

PISCES Living Labs: Co-creating solutions to tackle plastic pollution in Indonesia

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Policy Context: Indonesia, one of the world's largest contributors to marine plastic pollution, has taken significant steps towards improving its plastic waste management. Landmark initiatives such as the [National Action Plan on Marine Debris](#) and the Extended Producer Responsibility (EPR) Regulation signal a strong commitment to change. However, achieving the ambitious target of a 70% reduction in marine plastic debris by 2025 requires political will, strong regulatory enforcement, targeted investment and cross-sectoral engagement.

Key Findings: The PISCES Living Lab, an infrastructure and hands-on space for developing and testing design solutions to the plastic packaging problem provided valuable insights into drivers and barriers to adopting innovative plastic waste reduction and management solutions.

Advice: Policymakers should finance the creation of PISCES Living Labs in diverse socio-economic contexts. These Labs can support the development of upstream (e.g. alternative packaging designs) and downstream solutions (e.g. improved waste sorting and collection systems) specifically tailored to the needs of different contexts, as well as incentivising businesses to make use of these labs.

Key research findings

The Pisces Living Lab:

- > Enables the development, experimentation and testing of novel design solutions to the plastic packaging problem with users and stakeholders, focusing on uncovering barriers to adoption and [improving user adoption potential](#).
- > Empowers wider change through a practical step-by-step process for designing, validating and testing plastic packaging solutions in living labs, supporting replication.

Widening adoption of reusable packaging systems:

- > Reusable packaging solutions (particularly for dry food and take-away food) hold significant potential, [but uptake remains limited due to:](#) 1] High upfront costs and/or perceived risks; 2] Inconvenience associated with managing and taking containers to stores; 3] Low return rates unless strong penalties or incentives are in place to shift behaviour.
- > Barriers to reusable solutions were categorized into *design levers* (factors businesses can directly tackle through product design and strategic decision-making) and *contextual factors* (broader socio-cultural and behavioural dynamics). These translated into design and policy recommendations.

Improving waste sorting and collection:

- > At the household level, clear visual cues (captions and labels), written instructions, and verbal guidance (intervention campaigns) were found to significantly improve waste sorting behaviour and reduce contamination. This highlights that visible and accessible information is a key enabler of effective household waste management.

Policy recommendations

PISCES Living Labs:

- > **Facilitate the set up of PISCES Living Labs in different socio-economic contexts** to co-develop and test upstream (e.g. new packaging) and downstream solutions (e.g. new waste sorting and collection systems) tailored to local needs. Provide policy and financial incentives for businesses to use these labs as testbeds for scalable, circular packaging solutions.

Widening adoption of reusable packaging systems:

- > **Establish an Extended Producer Responsibility (EPR) scheme that incentivises reuse to at least the equivalent level of recycling.** This could be actioned by: introducing a modulated fee structure to close the cost gap between reusable and single-use packaging; [introducing a deposit return scheme](#); setting enforceable reuse targets for producers and brands and imposing penalties for non-compliance; mandating transparent reporting on reuse system uptake, including metrics such as number of reuse cycles, return rates etc. with detailed info on their proportion compared to single use packaging.
- > **Create shared infrastructures for reusable packaging systems** (e.g. container collection points, infrastructures for cleaning/sanitising containers), to reduce costs and improve accessibility).

Improving waste sorting and collection:

- > **Standardise household waste sorting bins** with clear visual and written guidance to reduce confusion and contamination.
- > **Fund targeted awareness campaigns to improve household waste management practices**, tailored to diverse community contexts and needs.

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