



INDONESIA
NATIONAL PLASTIC
ACTION PARTNERSHIP

NPAP Indonesia

Innovation Roadmap to Radically Reduce Plastic Pollution in Indonesia

Developed by the Indonesia National Plastic Action Partnership
March 2021



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Executive Summary: NPAP Innovation Roadmap

Indonesia has set a bold target of delivering a 70% reduction in plastic waste from 2017-2025. The Innovation Roadmap sets a path to support the creation of new solutions for plastic waste reduction. Meeting this target requires action across the plastic value chain. The NPAP Action Plan sets the strategy for our journey to reduce plastic waste. NPAP Members are undertaking a range of individual and collective action towards our goal.

Part of this journey is cultivating and supporting innovators to create new solutions across the plastic waste value chain, and developing the innovation ecosystem more broadly. Five questions guide our work here:

- What would encourage and drive new R&D?
- How can we understand and validate what innovations are working?
- How can we provide more technical support to innovators?
- How can we help successful innovations access financing to achieve scale?
- How can we bring innovations to market more quickly?

Specifically, the Task Force will focus on three priorities:

- Launch an Innovation Challenge in partnership with GPAP and the World Economic Forum
- Link new ideas to accelerators and incubators, such as The Incubation Network's Ocean Plastic Prevention Accelerator or CSIRO's Plastic Innovation Hub
- Create pre-competitive spaces for large producers and consumers to detail their needs to innovators, creating 'demand' for new innovations

The Innovation Roadmap lays out the goals and practical next steps to guide the Innovation Task Force in turning strategy into results. We look forward to ongoing engagement and commitment from Members and partners as we work towards our important goal.



Introduction

We aim to improve innovation at the systems level

Innovation is more than new products or new materials.

We see opportunities to innovate in across and beyond the plastics value chain: in how we use plastic, in how we finance new projects, in how we bring together communities in conversations about waste; in how we engage informal sector workers.

Innovation starts at the local-level.

Proven working technology and local solutions that work for communities – and top-down support can ensure local innovations ecosystem to be accommodating, transfer knowledge, and local solutions scale such that all parts of the ecosystem are included and ensuring vested interests don't dominate.

Innovation in complex systems rarely comes from one solution.

Individual solutions will not help us achieve our targets. Instead, solutions must be embedded at the systems level and include multiple stakeholders.

We want to foster innovative solutions even when they aren't investible both financially and socially

We want to identify what works at the macro level and ways to adapt to local solutions, as well as what works at local level and systematise it

We want to develop an integrated and connected bench of bold ideas



Mapping of Solutions from NPAP Members

NPAP Members are responsible for a range of solutions across Indonesia

Enviu - ZWLL
Kecipir, Econesia,
Coinpack, Cupkita



GoJek
Trash to Cash,
no-plastic cutleries in GoFood



LIPI
Research on Bioplastic,
biofoam and no-wood
paper, Standardisation of eco-
friendly plastic product



McKinsey.org
Rethinking Recycle,
Recycling Academy, TPS3R
project



DNP (part of CLOMA)
Flexible plastic material



GreenHope
Ecoplas, cassava-based
biodegradable bioplastic



Coca-Cola
Plastic Reborn, Packaging
Recovery Organization



Softex Indonesia
Diaper Waste Treatment



SystemIQ
Project STOP



Unilever
Less plastic – Better Plastic
– No plastic, CreaSolv



OPPA
Community-sourced plastic
waste solutions acceleration &
research



Danone
Aqua 100% recycled
bottle



IWP
Innovation study on
biodegradable, compostable,
bio-base oxo-biodegradable
materials



SCG Indonesia
IP2WM platform
<https://www.plasticsrecyclers.id>,
Zero Waste plant solution



Chandra Asri
Plastic-to-Road project.
Integrated WMS, office
waste management solutions



Waste4Change
Smart City on Waste
Governance, MRF, Waste
Credit



Our members are already helping to drive action on NPAP's five key actions – but we need to do more

The Action Plan calls for action across the plastics value chain

Reduce & Substitute

Reduce or substitute (R&S) plastic usage to prevent consumption



Redesign

Redesign plastic products and packaging for reuse or high-value recycling



Collect

Collect more waste by boosting state-funded and informal or private sector collection systems



Recycle

Quadruple current recycling capacity



Dispose

Build or expand controlled waste disposal facilities



NPAP Members are already working on a range of promising innovations across the plastics value chain

Reduce & Substitute

Material substitution

Product tracking by producers

Bank Sampah improvements

Consumer behavioural changes

Reverse vending machines

Redesign

Material substitution

New business models for reuse

Collect

Expanding collection on land

Expanding collection in the sea

Autonomous collection and separation

Product tracking by wastepickers

Driving Capex investment in MRF

Driving behavioural change in household level

Recycle

New recycling techniques

New uses for recycled materials

Energy to waste

Market development on supply and demand-side

Improving value chain traceability

Dispose

Biological degradation

Energy to waste



Objectives of NPAP Innovation Task Force

To deliver on the goals of the Action Plan, the Innovation Task Force will undertake four actions while considering the impact on all stakeholders

The Action Plan calls for action across the plastics value chain

1

Map innovations, ventures, and project development linked to the Action Roadmap's five points of action

2

Identify gaps and barriers to innovation

3

Identify collaboration opportunities across the mapped innovations, ventures and projects

4

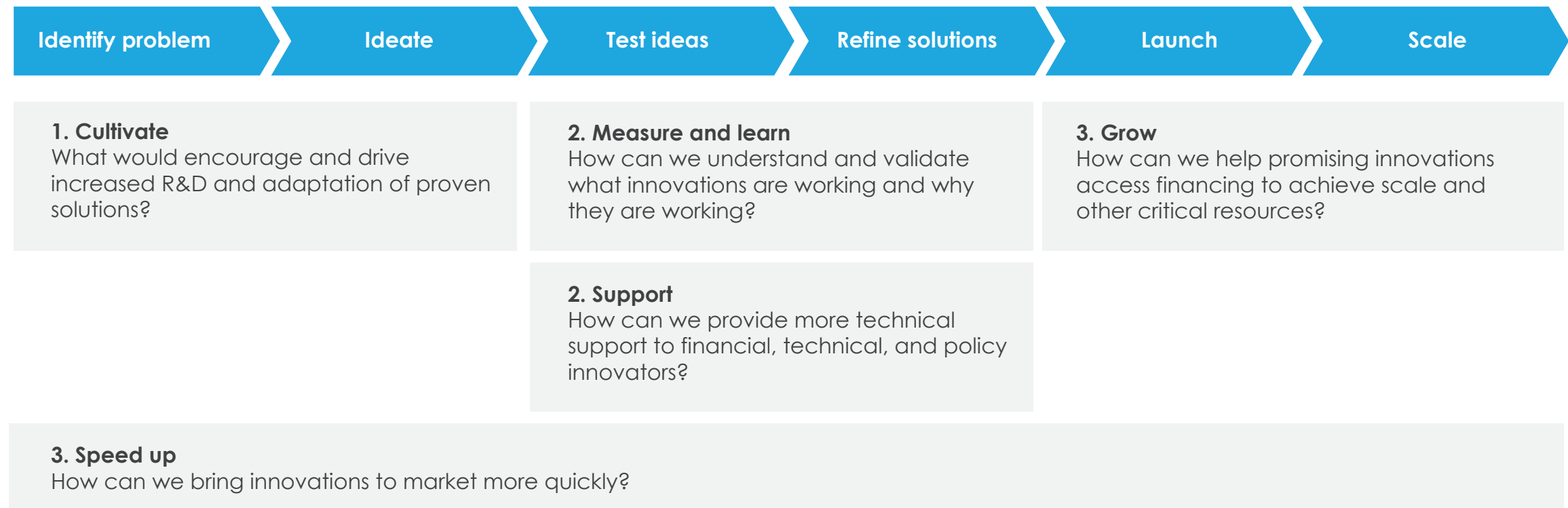
Identify the necessary skills and capabilities at the intersection of sustainable innovation, technology, market innovation, and supply chain management



Overview of Innovation Ecosystem

How can we improve the innovation ecosystem? Five questions across the cycle guide our approach

A simplified view of the innovation cycle



Action Roadmap for Innovation Task Force

1. Specific actions the Innovation Task Force will take to Cultivate innovation

Our questions

Actions the NPAP Innovation Task Force can take towards solutions

<p>Cultivate What would encourage and drive new R&D?</p>	<ul style="list-style-type: none">— Launch an Innovation Challenge in partnership with the Incubation Network, GPAP and the World Economic Forum – see p. 13— Link new ideas to accelerators and incubators, such as The Incubation Network’s Ocean Plastic Prevention Accelerator and CSIRO’s Plastic Innovation Hub – see p. 14— Create pre-competitive spaces for large producers and consumers to detail their needs to innovators, creating ‘demand’ for new innovations – see p. 15— With the Policy Task Force, identify policy changes that would encourage and incentivise innovation and remove barriers to innovation— With the Financing Task Force, secure pre-commercial R&D grant funding— Encourage National Standardization Agency (BSN) to establish an Indonesian national standard (SNI) for eco-friendly plastic products – aligning with international standards— Explore price standardisation (possibly via subsidies or price guarantees) for recycled plastics and labour (waste pickers) to provide greater certainty to innovators <p><i>Priority areas in bold</i></p>
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2. Specific actions the Innovation Task Force will take to *Measure* and *Support* innovation

Our questions

Actions the NPAP Innovation Task Force can take towards solutions

Measure and learn

How can we understand and validate what innovations are working?

- Test the effectiveness of innovations across the plastic value chain to build a knowledge base of what works, coordinating with the Metrics task Force Members and The Circulate Initiative's metrics working group where useful
- With the Metrics Task Force, demonstrate the impact of new innovations on our overall targets to identify high-impact innovations to scale
- Link leading universities to research opportunities to better understand why solutions are, or are not working

Support

How can we provide more technical support to innovators?

- **Link new ideas to accelerators and incubators, such as The Incubation Network's Ocean Plastic Prevention Accelerator or CSIRO's Plastic Innovation Hub**
- Work with The Incubation Network's mentor program to match expertise amongst NPAP Members to innovators and entrepreneurs
- For areas not covered by The Incubation Network's mentor program, create Innovation Task Force working groups around specific innovation areas to share knowledge and expertise
- Improve access testing to help new products meet green and eco-standards, with support from LIPI

Priority areas in bold



3. Specific actions the Innovation Task Force will take to Grow and Speed up innovation

Our questions

Actions the NPAP Innovation Task Force can take towards solutions

Grow

How can we help successful innovations access financing to achieve scale?

- With the Financing Task Force, connect innovators to financing institutions with matching investment profiles – aiming to do this early in the innovation cycle, to improve collaboration and co-design
- With the Financing Task Force, undertake research and analysis on system changes and new financing models that would improve the financing environment
- Support innovators to connect to critical resources such as academic and non-academic knowledge, stakeholder networks, local talent and others
- Provide better linkages between innovators and key market companies
-

Speed up

How can we bring innovations to market more quickly?

- **Link new ideas to accelerators and incubators, e.g. The Incubation Network's Ocean Plastic Prevention Accelerator; CSIRO's Plastic Innovation Hub**
- **Create pre-competitive spaces for large producers and consumers to detail their needs to innovators, creating 'demand' for new innovations**
- Undertake research and analysis on bottlenecks in the innovation cycle, including regulatory changes (as part of the Policy Task Force Roadmap development)
- Work on policy innovations designed to encourage more entrepreneurship
- Coordinate with NPAP Members to remove or minimise bottlenecks
- Leverage NPAP network to secure funding for further technical assistance
- Connect with government initiative, e.g. Indonesia Circular Economy Forum launched by BAPPENAS with support from UNDP and Denmark.

Priority areas in bold

Priority actions zoom-in: Launch an Innovation Challenge

The Action Plan calls for action across the plastics value chain

1

Identify the challenge topic and define problem statement(s)

- Canvass previous innovation challenges
- Test audience (foreign and local companies) e.g. using 2Ms crowd-sources system mapping process

2

Source innovations to enter the challenge

- Advertise for participants
- Recruit and encourage innovators to enter

3

Submit and select ideas using the UpLink platform

- Capture and share ideas
- Introduce ideas to decision-makers

4

Support and accelerate ideas

- Introduce to OPPA
- Assign mentors (working with TIN)

5

Connect ideas to industry and funders

- Share amongst NPAP network
- Pitch to the Financing Task Force and relevant industry associations and relevant industry associations/groups

actions



Priority actions zoom-in: Link new ideas to accelerators and incubators

The NPAP Innovation Task Force facilitates access to two powerful accelerators initially. We hope to partner with more accelerators and incubators over time.

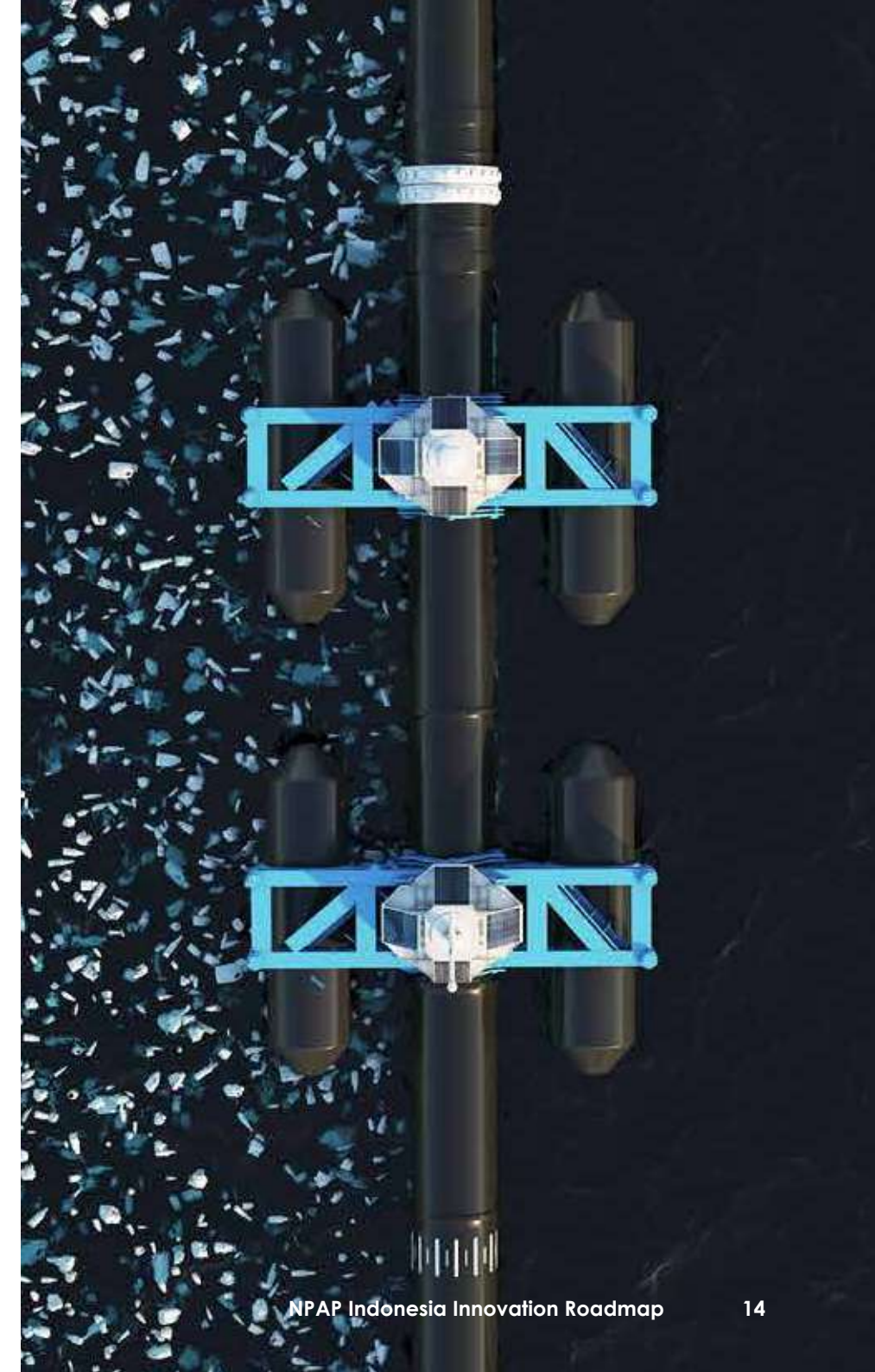


The Ocean Plastic Prevention Accelerator (OPPA) is a community-sourced accelerator supporting and scaling new local and international approaches to advancing plastic waste management and recycling infrastructure in Greater Surabaya. It is run by The Incubation Network. 22 innovators have been participating in OPPA programs since its inception in 2018.

> <https://www.oppa.id/>

Other initiatives are under way from members and other organizations:

- The Plastics Innovation Hub is a partnership between CSIRO, Kemenristek/BRIN and Australia's Department of Foreign Affairs and Trade in collaboration with NPAP.
It aims to boost innovation capabilities and to translate deep tech into scalable, real world solutions to plastic waste pollution.
- Enviu Indonesia: support innovation and solutions e.g. Kecipir, Econesia, Coinpack, Cupkita.
- Impact hub Jakarta, innovation space that exists to support organisations & entrepreneurs. Innovation challenges.
- Sustainable Living Lab, develop innovative solutions for organizations and communities that want to grow sustainably e.g. Innovation Sprints & Hackathons, SDG Corporate Innovation Lab.
- Instellar: digital Scale-Up Lab, incubators for social enterprises.



Priority actions zoom-in: Create pre-competitive spaces to improve demand signals

The NPAP Innovation Task Force can improve the demand for new innovations, helping new innovations reach market and scale

Established industry players consider where plastic could be minimised or replaced in their supply chains



New solutions reach market, reducing plastic use and reducing plastic waste

NPAP Members send clear demand signals to emerging markets for new as well as products and established services

Innovators, incubators, and accelerators aim to match the need with new solutions



Overview of NPAP Innovation Task Force

The Innovation Task Force comprises a broad coalition of coordinating members

Task Force Co-Chairs



Dr. Ir. Jumain Appe, M.Si
Deputy of Innovation
Strengthening, National
Agency for Research and
Innovation, Ministry of
Research and Technology

**SECOND
MUSE**



Simon Baldwin
Director SecondMuse
Singapore

Task Force Members who have signed the NPAP commitment letter



NPAP will support the mission of the Innovation Task Force by creating a platform for innovators

Greater information sharing

NPAP-maintained contact list of all NPAP members, across Indonesia and GPAP Members around the world

A database of innovative products, services and businesses across Indonesia

Database of financing sources for to build or scale new innovations

Networking with innovators

Regular meetings with innovators across the plastics value chain

Matchmaking between Task Force members

Collecting problem-solving sessions on areas of shared interest

Access to support

Access Financing through connections to the Financing Task Force

Measure your impact with support from Metrics Task Force Members



Over the next 12 months, the Innovation Task Force will help drive NPAP's implementation phase

In the next 90 days

Agree Task Force goals, roles, and responsibilities

Develop and launch Innovation Roadmap

Discuss and agree on the three priority areas, nominate leads and endorse deadlines

In Q1 2021

Secure financing for innovation strategy research

Launch Innovation competition through UpLink, with WEF

Coordinate with Financing Task Force on unlocking funding

Through 2021

Begin innovation strategy research in partnership with SecondMuse

Regular monitoring of NPAP progress and reporting through Steering Board

Develop a package of recommendations for the Policy Task Force

By 2025

Steward a mature ecosystem for new solutions for plastic waste in Indonesia

With the NPAP task Forces, achieve 70% reduction in plastic waste





For more information on NPAP:

 globalplasticaction.org/countries/indonesia

 indonesia@globalplasticaction.org