

Questioning the sustainability of voluntary plastic waste initiatives: the case of Indonesia

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Today across Indonesia



RAPID DEVELOPMENT

Indonesia is the largest archipelago in the world, a country that has experienced rapid development and urbanization with a population of around 270 million people.



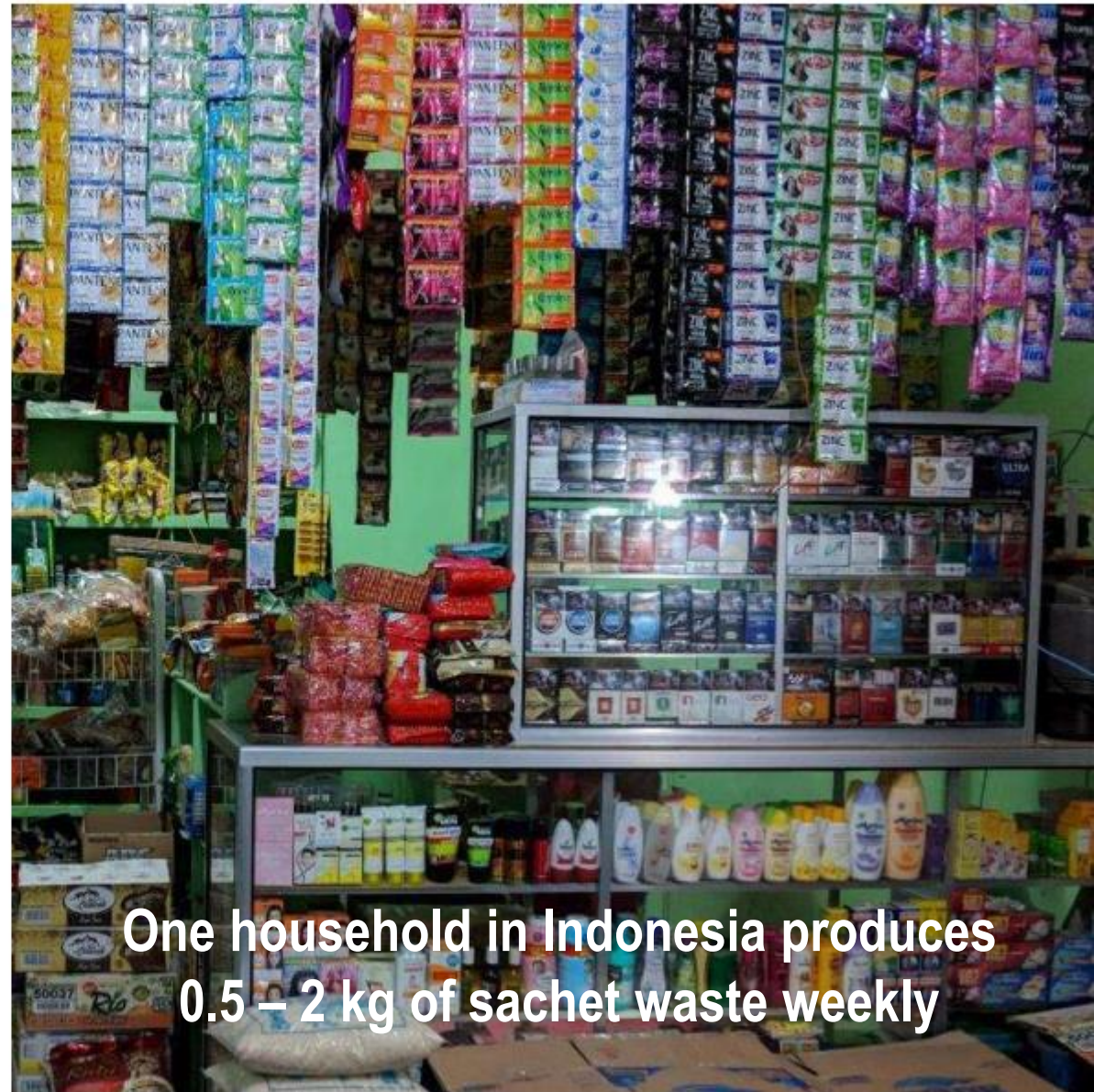
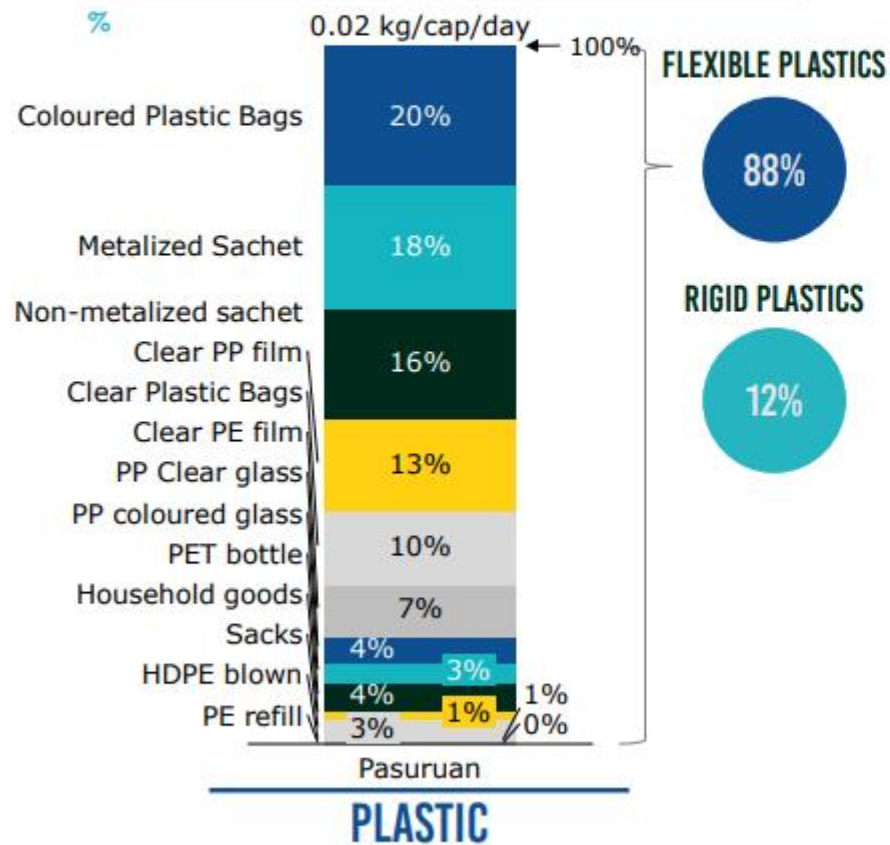
A UNIQUE PLASTIC POLLUTION MANAGEMENT CHALLENGE

- **Second top plastic polluter**
- **Only 39% of waste is collected** – 4 million tonnes of waste leak into the environment every year
- **620,000 tonnes of plastic leak** into the ocean (2020 estimate)

The single multi-layered packaging & sachet problem

IN PASURUAN, 88% OF PLASTICS ARE "LOW/NO VALUE"

Sub-category breakdown of plastic waste generation



National efforts

Indonesia targets

By 2025, reduce ocean plastic by 70%

By 2025 double waste collection to 80%

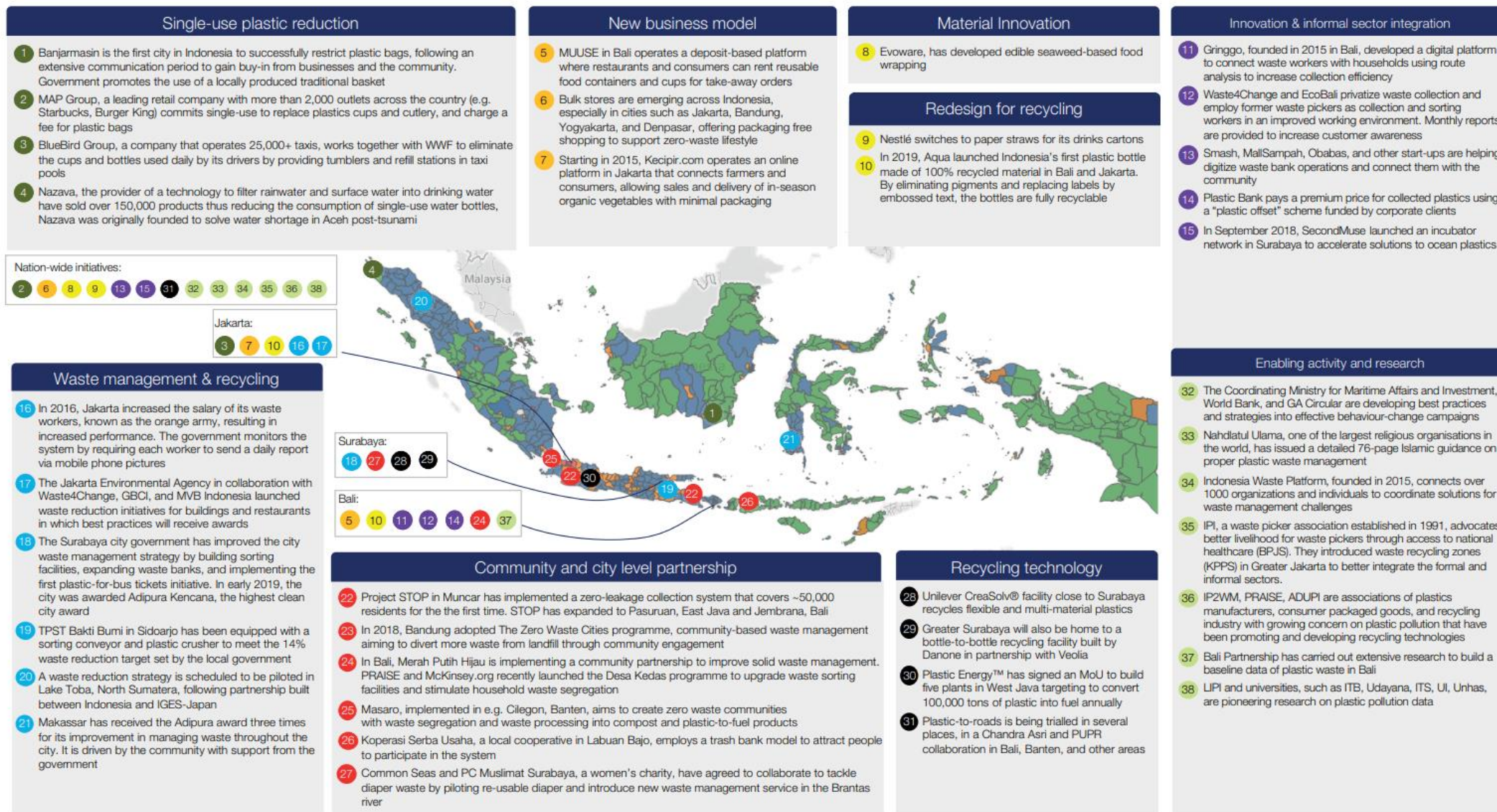
By 2040, achieve plastic pollution-free Indonesia that embodies principles of a circular economy

Summary of National waste management regulations in Indonesia (MoEF 2020)

| | | | | | | | | | |
|---------------------------|--|---|---|---|--|--|--|--|--|
| | | | | | | | | | <div>Ministry of Environmental and Forestry</div> <div>Ministry of Public Works</div> <div>Ministry of Trade</div> <div>Ministry of Industry</div> |
| National Law | UU No. 18 / 2008 Law on Solid Waste Management | UU No. 32/2009 Law on Environmental Protection and Management | | | | | | | |
| Government Regulation | PP No. 81/2012 Government Regulation on Management of Household and Household-like Waste | PP No. 101/2014 Government Regulation on Hazardous Waste Management | DRAFT Government Regulation on Excise on Plastic | DRAFT Government Regulation on Specific Waste Management | | | | | |
| Presidential Regulation | Perpres No. 97/2017 Presidential Regulation on National Policy and Management Strategy of Household Waste and Household-like Waste | Perpres No. 83/2018 Presidential Regulation on Marine Debris Management | Perpres No. 18/2015 Presidential Regulation on Income Tax Facilities for Investment in Certain Business Fields and/or in Certain Regions | Perpres No. 15/2018 Presidential Regulation on Acceleration of Damage and Pollution Control on Citarum River Basin | Perpres No. 35/2018 Presidential Regulation on Acceleration of Development of Waste-to-Energy Installation using Environmentally-sound Technology | | | | |
| Presidential Decree | Keppres No. 61/1993 and No. 47/2005 Presidential Decree on Ratification of the Basel Convention on the Control of the Transboundary Movement of Hazardous Waste and Their Disposal | | | | | | | | |
| Ministerial Regulation | Ministry of Trade Regulation No. 31/2016 on Non-Hazardous Waste Import | Ministry of Public Works Regulation No. 3/2013 on Implementation of Solid Waste Infrastructure and Facilities | Ministry of Environment and Forestry Regulation No. P.75/2019 on Roadmap to Waste Reduction by Producers | DRAFT Ministerial Regulation (MoEF) on Shopping Plastic Bag Reduction | | | | | |
| | Ministry of Trade Regulation No. 48/2015 on General Provisions in the Import Sector | Ministry of Trade Regulation No. 70/2015 on Importer Identification Number | Ministry of Industry Regulation No. 48/2015 on Requirements for Income Tax Facilities Implementation | | | | | | |
| Regional/Local Regulation | Regional/Local Regulations on Single-use Plastics Ban: - Pergub Bali No. 97/2018 | - Perwali Denpasar 36/2018 - Perwali Bogor 61/2018 - Perwali Banjarmasin 18/2016 | - Perwali Balikpapan 8/2018 - Perwali Padang 36/2018 - Perda Purwakarta 37/2016 | | | | | | |

(Source: SWI analysis, 2019)

Over 30 frontline initiatives to stop marine plastic pollution in Indonesia



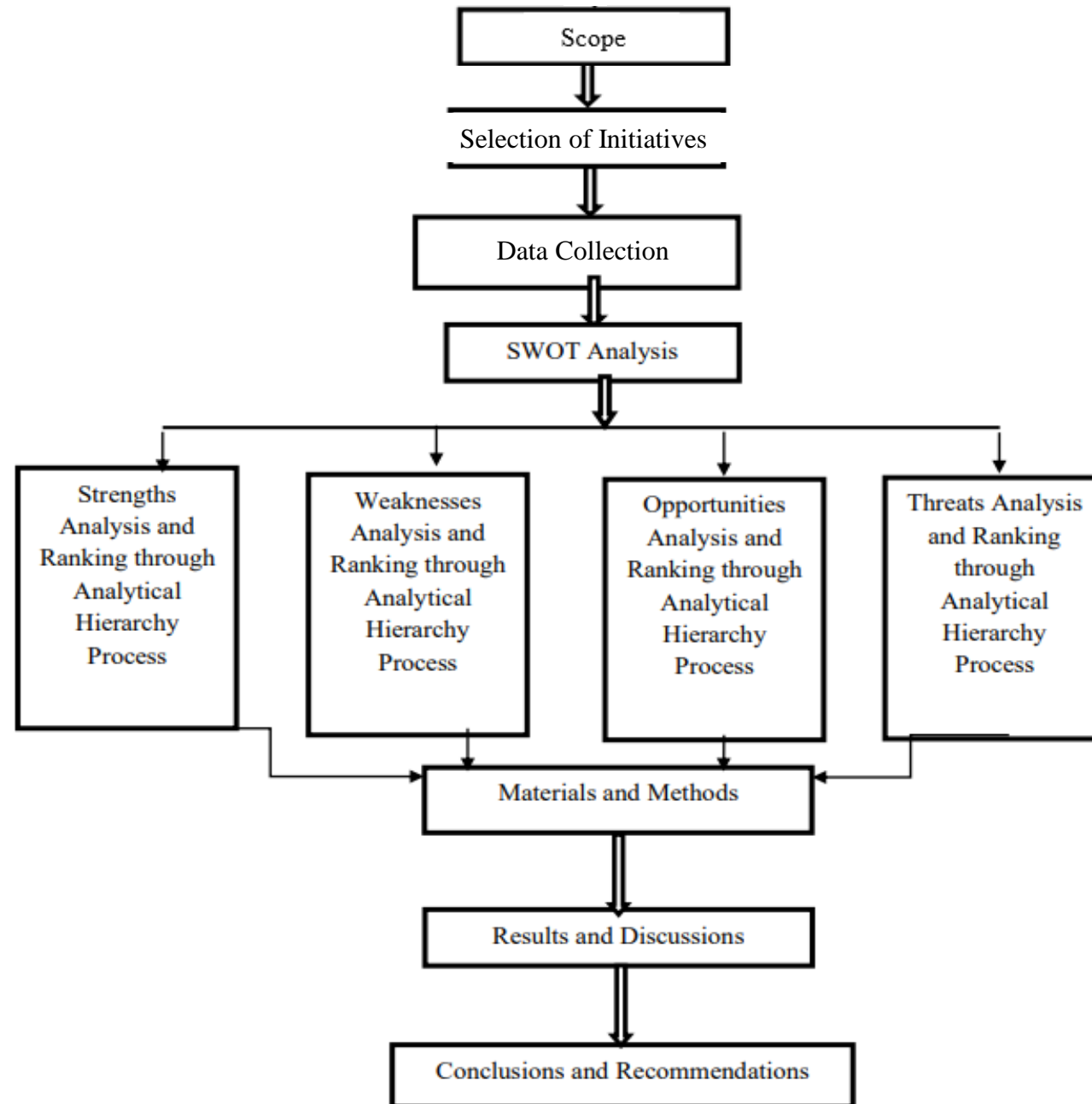
Scope of work

Assessing the sustainability of plastic waste initiatives in Indonesia and anticipating the possibility of **challenges that can arise in the future.**

Sustainable plastic waste management entails:

- the use of material resources efficiently and in an environmentally sound manner operations in the social and ethical context
- being financially sustainable over time
- being strongly supported by governance

Methodology



Selection of initiatives

The selection of initiatives is based on the following criteria:

- all initiatives operate on a **voluntary base**
- **externally funded**
- actively **transfer technology** and **know-how** to regions lacking waste management services and infrastructure.



DESIGN SUSTAINABLE, CIRCULAR WASTE SYSTEMS



WASTE GOVERNANCE



BEHAVIOUR CHANGE



RECYCLABLE SORTING, PROCESSING AND MARKETING



ORGANIC WASTE I



OPTIMISED WASTE COLLECTION



Type 1: Establish a waste management systems

—operated by local authorities

Type 2: Establish waste management systems

—operated by the initiative

Type 3: Plastic Credits

a **transferable certificate** representing the collection of a specified weight (e.g. one kilogram, one metric ton) of plastic waste recovered or recycled that would otherwise have ended up in the natural environment.

purchased by organizations and other end users to take action on their '**plastic footprint**'.

only plastic waste that would not have been collected without the intervention, and would therefore have entered the natural environment, is counted towards the credit.



Type 4: Performing Clean-ups and technology transfer



Data collection

qualitative approach through field observations, questionnaires, and structured interviews.



Sustainability aspects

- Environmental
- Social
- Economical
- Technical
- Institutional

SWOT (Strengths, Weaknesses, Opportunities & Threats)

Strengths & Opportunities

- **Sustainability principles in the mission, vision, and goals** of the initiative and adequate staff exist
- **Contribution to recovering plastic waste** & deliver recyclables to the market **of better quality** with the opportunity to generate income from the sales of materials
- **Align with national** waste management priorities and goals and existing legislation
- Facilitates the **development of new regional legislation** (e.g. enhance regulated producer responsibility mechanisms)
- **New waste management infrastructure** of sufficient capacity
- **Creation of new jobs** in the community
- **Raising awareness** of plastic pollution and **changing the waste management habits** of the local communities to some extent
- Follows a **gender-sensitive approach** to some extent

Weaknesses & Threats

- **Do not sufficiently recover "difficult" to recycle plastics** (e.g. MLPs)
- The present **legislative environment does not ease the operation** of the initiatives (e.g. legislative gaps to implement the high national recycling targets)
- **Lacking cooperation with local authorities**
- **Insufficient monitoring** by local authorities **and reporting** to local authorities
- **Low participation by local households**
- Initiatives **financing** is mainly **based on global external donors, private investment, and sales** of materials to an unstable market.
- The initiatives are **competitive to the informal recycling sector** to some extent.

Internal & External Factors Evaluation (IFAS & EXFAS Technique)

The **weighting technique** was carried out on every aspect/factor of SWOT by assigning a weight between 0.00 and 1.00. If the aspect of each factor (internal/external) summed would result in 1.

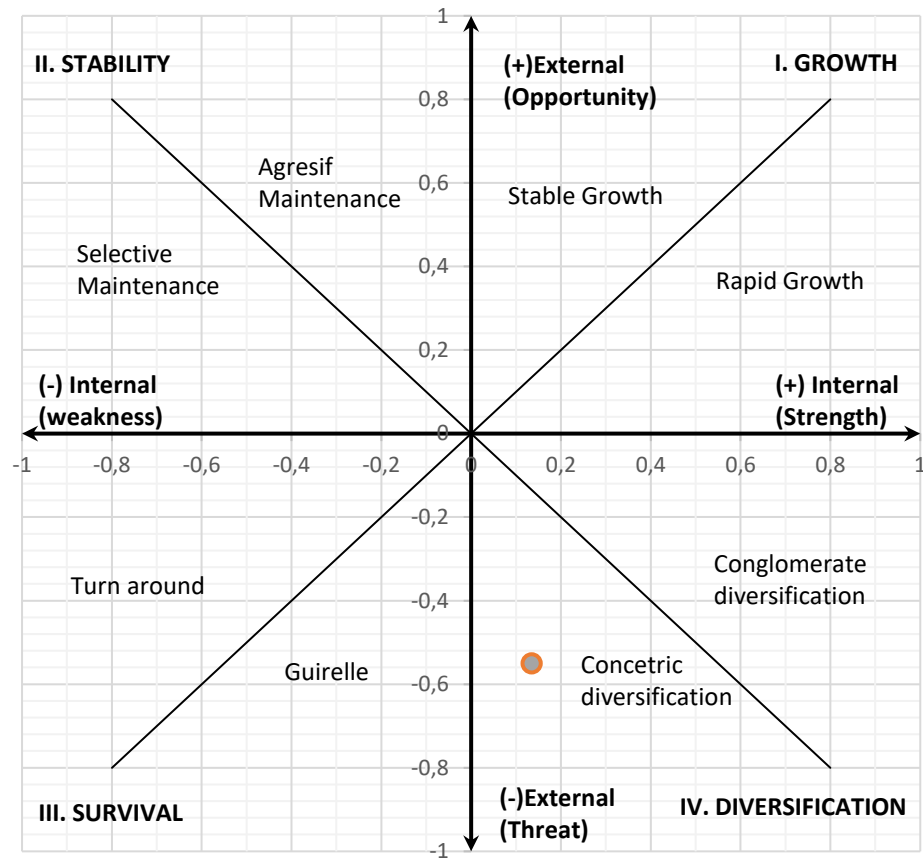
Rating indicated the importance level of each aspect (1 = somewhat important; 2 = important; 3 = very important). Then, the weighted score was multiplied by a predetermined rating.

The sum of each factor is then summed in order to know the **position of the initiative location in the SWOT quadrant** for determining its **present condition and strategy options**.

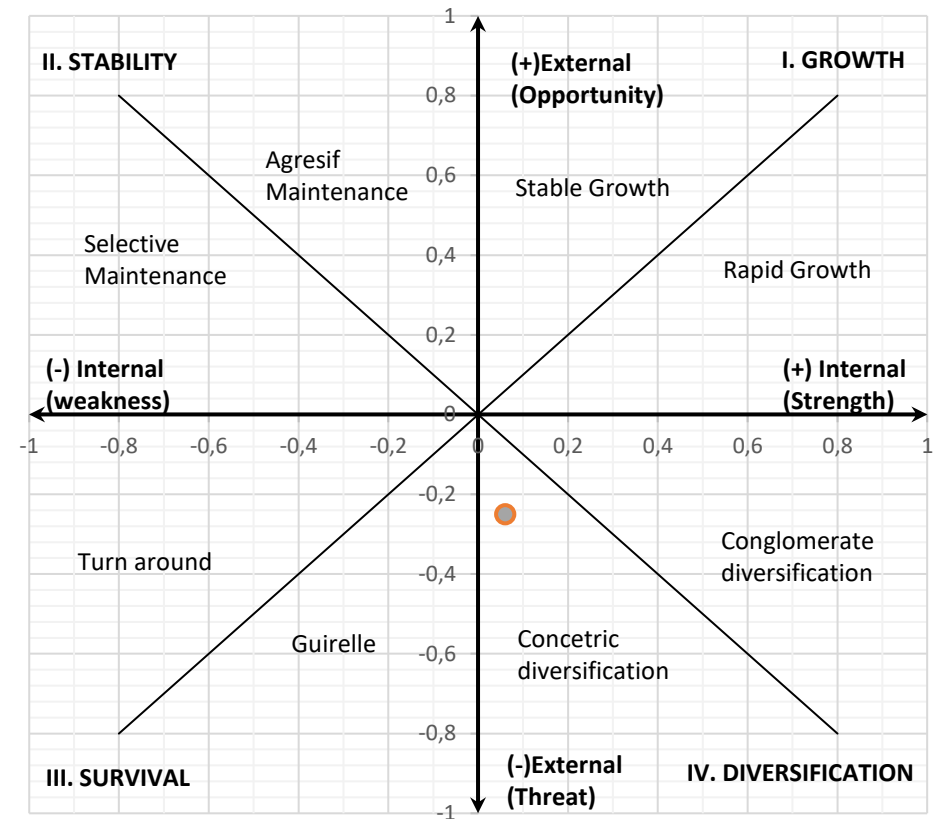
| Initiatives Type 1 - Establish Waste Management System (handed over to local authorities) | Weight | Rating (1,2,3) | Score |
|---|--------------|----------------|--------------|
| INTERNAL FACTORS | | | |
| Strengths | | | |
| Sustainability principles in mission, vision and goals of the initiative exists | 0,050 | 3 | 0,15 |
| Staffing to realise its vision and mission exists | 0,030 | 2 | 0,06 |
| Contribution in recovering of plastic waste | 0,075 | 2 | 0,15 |
| Cooperation/integration with local authorities | 0,060 | 3 | 0,18 |
| Align with national waste management priorities and goals and existing legislation | 0,070 | 3 | 0,21 |
| Focus on changing the waste management habits of the local communities | 0,055 | 2 | 0,11 |
| Follows a gender sensitive approach | 0,030 | 1 | 0,03 |
| New waste management infrastructure of sufficient capacity | 0,070 | 2 | 0,14 |
| Feasibility/baseline studies conducted prior to implementation | 0,030 | 2 | 0,06 |
| Technical operation follows environmental standards | 0,030 | 1 | 0,03 |
| Sum | 0,500 | | 1,12 |
| Weaknesses | | | |
| Insufficient reporting to local authorities | 0,055 | 1 | 0,055 |
| Low participation by local households | 0,075 | 2 | 0,15 |
| No focus on changing consumption habits of local communities | 0,045 | 3 | 0,135 |
| Local communities need to be informed and trained more often | 0,070 | 1 | 0,07 |
| Competition with the informal recycling sector | 0,070 | 3 | 0,21 |
| Residues disposed to unregulated landfill sites | 0,055 | 3 | 0,165 |
| Collection system requires re-design | 0,060 | 1 | 0,06 |
| Does not sufficiently recover "difficult" to recycle plastics (e.g. MLPs) | 0,070 | 2 | 0,14 |
| Sum | 0,500 | | 0,985 |
| EXTRENAL FACTORS | | | |
| Opportunities | | | |
| New jobs are created in the community | 0,060 | 2 | 0,120 |
| Delivers recyclables to the market of better quality & opportunity to generate income from the sales of materials | 0,120 | 2 | 0,240 |
| Secure financial resources for the continuation of the initiative | 0,110 | 2 | 0,220 |
| Opportunity for integration of the IRS in the formal waste management system | 0,090 | 1 | 0,090 |
| Scalable operational model in terms of capacity | 0,060 | 1 | 0,060 |
| Facilitates the development of new regional legislation | 0,060 | 2 | 0,120 |
| Sum | 0,500 | | 0,850 |
| Threats | | | |
| Capital costs and costs of operation depends in majority upon external donors | 0,200 | 3 | 0,600 |
| No funds allocated internally to address sustainability aspects beyond the immediate implementation | 0,050 | 2 | 0,100 |
| Inefficient collection scheme may create negative backlash from households | 0,050 | 2 | 0,100 |
| Existing legislation does not ease implementation of the initiative (e.g. legislative gaps to implement high recycling targets) | 0,100 | 3 | 0,300 |
| Operation of the initiative will be handed to local government that has limited capacity (technical and other) | 0,100 | 3 | 0,300 |
| Sum | 0,500 | | 1,400 |

IFAS-EFAS quadrants

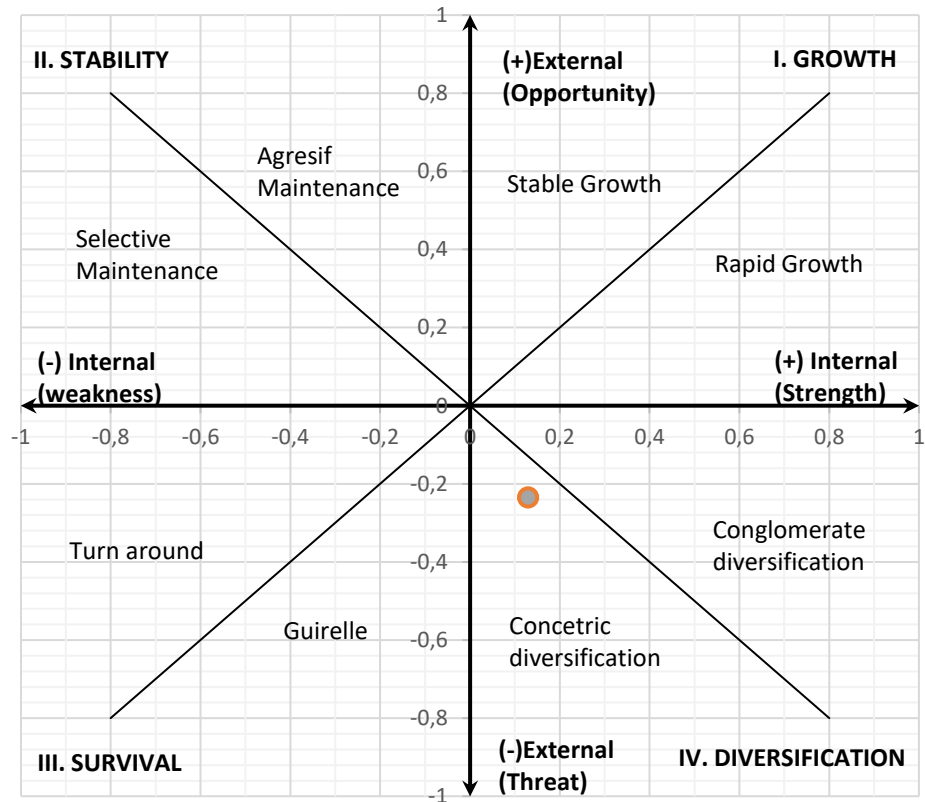
Type 1



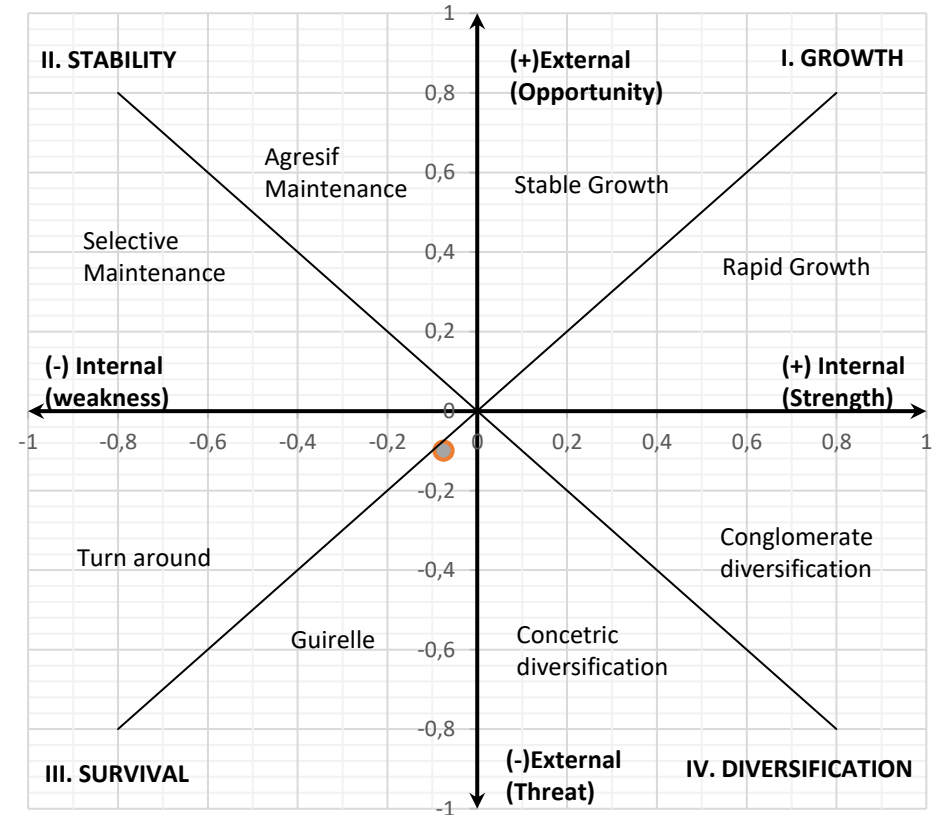
Type 2



Type 3



Type 4





Conclusions/Recommendations

Plastic waste management **cannot be addressed with individual efforts** but needs **a holistic and integrated approach**.

Certainly, actions on the individual or community level do not necessarily change the whole situation in the country.

Significant contributions from the government and industry are required to solve the plastic crisis in Indonesia.



Interaction with the local government

- The initiatives should use the opportunity to put pressure on the government for establishing an **institutionalized and legislated waste management system** where producers are held responsible for the end-of-life phase of products in a transparent, holistic, and systematic manner.
- Enhance **interaction with local government** and establish **regular communication and cooperation**, including **frequent monitoring** of the authority and **reporting** of the initiative.



Engage local communities

- Enhance participation and recovery of all plastic from local communities by **providing incentives** and by implementing **frequent raising awareness and communication campaigns**.
- Existing rules should be socialized to the community to **create a sense of concern and responsibility** in waste management.



Inclusive to the Informal Recycling Sector (IRS)

- Utilizing the **existing structures** of the informal recycling sector and working in harmony.
- **Lower the barriers** to the integration of the IRS within the structure of the initiatives, by providing **easy access** to apply for work, **provide incentives** for the IRS to work on standard contracts and social benefits.



Improve financing

Securing funds :

- Increase **sales of recyclables**, by expanding the existing collection networks and securing good quality of recyclable materials.
- Enhancing nationwide mandatory frameworks such as **Extended Producer Responsibility (EPR) regulation**, so that producers bear the costs of waste management of applications and products including plastics put on the market.
- Complementary to **public funding** and **payment by households**



Managing difficult-to- recycle plastics

Urgent demand to find legitimate solutions for difficult-to-recycle plastics such as MLPs.

- The utilization of **proven techno-economic sustainable applications**
- Following the waste hierarchy **co-processing** and after that **landfill** must be considered the **last resort**

For more information

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