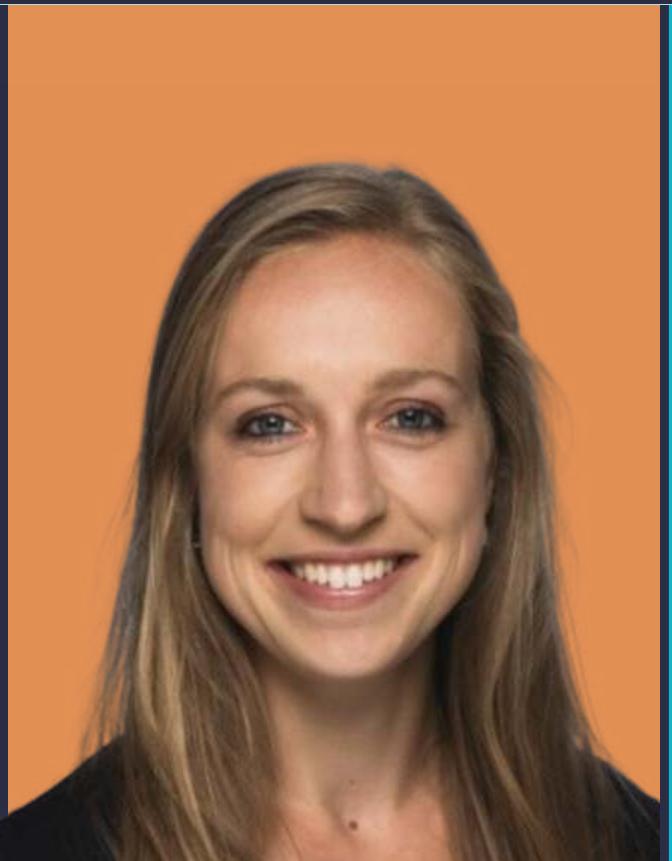
The [reuse] system must be accessible, inclusive, well-communicated, [and] provide clear environmental benefits [...]

— The Global Plastics Policy Centre



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FOREWORD



Saving our planet from the plastic pollution crisis asks us to implement systemic solutions that tackle the issue at its source. Indonesia has a severe plastic waste problem. The country generates a staggering 7.8 million tonnes of plastic waste annually, of which 4.9 million tons are mismanaged, meaning it ends up in oceans, dumpsites or in air pollution as plastic waste is also set on fire by individuals on a day-to-day basis*.

At Enviu Indonesia, via our Zero Waste Living Lab (ZWLL), we build impact driven ventures that eliminate single-use plastic packaging. Our mission is to change the traditional, linear 'take-make-use-dispose' model and transform it into a circular economy that benefits both people and the planet. We want to make the zero waste lifestyle the 'new' normal that is adorable and convenient for everyone.

We build local and global partnerships to inspire significant changes and scale our solutions. By building new delivery models and rethinking supply chains, we enable cross-sector stakeholder involvement for true systemic change. Together, we can enable a sustainable system with zero waste consumption patterns!

Kind regards,

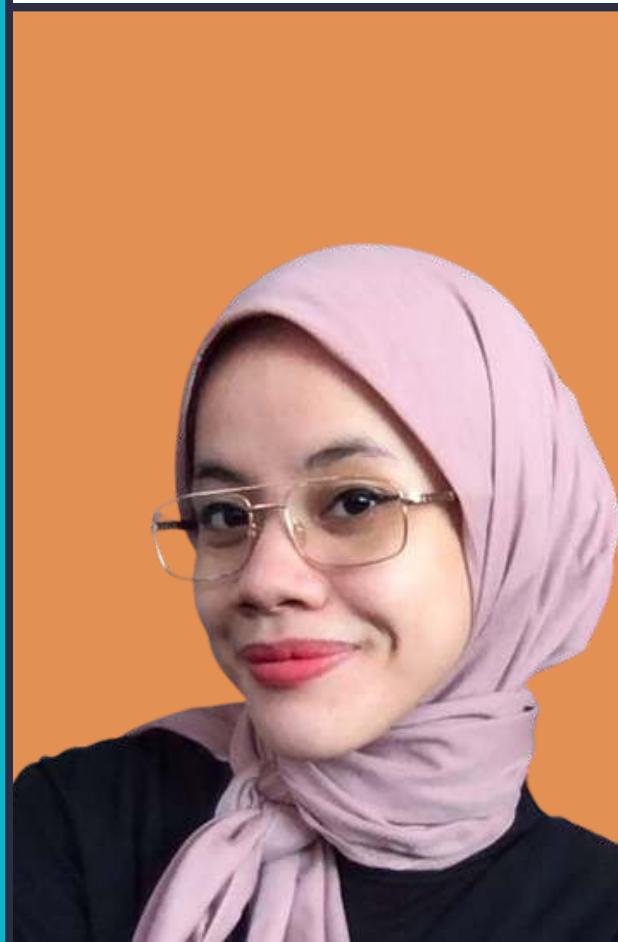
Eline Leising

Head of Program,
Enviu Indonesia

Darina Maulana

Program Lead,
Enviu Indonesia

*Source: World Bank, 2021



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Partners The Team

GLOSSARY



FMCG	Fast Moving Consumer Goods
F&B	Food and Beverage
SUP	Single-Use Plastic
PoS	Point of Sales
PKK	Indonesian Govt. Pemberdayaan Kesejahteraan Keluarga (Family Welfare Movement)
Warung	A small, neighborhood convenience shop, family-owned business retail/caf��/eatery
GHG	Greenhouse Gas Emissions



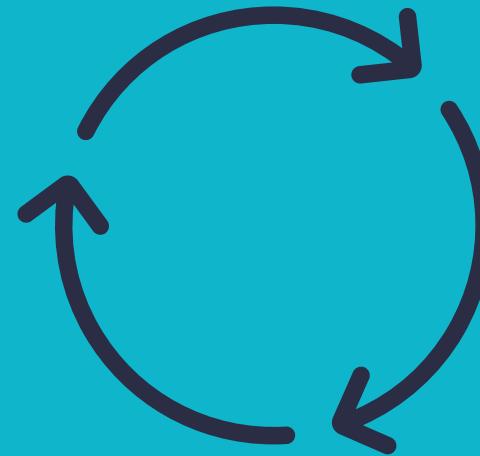
INTRODUCTION

Problem and Program



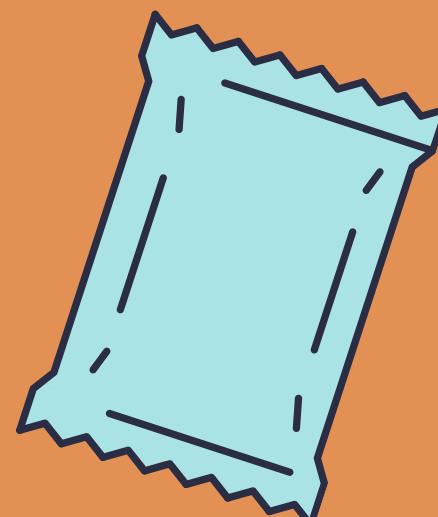
QQ

We cannot simply
recycle or reduce
our way out of the
plastic pollution
crisis.



THE PROBLEM — why reuse?

The scale of the plastics industry is immense, increasing 20-fold over the last 50 years and expected to **quadruple by 2050**. Linear solutions cannot keep up.



Only 10% of Indonesia's plastics are currently recycled.

As the second largest polluter of our oceans, Indonesia is responsible for 6.8 million tonnes of plastic waste per year — of which 70% is leaking into the environment in various ways.*

But recycling is not the solution.

- there are limited to no mainstream waste collection and management systems.
- cheap, flexible, multi-layered plastics are abundant in the economies of the Global South, and no technology exists that can effectively recycle them.

We urgently need to phase out plastic packaging that cannot be recycled, and to curb the production of plastic itself.



The Global South faces a disproportionate burden to address the plastic crisis, with little influence on what high income economies introduce to their markets, and limited investments into recycling and collection.

→ **Reuse systems will empower Indonesia to transition away from a reliance on single-use plastics towards a self-sufficient economy.**

*Source: National Plastic Action Plan Indonesia (2020)

THE PROBLEM – why reuse? (cont.)

A reuse system offers:

ECONOMIC

Reuse systems can generate new livelihoods and reduce waste management budgets, with a mere 20% conversion of plastic packaging yielding a 10 billion USD business opportunity.

SOCIAL

Limiting our reliance on single-use plastics can mitigate the burden on vulnerable communities by offering accessible and affordable alternatives.

ENVIRONMENTAL

Reuse models curb plastic pollution and reduce greenhouse gas emissions by limiting the use and disposal of non-renewable resources. The more you use a product, the more you decrease its life cycle impacts.

benefits.*

compact products

Packaging and transport costs can be reduced by supplying refills in reusable containers in compact formats (as concentrates or solids like tablets).



customisation

Reuse models can accommodate individual needs by letting users mix and match flavours, personalise packaging or choose desired quantities.



deposit and reward

Brand loyalty and customer retention can be achieved through deposit and reward schemes for reusable packaging.

Read the venture overviews to see how each embodies the principles of a reuse system!

smart systems

User preferences and system performance can be understood using digital technology (e.g., RFID tags, sensors, GPS tracking) in the reuse system.

shared design

Economies of scale for distribution and logistics can be achieved by sharing reusable packaging across brands, sectors, or wider networks.

superior design

User experience can be improved by enhancing the look and functionality of reusable packaging (which can be high-end as initial production cost is divided over many uses).

THE PROBLEM – building a reuse system

The transition to reuse systems is vital to achieving a sustainable, equitable future.

Reuse systems will mitigate overproduction and excessive waste generation attributed to the single-use plastic packaging industry, ameliorating the social and environmental impacts.

Having received limited attention, there is boundless potential to pioneer solutions.

Collaborative, systems-based efforts will form the backbone of this transition.

Our mission for a circular economy in Indonesia has exposed to us the challenges in the system.

Business Barriers

- Businesses can't independently adopt reuse principles: collaboration is necessary to encourage policy, raise awareness, and mitigate steep infrastructure needs synergy.
- Development costs are high, making it difficult and risky for lone businesses to invest in reuse systems and face the behemoth single-use plastic industry.
- Lack of reuse policy and standardisation.
- Awareness: customers believe in recycling, which may prevent them from inculcating reuse practices.

Consumer Barriers

- Education, awareness, exposure, information.
- Reuse systems must be comparable in cost and convenience to single-use options.



THE PROGRAM — method

Enviu's impact-driven venture-building approach is based on the Theory of Change.



Systems Failure

We identify root causes, leverage points and opportunities.

New Business Models

We ideate and validate multiple, potentially system-changing models.

Impact-Driven Companies

We build companies that create a direct positive impact on our lives and the environment.

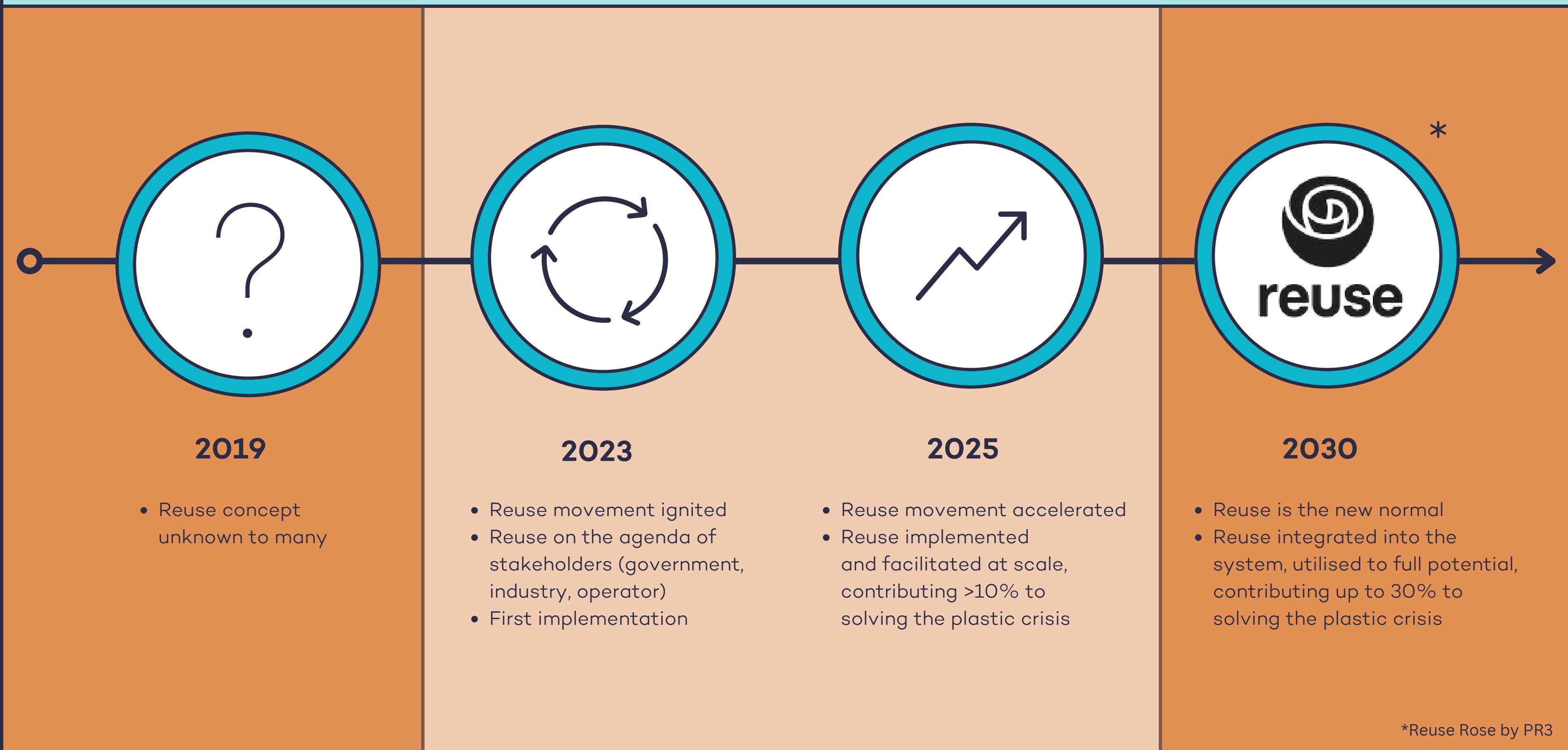
Market Change

These companies influence and inspire market participants by showcasing new models.

Sustainable System

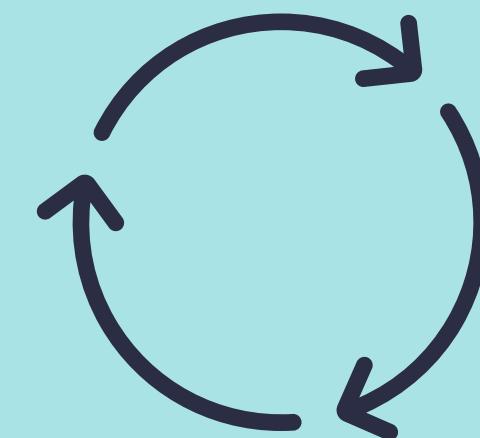
This drives the economy towards a "new" normal, one that serves people and the planet.

THE PROGRAM — our reuse vision



SUMMARY

Impacts, Learnings, Successes



OVERALL IMPACT

Since 2019, we have collectively established seven reuse and refill initiatives.

We had



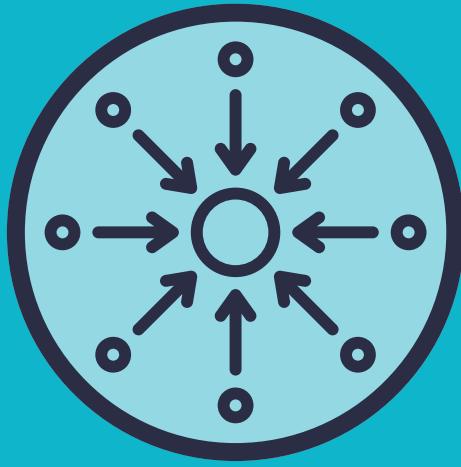
> 6000
direct customers
in Greater Jakarta

We have collaborated with



10 FMCG companies
> 40+ hotels, restaurants and cafés
to adopt reuse.

We have established



>650 reuse hubs
in our communities, the
majority led by women.

The result:



> 25 million SUPs
prevented from leaking
into the environment, over
the past 4 years.

And we are aiming for more, with more collaborations in the making!

PROGRAM & ECOSYSTEM BUILDING

Tackling plastic waste is a systematic problem: we established several collaborations to overcome the barriers together

Reuse in Jakarta

We collaborate with Dietplastik Indonesia through the Reuse in Jakarta program, supported by Plastic Solutions Fund, to showcase and build a reuse ecosystem in Jakarta city, in the pursuit of Policy Advocacy & Campaign, Capacity Building for institutions and communities to adopt reuse, as well as Mobilizing Funders towards investment in reuse.

PISCES Partnership



We are doing an initial mapping for a market study in Banyuwangi with PISCES Partnership, a plastic research collaborative consortium in Indonesia. It consists of international and national academics and industries. The mapping leads to a reuse pilot which is planned for 2024.



Plastics in Circles



We are part of the Plastics in Circles consortium from the Netherlands (led by MVO Nederland) along with other circular plastic innovators, to implement solutions that enable a circular plastics value chain in Indonesia.

MEDIA AND PARTNERSHIPS

Since 2019, we have collectively established seven reuse and refill initiatives.

Masterclasses & Showcase

— **440 communities** were engaged in reuse education, training and awareness sessions (masterclasses) including **women-led** groups PKK and dawasima.

— Demonstrated reuse solutions at the The Indonesia Knowledge, Climate, Arts & Music Lab (IKLIM) Fest! (Nov 2023) where F&B products were served in reusable packaging with on-site washing facilities.



Media and Communications

Successfully created awareness and activated key stakeholders (consumers, businesses, communities, government) via media and communication:

— Organised a media gathering in one of Allas' café partners to draw attention to reuse systems ([report](#)) (Nov).



— Hosted the Unilever Transform Grant launch to invite more investment into reuse systems, covered in 17 media outlets (July).

— Featured on ADB's best viewed media outlet '[SEADS](#)' (Sept).

Boosting Exposure to Reuse

— Organised and conducted “The Economics of Reuse”, a seminar with NPAP Indonesia as part of NPAP's finance taskforce (July).

— Participated at the Economist Impact UN Treaty forum group discussion in Bangkok (Oct).

— Joined as a panelist on the Innovation Alliance to the Global Plastics Treaty (IAGPT) webinar on Financing to scale up solutions and innovations (Nov)

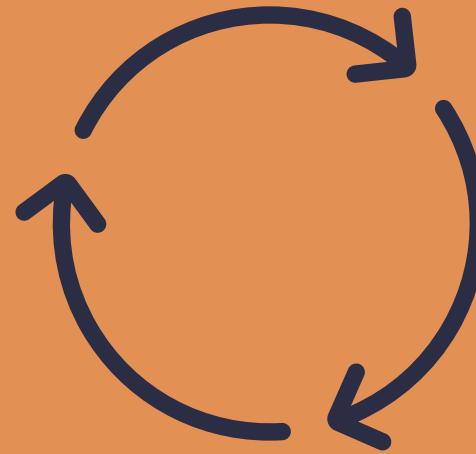
— Pitched before VC funders to leverage finance for Reuse in the festival of “Langkah Membumi” by Blibli and Ecoxyztem (Nov)..

Economist Impact events

Image Credit: IKLIM Fest, dietplastik

THE VENTURES

Overview, Impacts, Learnings



VENTURE OVERVIEW

Our ventures aim to enable reuse solutions for FMCG and F&B industries.

From human-centric issue analyses to radical ideation and validation, we build and learn from novel business models in the packaging sector.

SCALING



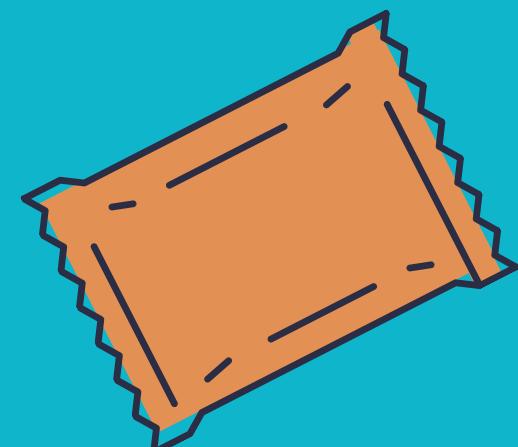
Enable everyday needs waste-free through an affordable and convenient returnable and refillable container system.

VALIDATING



Reusable packaging service for F&B products. Return from home (online), and on-the-go, at a nearby sales point.

At the ZWLL, we learn from **success AND failure**. While some ventures continue making an impact, the less successful leave us with insights we can leverage for future successes.



INVALIDATED



Refill machine for food grade FMCG products. Refill on-the-go.

INVALIDATED



Zero-waste drinking water solution based on a filter system. Refill on-the-go.

INACTIVE

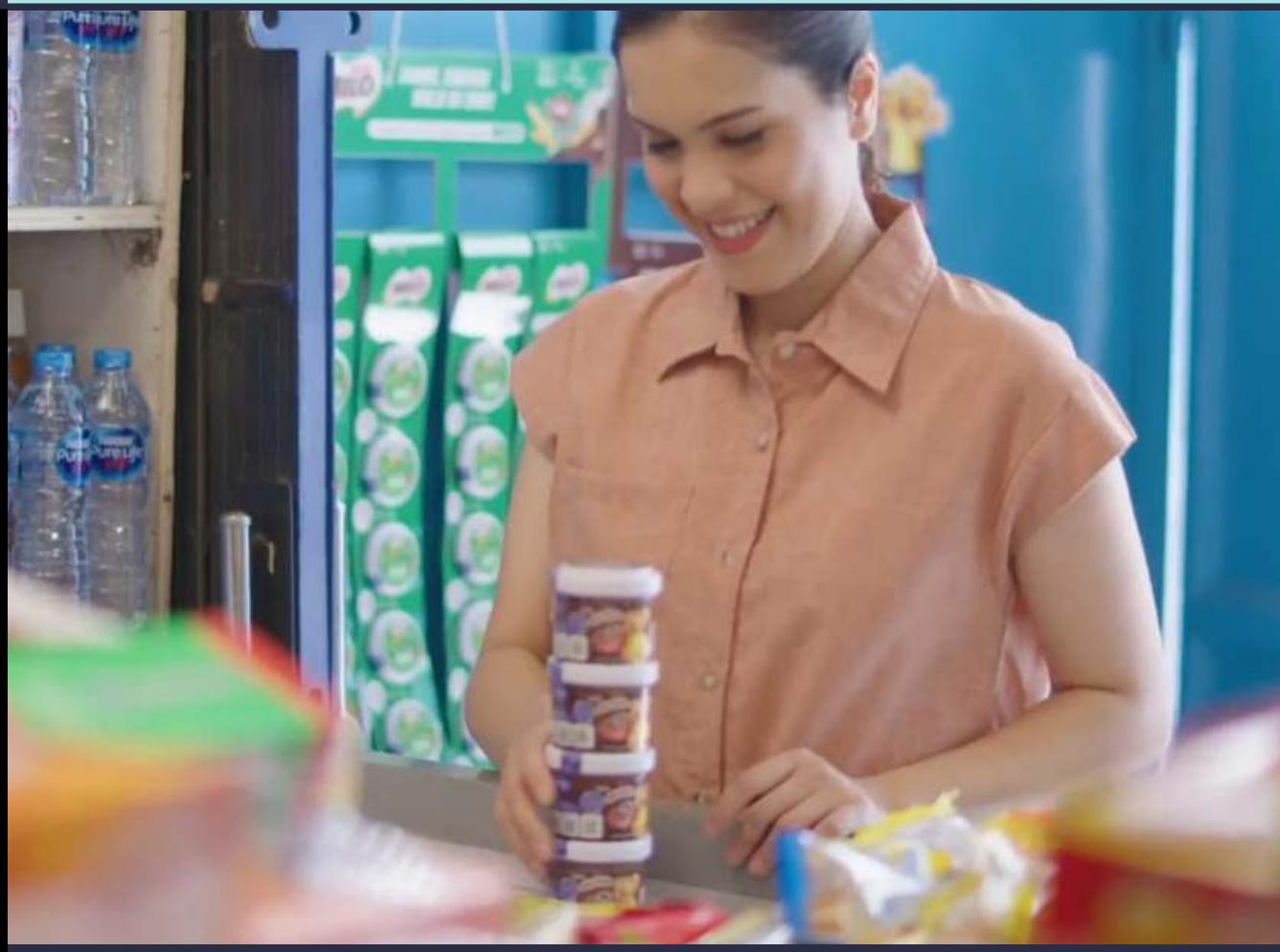


ALUMNI



SUSTAI^NATION

SCALING



Impact Traction vs. SUP

Plastic Waste Saved*: 286 kg

GHG Emissions Saved*: 17.8 ton CO2eq

Water Use Decrease*: 3%

Alner worked with 10 partners in 2023, serving 1000+ customers up to Dec'23.

ABOUT

Alner, short for Alternative Container, enables everyday needs to be waste-free through an affordable and convenient returnable and refillable container system. This prevents single-use packaging at the source. Alner is leading the reuse packaging industry through its efficient and fully traceable distribution model, innovative reward system, and unique software integration with FMCG companies and retailers.

THE MODEL

Partnering with top FMCG brands, we offer daily essentials such as soap, shampoo, detergent, spices, rice, and snacks in sustainable packaging.

Return Model:

Our reusable containers are filled by brand partners and sold via home delivery or offline retailers. Customers return these containers on their next purchase for a discount.



Refill Model:

We also supply bulk products to retailers who then offer refills to consumers. Customers can use their own containers or buy our durable ones.



THE BENEFITS

Affordable

→ Get cashback when returning our containers or buy refills with own container

Shared design

→ Our universal containers ensures cost-effective and efficient logistics.

Smart systems

→ Trackable containers with our QR code system.

Superior design

→ sleek, functional design saves space and outperforms single-use containers.

A letter from Alner's CEO

In 2023, we have ignited a powerful movement, inspiring over 900 individuals and empowering more than 700 small businesses to join us in our reuse-refill revolution. By choosing our solutions, you have helped us avoid 138,748 instances of single-use packaging waste and cut over 17 tCO₂e in emissions, with a product return rate of 68%. Thank you for making this vision a reality.

— **Bintang Ekananda**



WHAT THEY SAY

Alner's Partner

“Happy to be able to collaborate with Alner. Collaboration with Alner has had a positive impact on Ramuraga's sustainability in voicing its values in promoting responsible consumption and reducing waste. Good coordination with the Alner team, both the fulfillment team and the partner marketing team, also helps strengthen our shared commitment to a better environment and facilitate more orders.”

— **Via**
Marketing & Partnerships at Ramuraga



Milestones

2020

June '21

May '22

June '22

Dec '22

Feb '23

Apr '23

Nov '23

Founded

First grant from AIS forum, expanding to women-led communities

Bintang awarded Forbes Asia's 30under30

\$440,000 grant funding from ADB + signed a partnership with WIPRO.

\$150,000 NREF funding & opened PoS in 150+ women-led communities

Rebrand to Alner from Koinpack

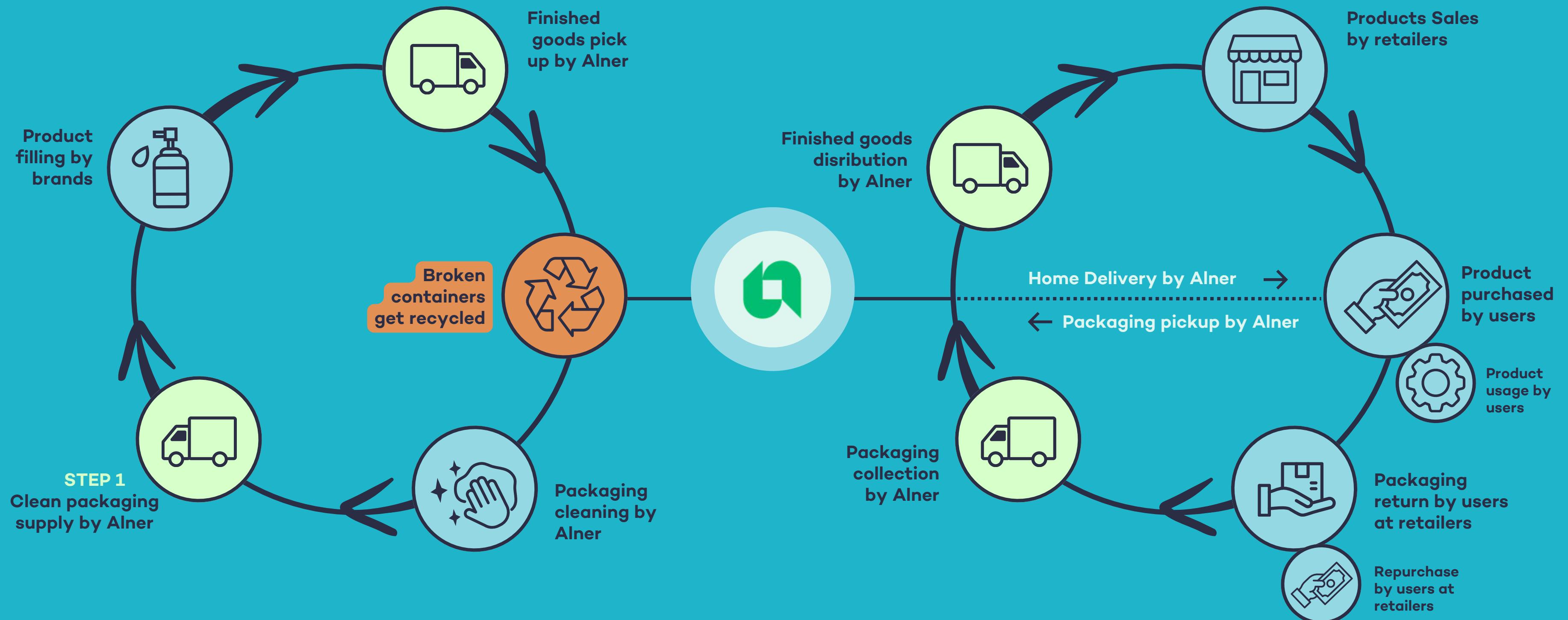
Awarded TRANSFORM (Unilever, EY, FCDO UK) Grant for \$479,000

Awarded Mastercard Strive Community Innovation Fund Grant for \$145,000

SCALING



(formerly Koinpack)



VALIDATING

allas



Impact Traction vs. SUP

Plastic Waste Saved*: 132 kg

GHG Emissions Saved*: 0.3 ton CO2eq

Water Use Decrease*: 53%

ABOUT

The trend of consuming food and drinks on the go continues to grow. Allas is the first returnable packaging-as-a-service for Indonesia's food and beverage industry. This facilitates zero-waste on-the-go food and catering.

THE MODEL

By providing returnable food and beverage packaging, Allas connects merchants (restaurants/ cafes/catering providers) and users. Allas supplies the packaging to its merchants/ events, who then deliver it to consumers. Allas handles the reverse logistics and package cleaning for the next usage cycle.

For customers, Allas works on a one-time subscription fee model. Subscribed customers can use their Allas username when ordering food online, and return the packaging to Allas directly via Fleet or to any Allas merchants to be collected and cleaned.

THE BENEFITS

- Compact products** → Foldable meal containers save space during transportation.
- Shared design** → Packaging is shared across various restaurants and cafes.
- Superior design** → This improves user experience with simple yet quality designs.

VALIDATING

allas

A letter from Allas' CEO

Building a venture focusing on sustainability and reuse is challenging and fun. As Indonesia's leading returnable packaging service provider, Allas is growing and exploring many innovative ways to develop the returnable packaging business model. We anticipate that in the future, large-scale events will use returnable packaging more frequently, and it will be normalised throughout Indonesia.

— Laurencia Cindy Saputra



Milestones

2021

Founded

June '21

Onboarded first two merchants

Dec '21

1st Grant: ESGNow, 2nd place

July '22

Joined the Reuse in Jakarta program and started the GIZ CAPSEA program

Dec '22

Onboarded 20+ merchants

Nov '23

First music concert and plates/cutlery launched

Dec '23

Exploring options in new market segments

WHAT THEY SAY

Allas Partner

"Allas adds more value to our events and is walking the talk in enabling a sustainable future. Plus, it's convenient and the packages are so well designed."

— Nanda

Allas Consumer

"So happy to find a restaurant that has the option to package their food using reusable packaging. It makes me feel less guilty of wasting the food packaging."

— Rahyang



INVALIDATED



ABOUT

QYOS provides automatic refill stations for household products, which are placed in shops, mini-markets, and supermarkets. The QYOS machine provides refills in store for both food grade and non-food grade products. QYOS focuses on reducing upstream plastic waste through refilling and working closely with FMCGs.

THE MODEL

QYOS provides daily necessities to customers. The product dispensing system eliminates single-use packaging by providing reusable containers that can be rented and refilled with mass consumables, household items, and daily products such as cereals, powdered drinks, hand sanitiser, detergent and shampoo. The machine uses a display where customers can choose products and product quantities to be refilled directly on-the-go.

Impact Traction vs. SUP

Plastic packages saved: 3,566*

*based on the number of successful transactions between Qyos and customers

Customization

Smart Systems

Superior design

- Product and quantities can be customized during filling.
- Packaging is shared across various brands.
- This improves user experience with simple yet quality design.

INVALIDATED



A letter from Qyos' Project Lead

With QYOS, we have gained a lot of useful learnings not only for refill systems, but for circular business models in Indonesia in general as well. The refill system is generally well received by the market, but we need to consider the product-market fit holistically in the local context.

Firda & Firman



Milestones

2020

Founded

Jul'21

Launched
QYOS x KAO

Dec'21

Launched
QYOS x Unilever

Mar'23

Launched QYOS x Néstle

Aug'23

Gained Learnings for
F&B refill tech

WHAT THEY SAID

Qyos Partner

Nestlé's packaging strategy is based around "Less packaging, better packaging, better system". The Qyos pilot enabled us to test consumer acceptance with the dispensing system that touched on all 3 elements of the strategy. We hope government targets will be supported by industry and policy work to build and enabling environment for reuse and refill systems moving forward.



— Nestlé Indonesia

Qyos Consumers



"Is nice to see the refillable option from the brand that consumer already know and close with!"

INVALIDATED

Qyos



At Enviu, we learn from successes and failures alike. We use the learnings from Qyos to inform our ongoing ventures.

THE LEARNINGS

Technological Hurdles

The technology involved was expensive, posing a high barrier to entry for smaller stores and introducing a steep breakeven point. The machines demand for various adjustments, specialised parts, and use and repair faculties, coupled with the differing requirements of various FMCGs, made it difficult to scale the venture.

Cultural Clashes

The mainstream Indonesian population is accustomed to a standard of service that clashed with Qyos' primarily self-service operations, with most Indonesians preferring to interact directly with sellers and employees and be served by a human being (not a machine!).

Regulatory Hurdles

In the absence of dedicated regulation and policy surrounding bulk and reuse mechanisms, permissions and food safety considerations were difficult to navigate. The pilot managed to work with food grade products, but in turn a lot of cleaning mechanisms were required, adding to the operating costs.



INVALIDATED

econesia.®



ABOUT

Econesia offers a high-end, compact water filter that is suitable for homes and small businesses. This solution reduces single-use plastic bottles by making it easy to refill bottles with clean water.



THE MODEL

Econesia aimed to free the hospitality and retail industry of single-use plastics. The product was a full-service drinking water solution for hotels. Instead of using single-use plastic water bottles, Econesia provided them with a water filtration system for fresh and healthy water in refillable glass bottles.

Impact Traction

- Plastic Waste Saved: 285.2 kg
- Partners: 50+

Since founded in 2020.

Shared design → Intuitive design for the products, cross-classification.

Compact products → Use your own bottles or glasses for water; no packaging needed.

Superior design → Improve user experience with simple yet quality design.

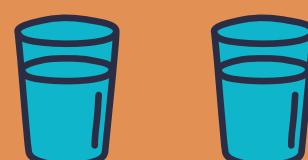
INVALIDATED

econesia.®

A letter from Enviu's Entrepreneur in Residence

While Econesia's model may be invalidated, reverse osmosis technology will be part of the solution to the problem of water security, particularly in rural areas of the Global South. If implemented correctly, it can effectively terminate the use of SUP water bottles.

~ **Micke Magnusson**



WHAT THEY SAID

Econesia Partner

"This system works very well to reduce plastic. As we know, plastic pollution is a complex problem. With an osmosis system, we can serve our customers mineral-rich, clean and plastic-free water."

— **Riljal**

Econesia Partner

"We are very happy that we can serve healthy, mineral-rich and plastic-free water in our café now!"

— **Dewi**

Milestones

2020	May '20	June '21	Jan '23	Nov '23
Econesia founded	Reached 10 Hospitality facilities using the product	Slowed down and halted due to COVID-19 restrictions	Econesia resumed business and increased sales by 50% monthly	Officially invalidated



At Enviu, we learn from successes and failures alike. The learnings from Econesia can inform future endeavours to eliminate SUP water bottles.

THE LEARNINGS

Consumer Behaviour

Consumers are accustomed to purchasing SUP bottles of water and using the typified jerrycan water dispensing facilities available in public places. Expecting consumers to trust that a new piece of technology is dispensing water of a comparable quality was a steep hill to climb, demanding more awareness and lobbying than originally anticipated.

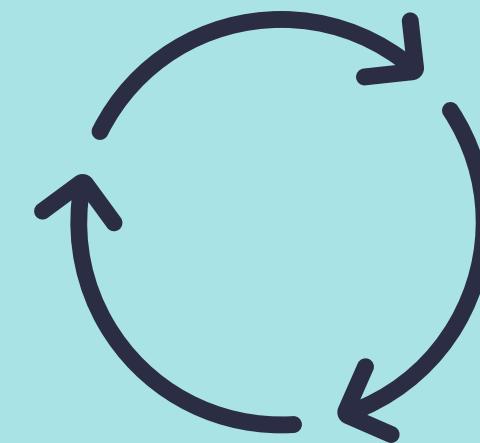
Market Fit

Consumers typically purchase SUP bottles or procure drinking water for free from jerrycan dispensers in public places. Requiring customers to pay for dispensed water, or requiring that public spaces (e.g., restaurants) provide this water for free in replacement of SUP bottles that are usually sold at high margins, was unsuccessful.



GOING FORWARD

Vision, Goals, Engagements



LEARNINGS – barriers

The learnings we gathered this year can help inform how we invest in and scale reuse and refill systems.

No business case as it is hard to compete with the very cheap single use plastics packaging supply chain.

In the absence of scale there is no investment readiness, skepticism towards valuation, ROI, scalability.

There are limited examples of solutions for benchmarking purposes.



No standards exist as of yet that pertain to reuse systems, making it a risky investment.

There is a lack of urgency in the ecosystem, as the vast majority of investments focus on downstream solutions (collection, sorting, recycling).

The small ticket sizes that exist are often not feasible due to administrative and portfolio management costs.

And we aim to learn more, establishing new ventures and piloting radical new ideas!

LEARNINGS – opportunities

The learnings we gathered this year can help inform future endeavours to establish sustainable interventions.



Setting ambitious reuse targets, supported by standardized measurement

to ensure consistency across industry and jurisdiction, secure investments in the right solutions and ultimately facilitate the wide scale adoption of reuse.

Facilitating pre-competitive collaboration:

between companies, brands and sectors to achieve larger scales and lower costs through streamlined logistics and transport or shared infrastructure (washing/collecting) should the collaboration not violate applicable antitrust laws and regulations.

Making the economics work

- by leveraging policy incentives and other instruments that reward forward-leaning businesses in scaling reuse models.
- EPR policies can be applied to support companies in transitioning towards reusable packaging models.
- prioritizing the Global South perspective as the economics will be easier!

Banning plastic packaging types

And we aim to learn more, establishing new ventures and piloting radical new ideas!

Harmonization of packaging design

to guarantee packaging can be used as many times as possible for the same purpose, e.g. through 'universal' designs that enable acceptance across reuse systems. Harmonization of requirements and standards for packaging design, usage, collection, washing, storage, handling and filling is also crucial.



THE NORTH STAR

We continue to focus on achieving our North Star going into 2024.

An estimate of
50,000 consumers
using a lot less plastic

A minimum of
20,000 tonnes per year
of plastic packaging avoided

a zero-waste showcase market

reducing marine litter globally



We are delighted to continue co-designing solutions with the community!



OUR PARTNERS IN THE INDONESIAN REUSE REVOLUTION

FUNDING PARTNERS



PLASTIC
SOLUTIONS
FUND



High-Level
Technology
Fund
providing high tech solutions



Norwegian Retailers'
Environment Fund



giz
Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

IMPLEMENTATION PARTNERS



INDONESIA
NATIONAL PLASTIC
ACTION PARTNERSHIP



KNOWLEDGE PARTNERS



THE ZERO WASTE LIVING LAB



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MarComm Intern



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Join Our #ReuseRevolution

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 [Zero Waste Living Lab \(a program by Enviu\)](https://www.linkedin.com/company/zero-waste-living-lab-a-program-by-enviu/)

Contact us and let's collaborate!

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