ADB

UN environment programme

COBSEA
COORDINATING BODY ON THE SEAS OF EAST ASIA

BANGKOK PLASTICS WEEK

9–12 October 2023 • Bangkok, Thailand

BANGKOK PLASTICS WEEK

9–12 October 2023 • Bangkok, Thailand

Plastic Waste Data Collecting Approaches and Experiences

Marie GOUTTEBROZE

Project Manager - ISWM & PW specialist

SEURECA VEOLIA

BANGKOK PLASTICS WEEK

9–12 October 2023 • Bangkok, Thailand

Presentation Outline

1. Introduction
2. Plastic value chain
3. Data collection and monitoring methodology : approaches and examples

Introduction

Monitoring … to understand, evaluate and improve

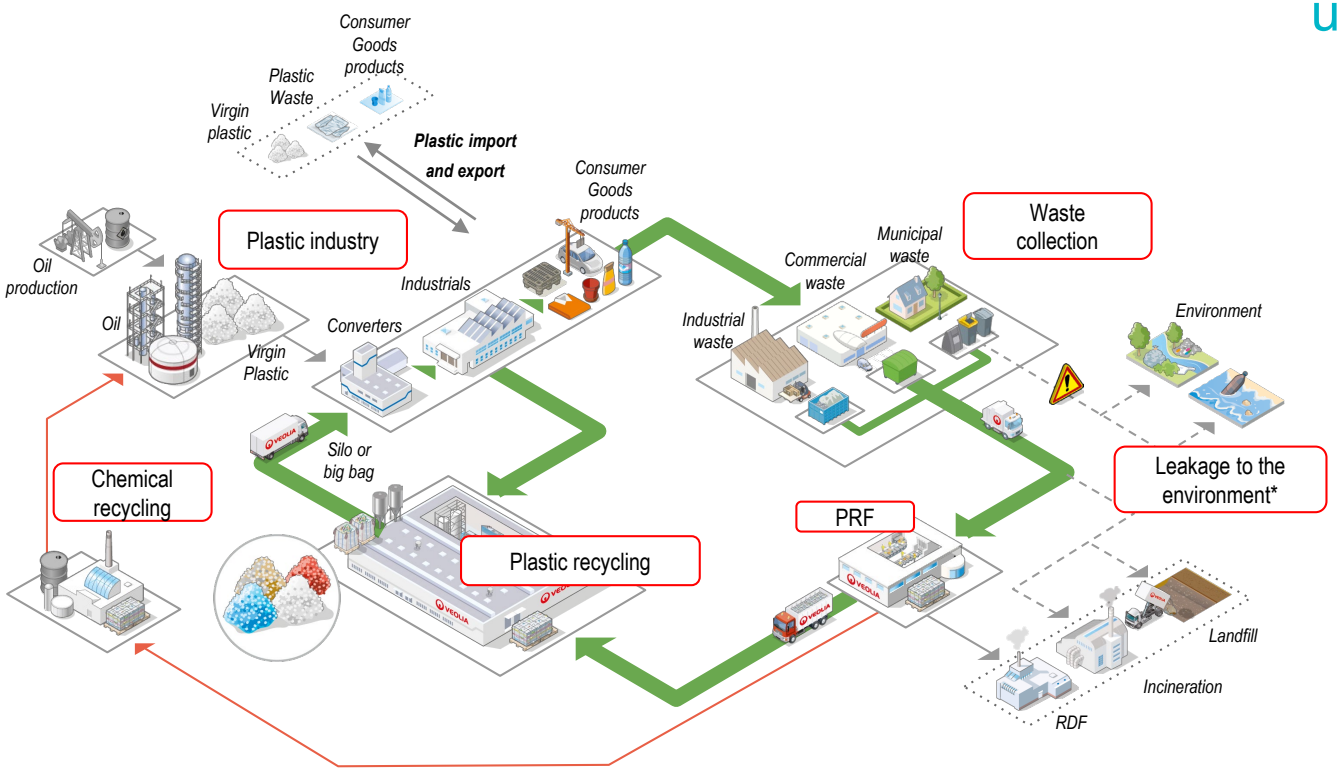
Data collection is the process of systematically gathering quantitative and/or qualitative data used for purposes of monitoring, evaluation, and/or learning

Objectives :

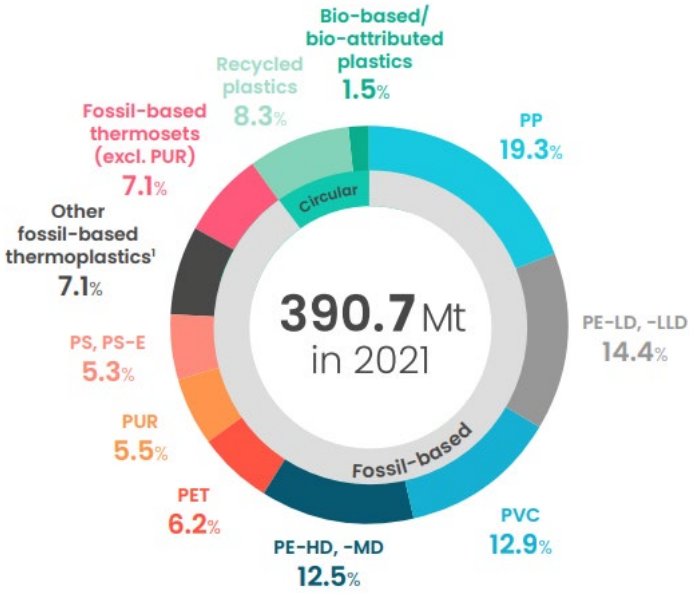
- Share feedbacks of previous and ongoing projects
- Share good practices and cases studies

Plastic Value Chain - General overview

The plastic value chain is complex and involved numerous stakeholders…



… the complexity is enhanced by the fact that there are also a variety of plastic, with different usage, technical characteristics and value…



2021 Distribution of the global plastic production by type (PlasticEurope)

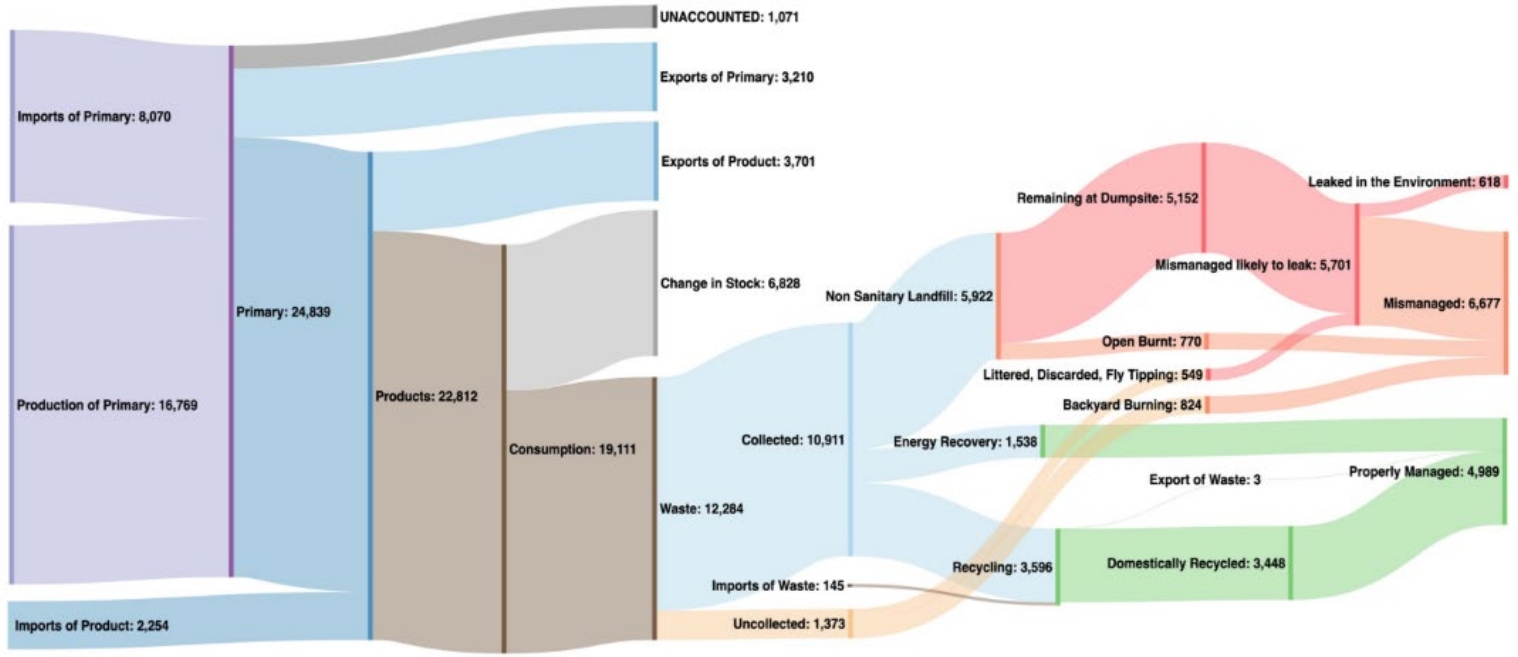
… which makes difficult to monitor !

* Leakage of plastic can happen along the entire plastic value chain. However, most of the leakage originates from unmanaged or mismanaged plastic waste

Plastic Value Chain - General overview

Plastic waste flow at National or City level

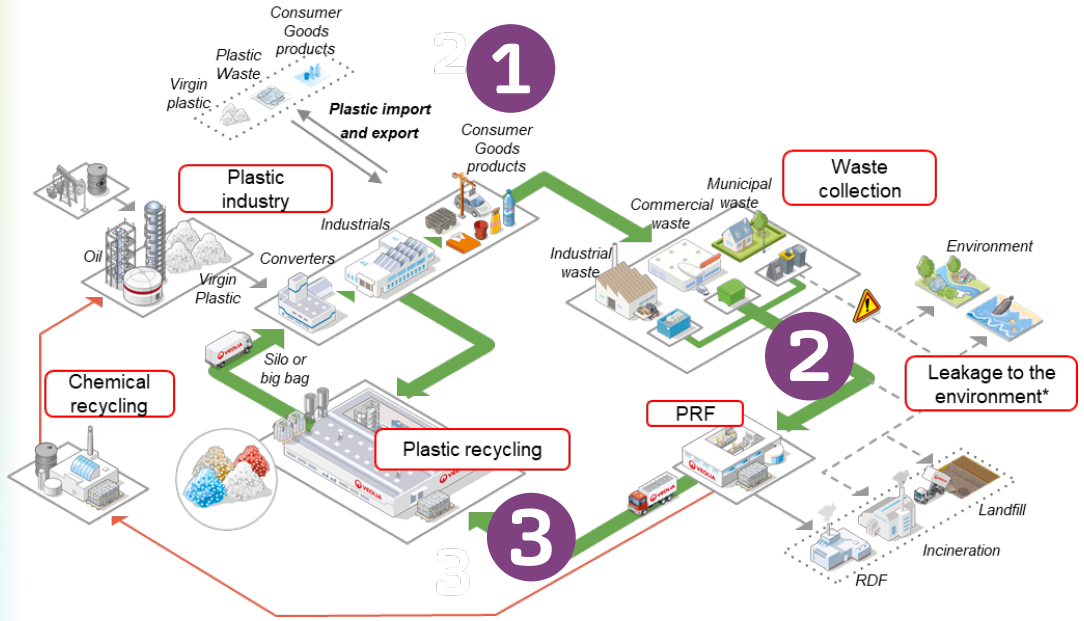
Building a general understanding of the **plastic waste flow through MFA**, at national or city level is a powerful to understand part of the challenges in the system…



… but it requires a large set of reliable data, in particular at the national level, if we want to take into account geographical disparities.

Plastic Value Chain – Monitoring

What do we want to monitor and why ?



What ever the tool/methodology used to map the system, there is a set of basic data data that is needed to understand the plastic waste value chain

1 Plastic products production

- Objective : Monitoring the quantity and type of plastic products put on the market :
  - Being able to define ratio of plastic waste collected and recycled
  - Support EPR schemes and/or taxes schemes, …
- Main actors concerned : Plastic good producers & sellers, National government

2 Plastic waste generation and management

- Objective : understanding and reporting on plastic waste quantity and their management
- Main actors concerned : National / Local government, SWM operators

3 Plastic recycling

- Objective : Monitoring the quantity and quality of recycled waste / traceability of the recycled waste
- Main actors concerned : Recyclers, National government

Data collection and monitoring methodologies

Feedback on Gathering information on waste generation

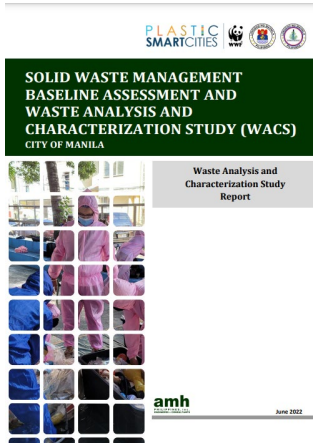
Waste generation is usually estimated based surveys and characterization (MSW)

Challenges :

- Non coordinated studies and surveys done on projects basis
- Non harmonized characterization study
- Difficulties in monitoring the waste generated by commercial and industrial businesses

Feedbacks from fields surveys :

- Training of the enumerates/sorters on the type of plastics !
- Defining a characterization protocol !



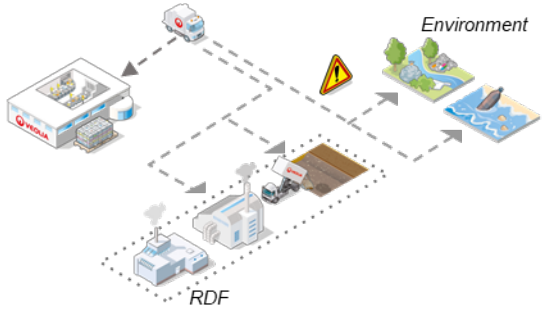
Good practices / case study :

- National characterization methodology and sampling methodology
- National waste characterization campaign – consolidation at national level
- Analysis of the main plastics types
- Mandatory reporting on waste data for large industrial activities/commercial activities

Data collection and monitoring methodologies

Feedback on Gathering information on waste management system

Quantity and type of waste collected and its destination

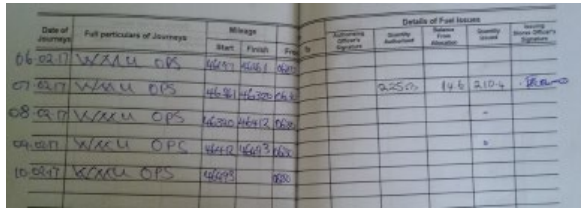


Challenges :

- Lack of monitoring policies and monitoring equipment – lack of data consolidation
- Informal players in the recycling businesses (collection/sorting/recycling)
- Reluctance for the private actors to share data

Feedbacks from fields surveys :

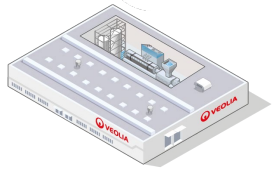
- Data may exist – but not consolidated, not harmonized



Good practices / case study :

- Monitoring at the collection and treatment stage to cross check data, even if it estimates
- Including waste management practices in population census can provides useful overview and long term trends at the country scale (access to waste collection, segregation, method of disposal, …)

Data collection and monitoring methodologies



Feedback on Gathering information on plastic recycling

What type and quantity of plastics are sent to recycling ? How much is actually recycled ?

Challenges :

- While plastic is weighted, the information is rarely shared by the recyclers, as it is considers as confidential data
- Yield of the recyclers are rarely taken into account
- Diversity and geographical spread of the recyclers

Feedbacks from fields surveys / past experience :

- At city scale, it requires identification of the recyclers, from feedback of downstream and
- Reluctance for the private actors to share data : working with recyclers association, industry association, …

Good practices / case study :

- Registering of plastic recycling activity with capacity and annual quantity/quality treated
- Encouraging recyclers associations to facilitate communication but also engagement

Data collection and monitoring methodologies

Feedback on Gathering information on the informal sector

What type and quantity of plastics are collected ? How is chain working ? How to improve it ?

Challenges :

- By definition, the informal sector is not registered, really difficulties in quantifying its role
- Intervention at different stages of the chain : collection, sorting, recycling

Feedbacks from fields surveys :

- Different approaches can used : snow ball rolling approach, local NGOs, local authorities
- Field study should be used to collect data related to quantity and quality, but also on social aspects (working conditions, gender, …)

Good practices / case study :

- Acknowledgement and registration of the informal collectors
- Association / cooperative of waste pickers

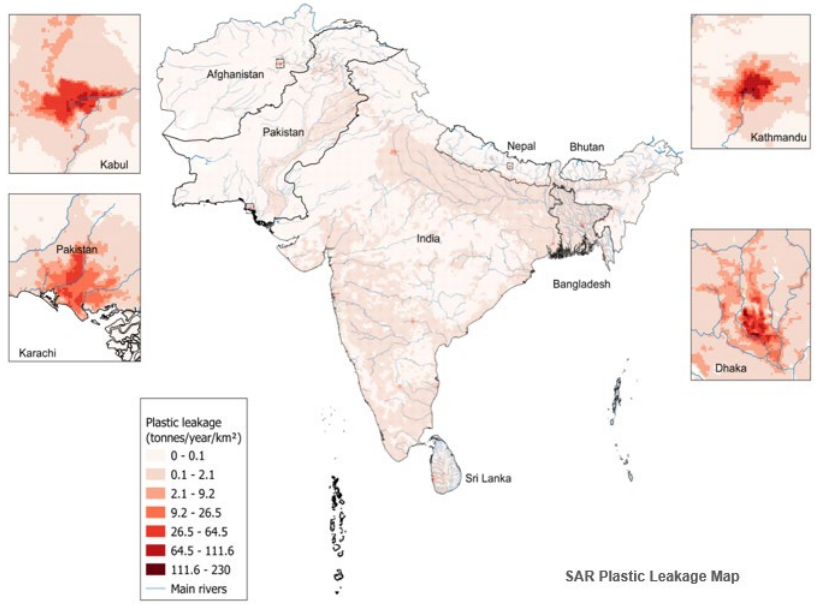
Plastic Value Chain – Monitoring Plastic Pollution

Objectives :

- Quantifying plastic pollution to assess the magnitude of the problem and evaluate the impact of policies and strategies
- To plan cleanup strategy
- Understand the origins of the leakage and improve the system

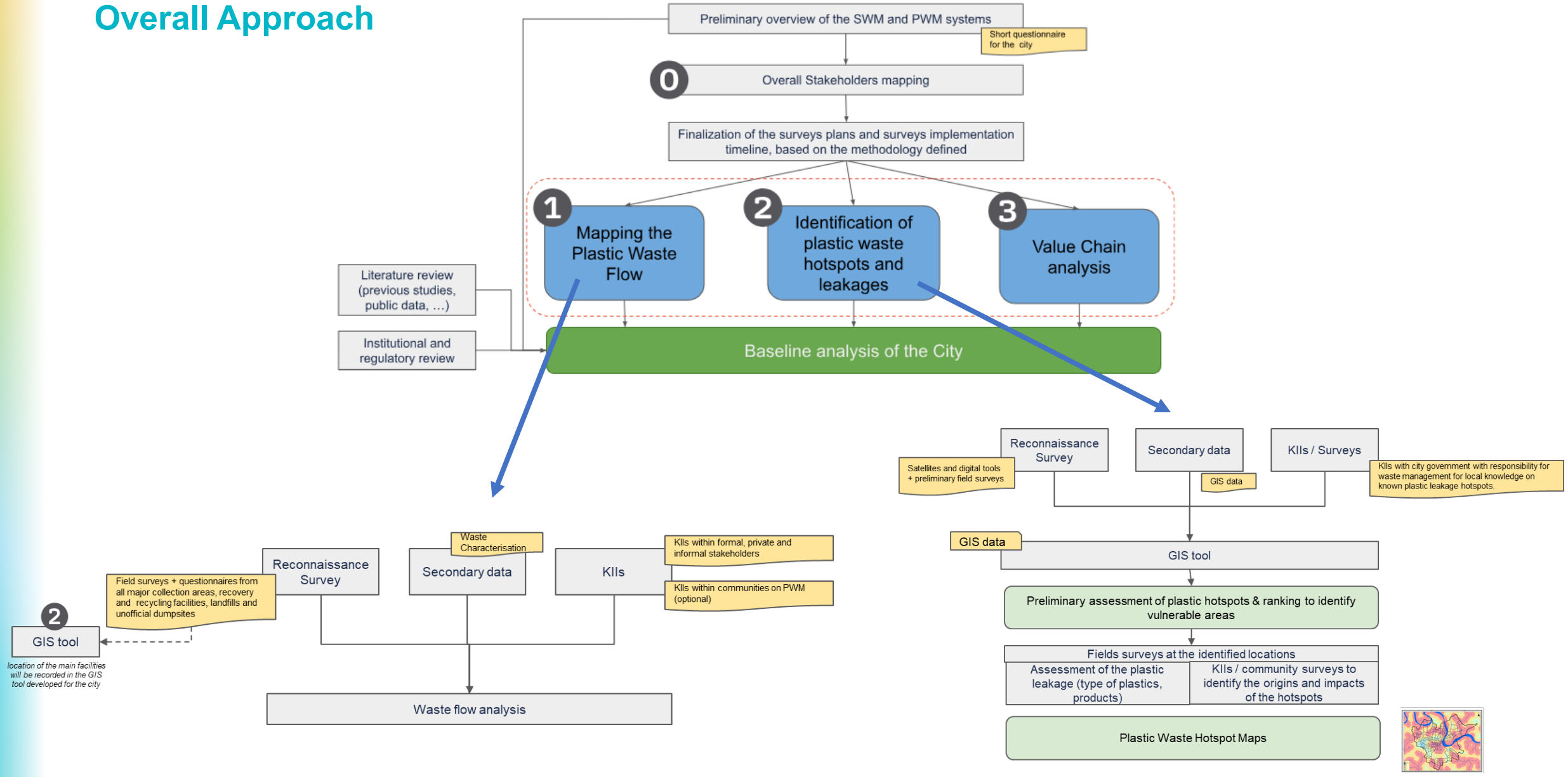
2 complementary approaches :

- Theoretical approach : estimates of plastic leakage in the environment
- Monitoring of plastic pollution on the field



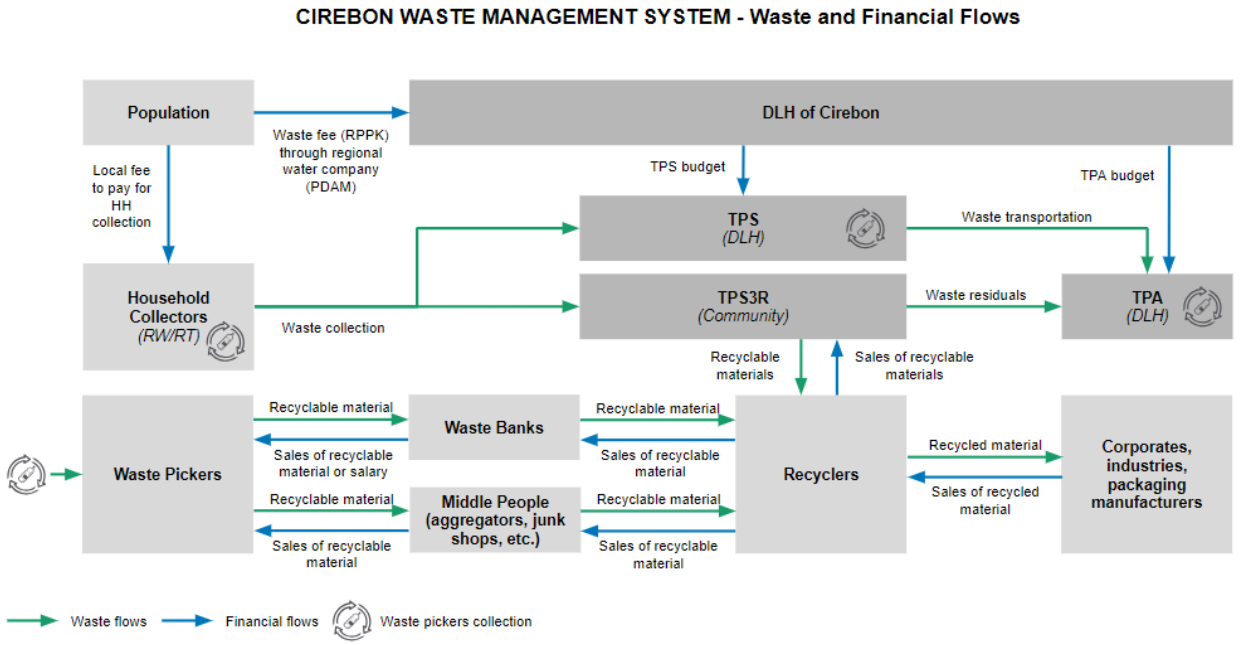
Example of Cirebon city assessment (Indonesia)

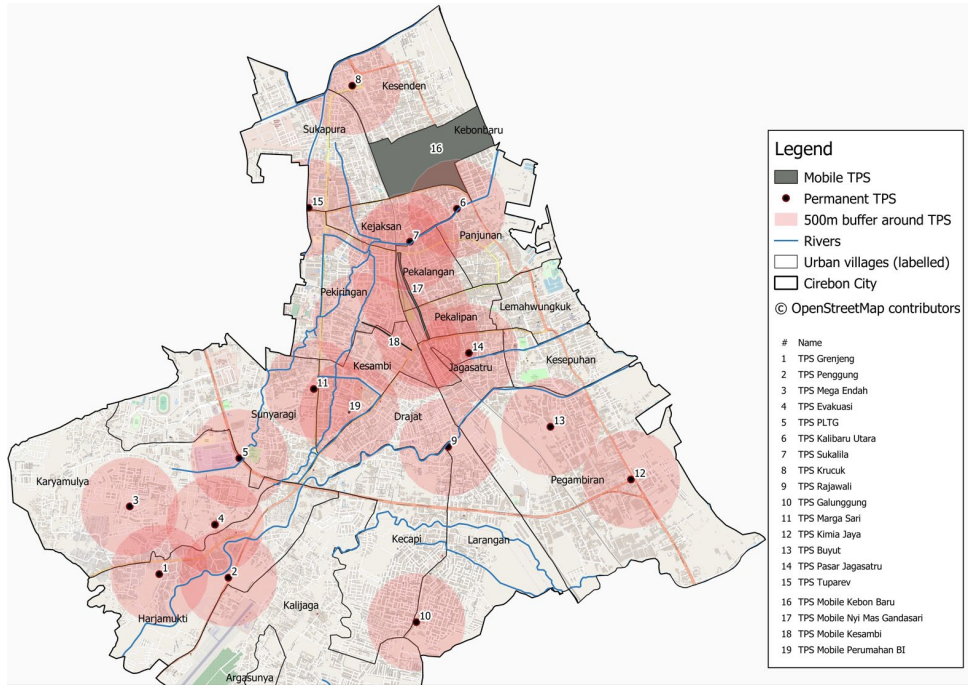
Overall Approach

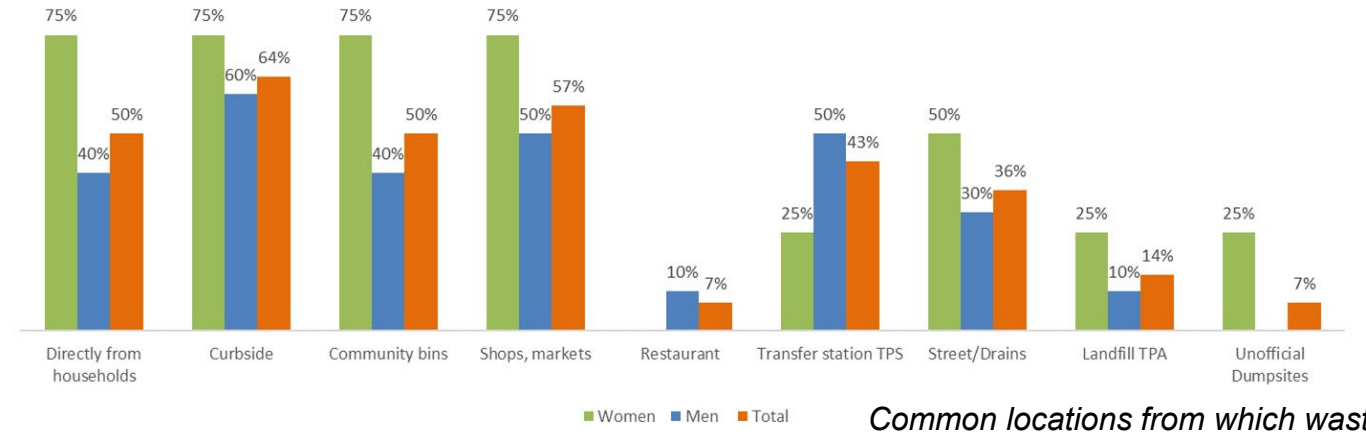


Example of Cirebon city assessment (Indonesia)

First findings and results







Common locations from which waste pickers collect waste

Conclusion

- Monitoring is essential to globally improve plastic management, from its production up to its recycling or safe disposal
- Implementing a culture of data collection and reporting at the local & national level and ensuring data reliability is key to improve monitoring, and finally reducing plastic pollution.
- Digital solutions can be powerful tools to support the data collection process and its analysis
- However, it would need be supported by a strong institutional/regulatory framework and increased capacities

ADB

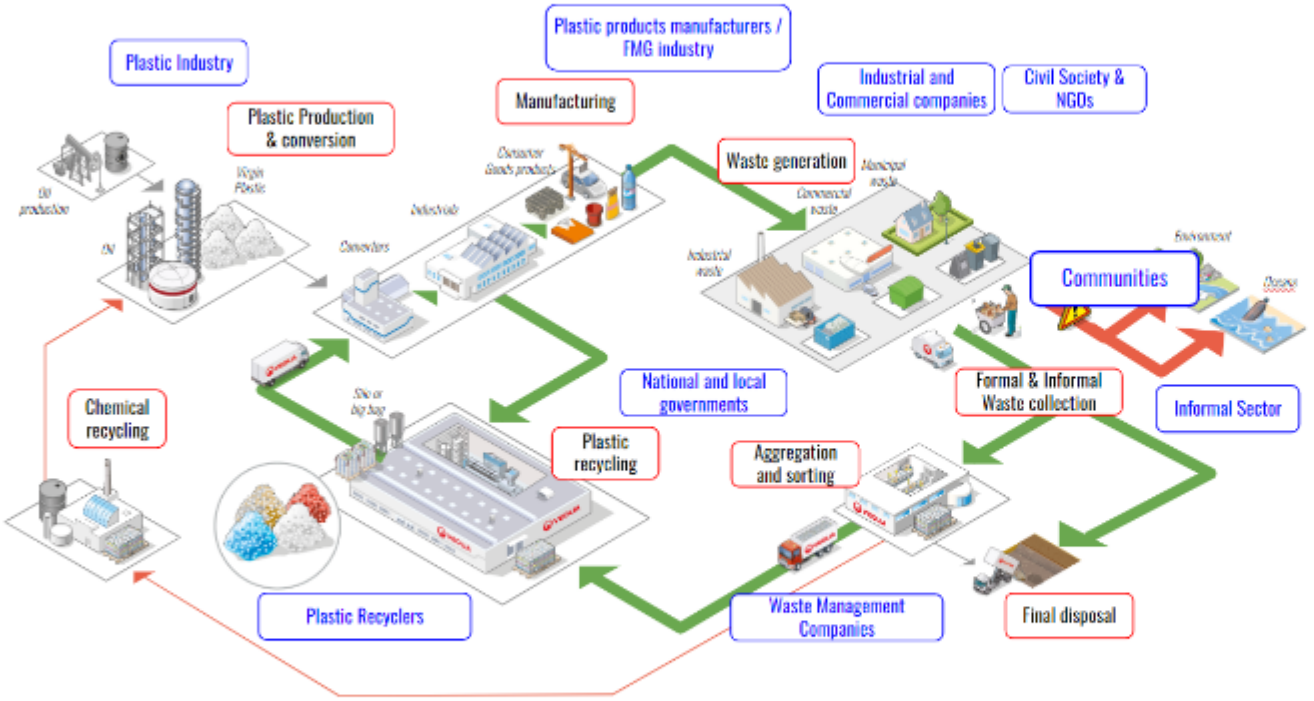
UN environment programme

COBSEA
COORDINATING BODY ON THE SEAS OF EAST ASIA

THANK YOU!

Key stakeholders along the plastic chain

KIIs on Plastic industry and manufacturers :
- Type of plastic and products manufactured 3



Communities surveys on :
- SWM and PWM (optional) 1
- Leakage sources and origins 2
- Behaviour / perception
- Social / gender aspects

Informal sector surveys (KIIs) on :
- Localization of main informal collection / sorting points 2
- Quantity / Value 1 3
- Social / gender aspects

Surveys at targeted hotspots on :
- Assessing the type of plastics discarded 2
- Leakage sources and origins
- Social aspects / perceptions

Formal Waste Management KIIs on :
- Quantity & type of PW collected 1
- Sources of PW (HH, businesses…) 2

Recyclers on :
- Localization 2
- Quantity & type of PW treated/ sold 1
- Prices / value 3

Main SWM Infrastructures on :
- Localization 2
- Quantity & type of waste treated 1