OPTOCE

OCEAN PLASTIC TURNED INTO AN OPPORTUNITY IN CIRCULAR ECONOMY

VIEW ON CO-PROCESSING OF PLASTIC WASTE IN THE CEMENT INDUSTRY

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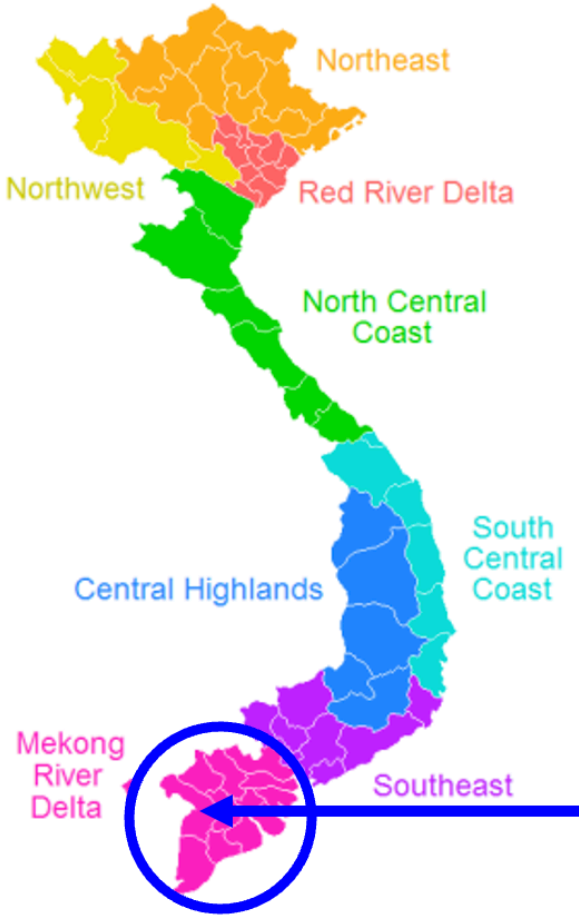
- THE WASTE SAPERATION AT SOURCE IN LONG AN PROVINCE & SINGLE-USE PLASTIC WASTE
- THE NEED FOR INCREASING CO-PROCESSING OF NON-RECYCLABLE PLASTIC WASTE IN CEMENT INDUSTRY

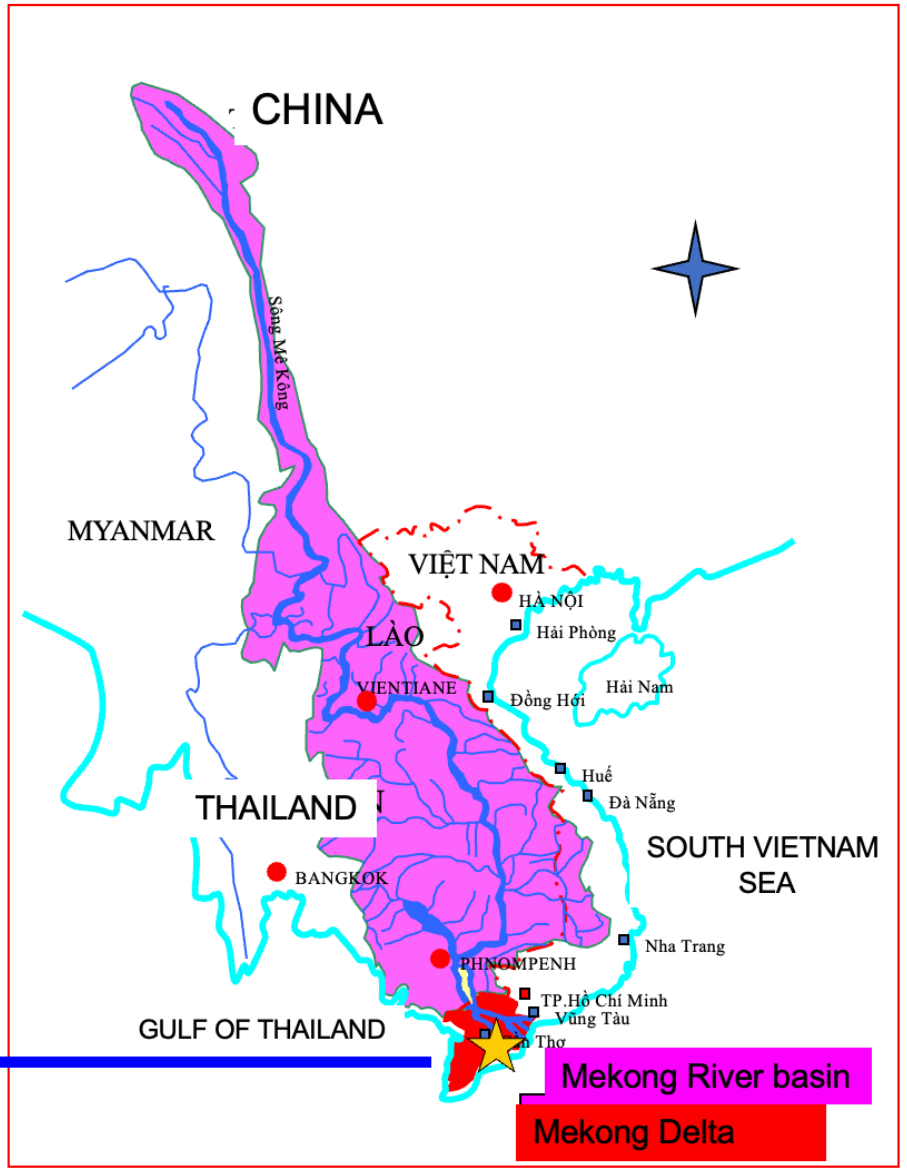
Marine Litter, and especially plastic waste, has been identified as a major environmental issue during the last years. More than 80% of the plastics entering the sea is stemming from land-based sources.

Rivers and waterways are the most important entry paths as they transport waste thrown or flushed into the rivers and dumped at their shores into the oceans

The Mekong River is amongst the most important entry paths for marine litter worldwide.

WWF has therefore selected the Province of Long An in the Mekong Delta as a model area.





Project:

REDUCTION OF MARINE LITTER BY IMPROVED WASTE MANAGEMENT MEASURE IN THE MEKONG AREA

Pilot in Tan An city - Long An province

4825 households

19,017 people

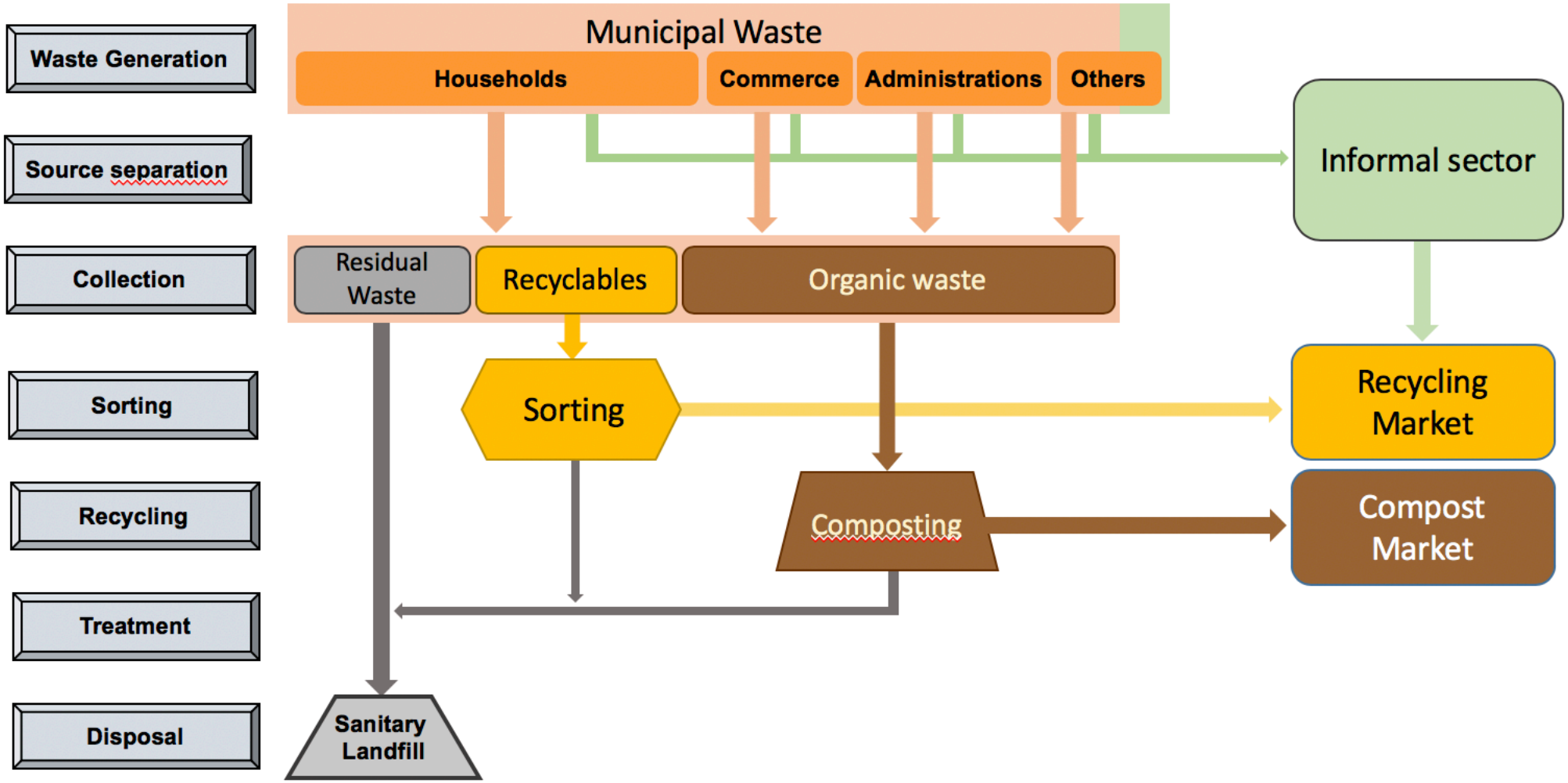
WASTE IN LONG AN

Garbage stagnates at the treatment plant, unable to be handled in time

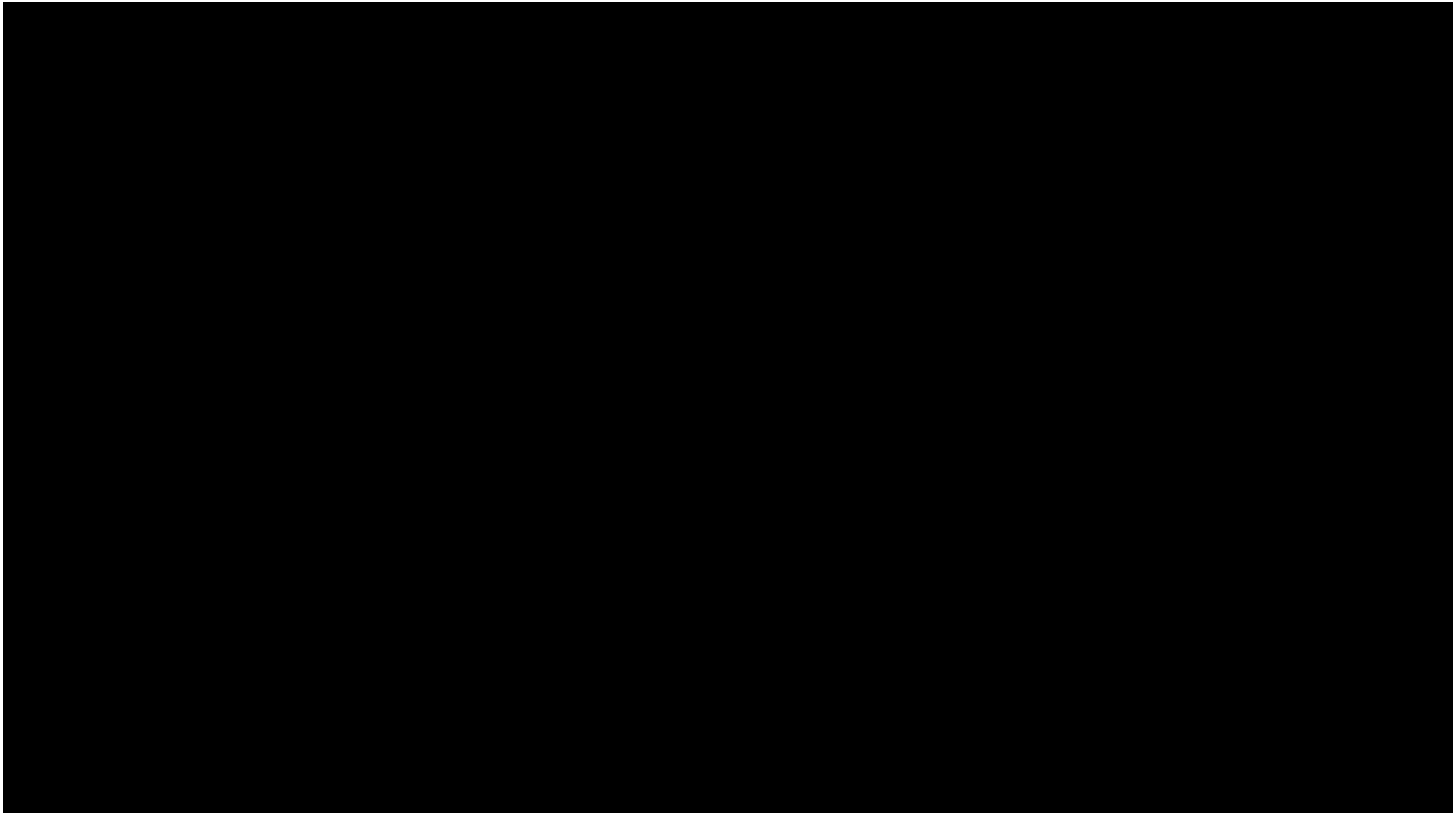
WASTE IN THE SOLID WASTE TREATMENT PLANT

Segregation at source and separate collection are essential for a strategy of comprehensive waste utilisation

Comprehensive utilization of waste



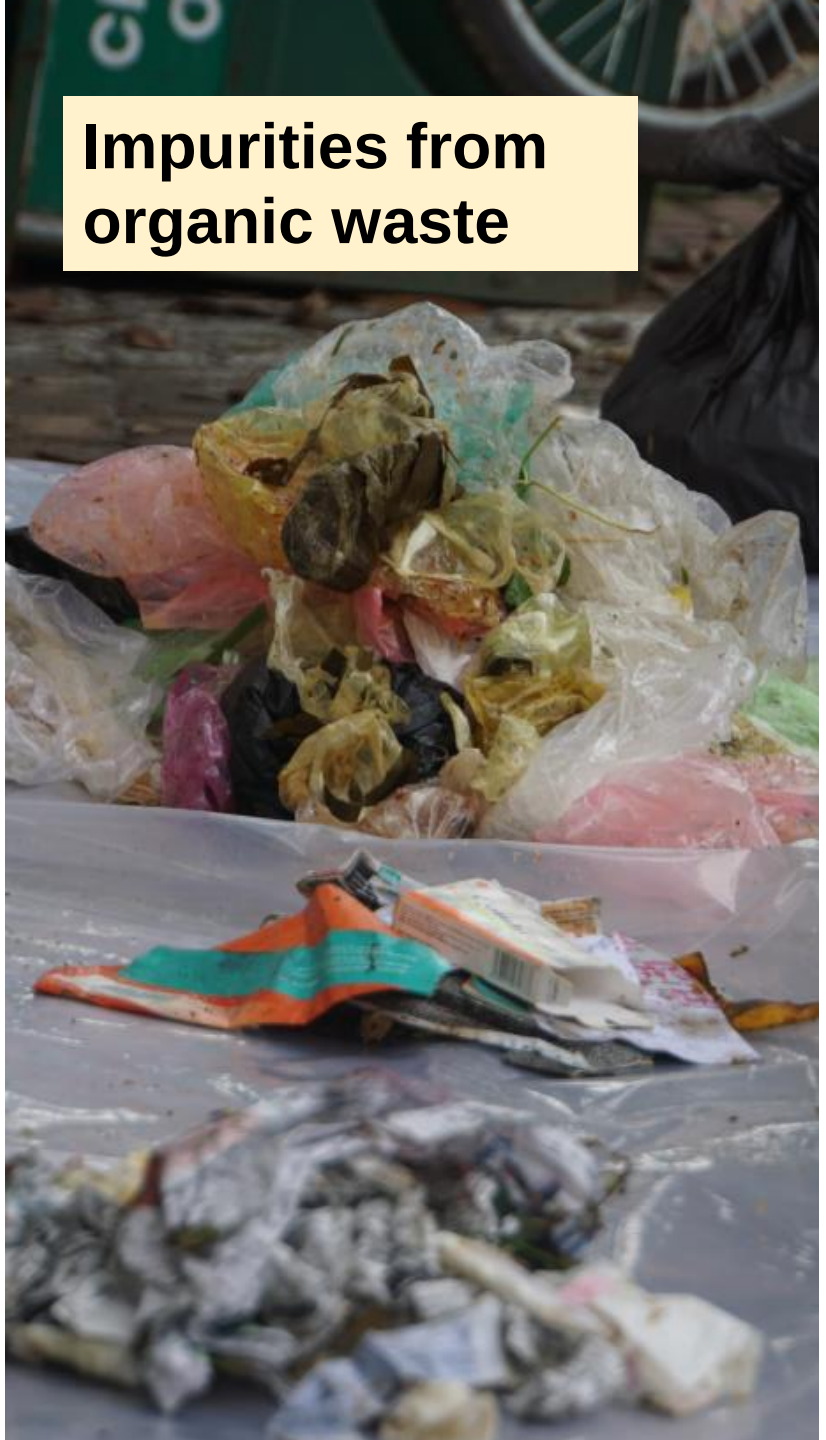
SHORT VIDEO OF WASTE SAPERATION PROJECT IN LONG AN




Post-sorting
residual waste
15
65

WASTE AUDIT

Unsold plastic



Impurities from organic waste

Plastic packaging/ multilayer packaging

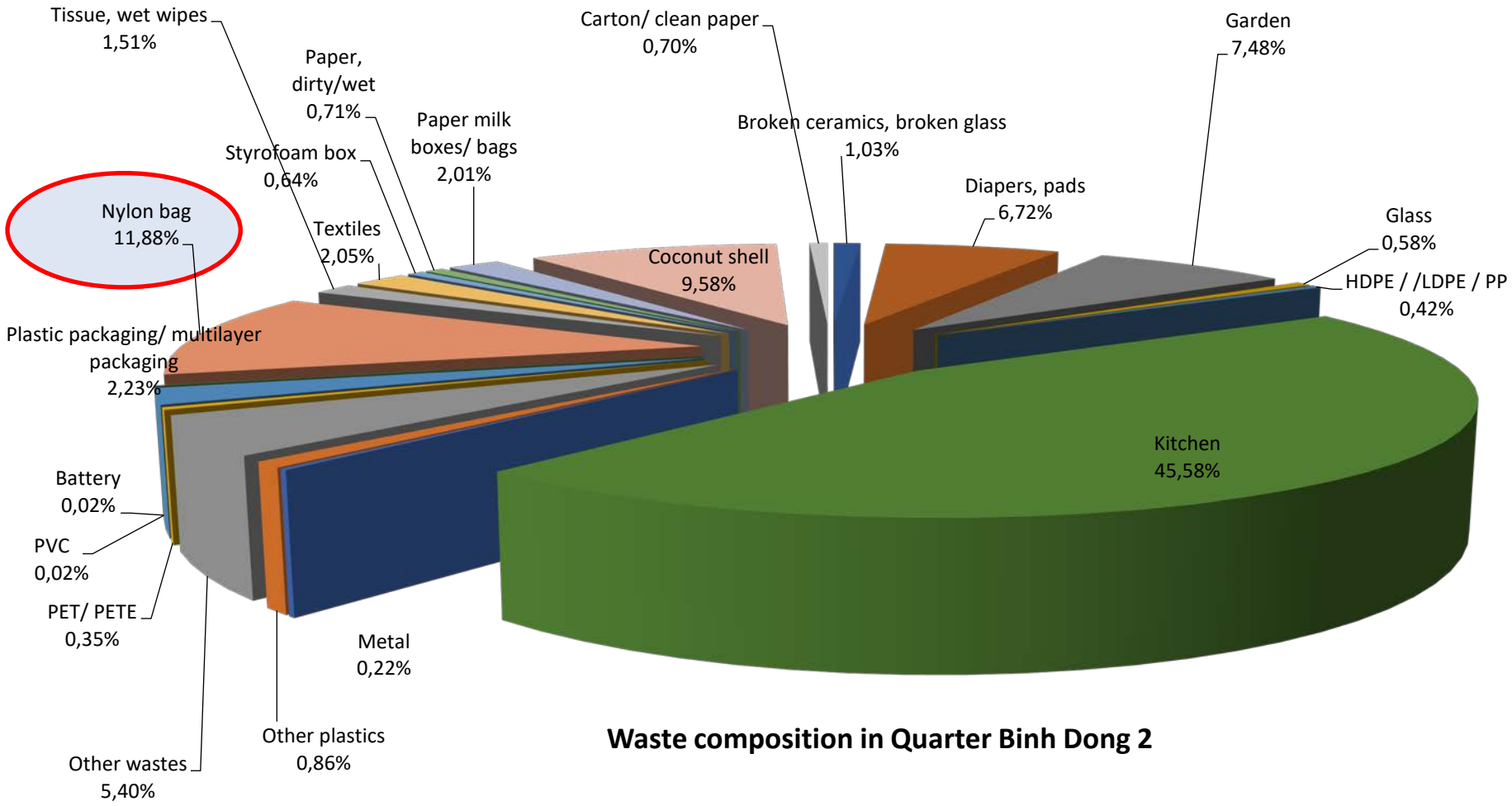
Styrofoam boxes (Poly styrene)

THE PROBLEM OF ONE-USE PLASTIC WASTE

Unsold/unmarketable

non-recyclable plastics

TÂN AN CITY: ~ 15 TONS/DAY
PROVINCE: ~ 83 TONS/DAY
MD: ~ 1000 TONS/DAY



Waste composition in Quarter Binh Dong 2

SINGLE-USE PLASTIC

- *Plastic Pollution Diagnostics* (The World Bank, 2022)

The study, which included field surveys of riverbank and coastal sites, found that:

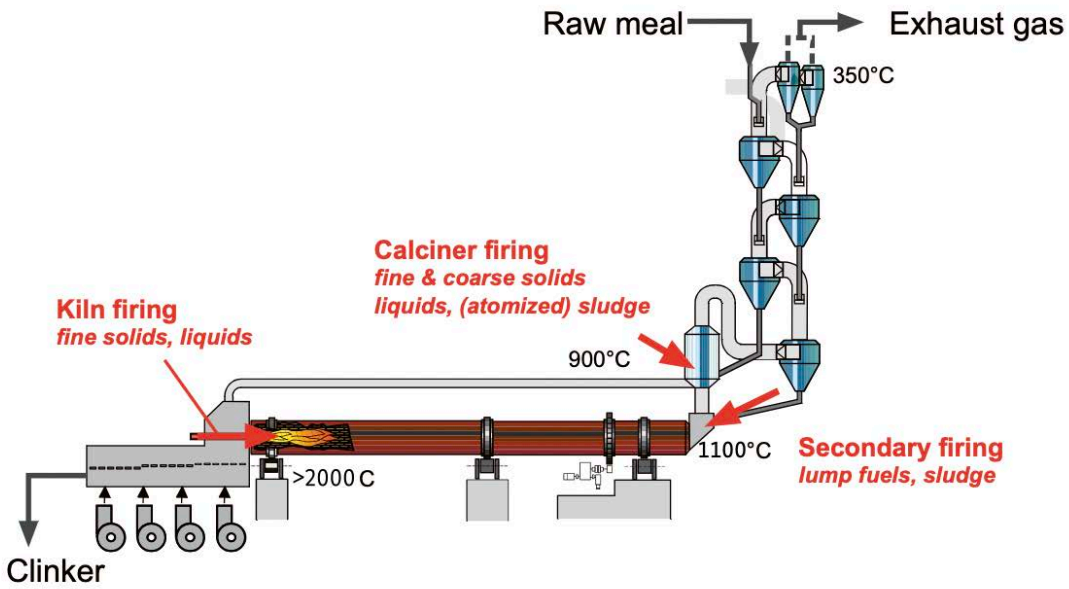
Single-use plastic (SUP) items accounted for **72 percent** (in number) of the total plastic waste identified at riverbanks and **52 percent** (in number) of the total plastic waste identified at coastal sites in the field surveys.

Plastic bags and their fragments, Styrofoam food containers, and straws were identified as the most abundant SUPs in the environment.

THE NEED FOR INCREASING CO-PROCESSING OF NON-RECYCLABLE PLASTIC WASTE IN CEMENT INDUSTRY

Advantages of cement clinker kilns in waste co-processing:

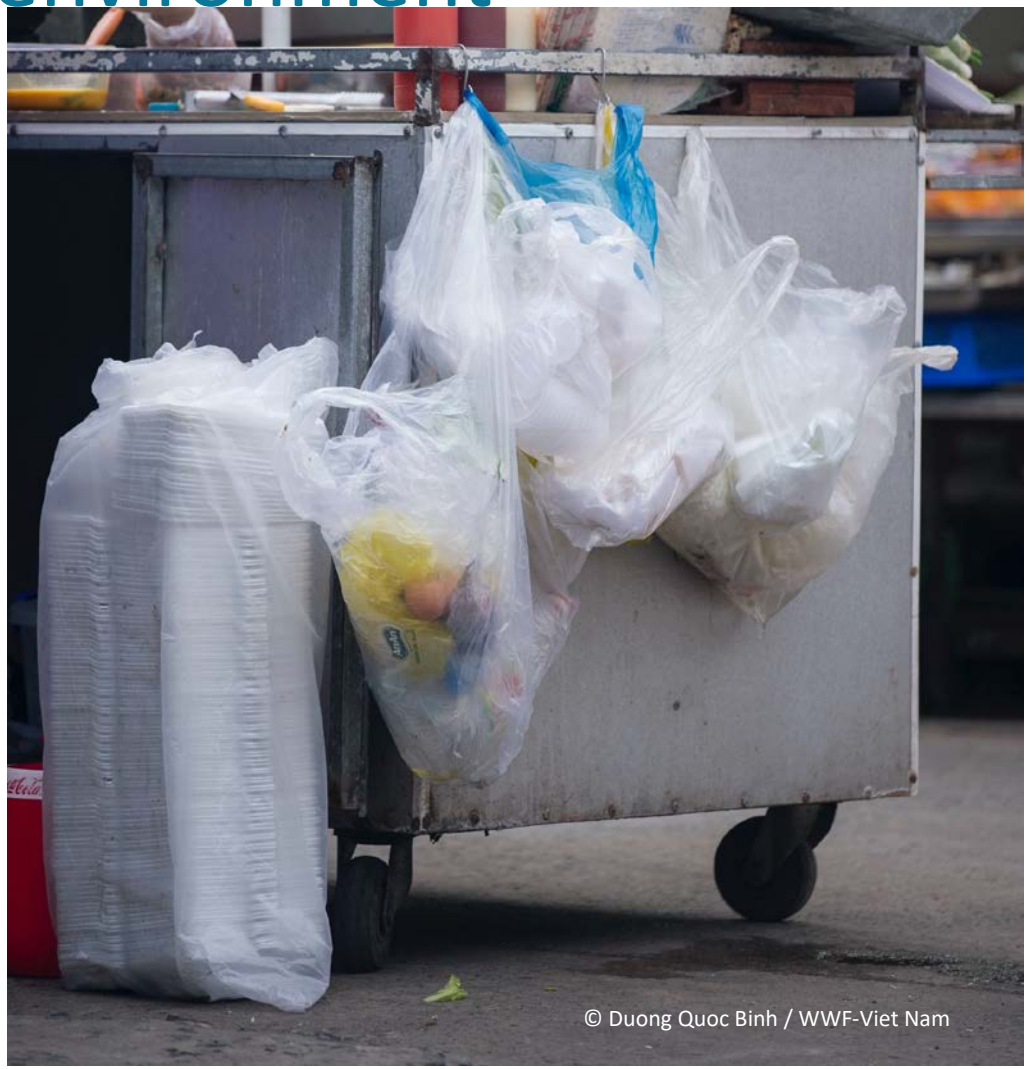
- High and stable temperature (~2000°C)
- Long burning time (gas ~ 8 seconds, solids: 30 minutes)
- Alkaline environment and self-cleaning process in the presence of acid (with CaO)
- Large capacity (tens of tons of waste/hour)
- 24/7 continuous time monitoring via CCR . room
- Reduce CO2 and toxic waste through measuring equipment
- No secondary waste such as ash
- Green technology, sustainable development.
- Hazardous and non-hazardous wastes will be completely treated



AFR feedpoints of a state-of-the-art cement kiln system (Geocycle).

Will reduce the backlog of untreated waste in Vietnam

Co-processing → reduction of non-recyclable fractions of plastics that could otherwise enter the marine environment



Plastic consumption 41 kg/person/year

Ranks 3rd in ASEAN

Plastic percentage 13%
in total municipal solid waste

Approximately 1,8 million ton of plastic waste
was mismanaged in 2010

This number is predicted to be 4,2 million ton
in 2025

Approximately 12-38% of plastic waste
is not collected but instead discarded directly

Co-processing garbage collection

Create better conditions for

Source: Report of Vietnam General Department of Environment, 2019

Co-processing → less waste to landfill

Approximately 71% of solid waste goes to landfills, while only 20% of landfills are sanitary landfills

Most of landfills are overloaded;

Incinerators have simple, old and outdated technology, and the air quality cannot be controlled

Some incinerators are inoperable due to the unsorted garbage before treatment

Compost is mixed with many impurities, low quality, thus does not have high market value

Source: MONRE, 2019

Co-processing awareness

Raise

AWARENESS
OF COMMUNITIES REGARDING
THE RELATION BETWEEN
PLASTIC LITTER
&
NEGATIVE IMPACTS
ON MARINE ENVIRONMENT &
HUMAN HEALTH
IS LIMITED.

THE NATIONAL ASSEMBLY

Law No. 72/2020/QH14

THE SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom - Happiness

Hanoi, November 17, 2020

Policy is supporting

LAW

ON ENVIRONMENTAL PROTECTION

Section 2. DOMESTIC SOLID WASTE MANAGEMENT

Article 75. Classification, storage and transfer of domestic solid waste

1. Domestic waste generated by households and individuals is classified as:

a) Reusable and recyclable solid waste;

b) Food waste;

c) Other domestic solid waste.

Article 73. Reduction, reuse, recycling and treatment of plastic waste, prevention and control of ocean plastic waste pollution

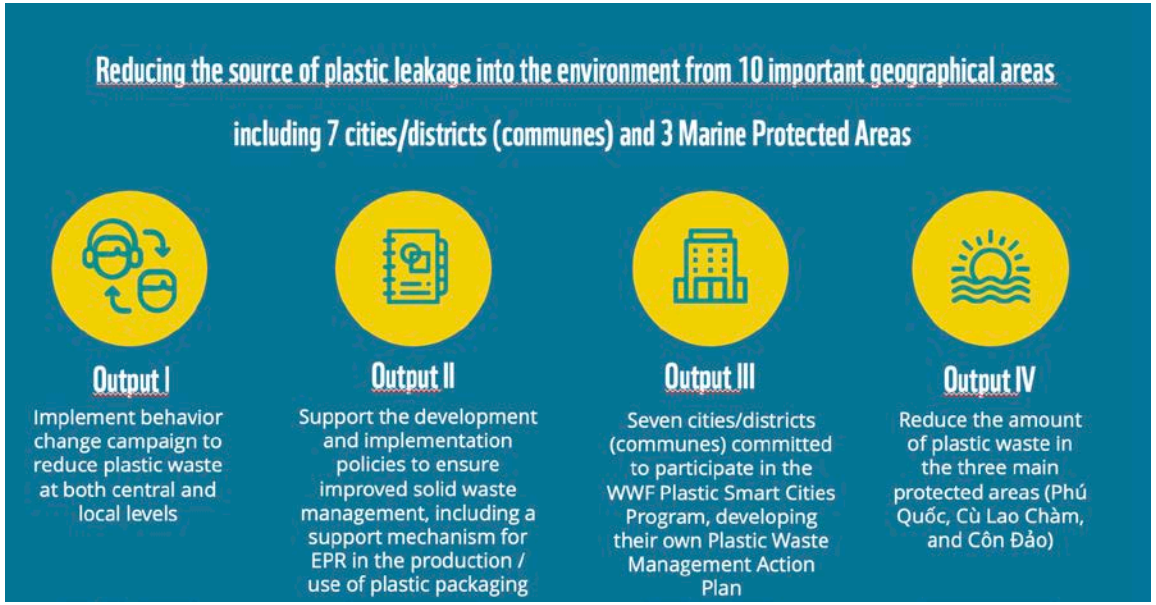
- 1. Entities shall reduce, classify and dispose of waste that is single-use plastic products and non-biodegradable plastic packaging according to regulations; not discharge plastic waste directly into the systems for drainage of water to rivers, ponds, lakes, channels and oceans.
- 2. Plastic waste generated from marine tourism and services, maritime economy, extraction of oil and gas and marine mineral resources, aquaculture and commercial fishing must be collected, stored and transferred to facilities licensed for recycling and treatment.
- 3. Environmentally-friendly products, single-use plastic alternatives and non-biodegradable plastic packaging alternatives that have been certified are entitled to incentives and assistance as prescribed by law.
- 4. Plastic waste must be collected and classified for reuse, recycling or treatment purpose as prescribed by law. Unrecyclable plastic waste must be transferred to licensed facilities for treatment as prescribed. Plastic waste generated from economic activities at sea must be collected for reuse, recycling or treatment and must not be discharged into the sea.
- 5. The State shall encourage the reuse and recycling of plastic waste in service of production of goods and building materials and construction of traffic works; encourage the research and development of systems for collecting and treating plastic waste floating at sea and in the ocean; introduce policies to promote reuse and recycling of plastic waste.
- 6. Provincial People's Committees shall organize the collection and treatment of plastic waste within their provinces; encourage the reduction of non-biodegradable plastic packaging and single-use plastic products; disseminate information about harmful effects of dumping of fishing gear into the sea and plastic waste on the ecosystem.
- 7. The Government shall introduce a roadmap for reducing production and import of single-use plastic products, non-biodegradable plastic packaging and products and goods containing microplastics.

WWF Plastic Waste Management Guidelines

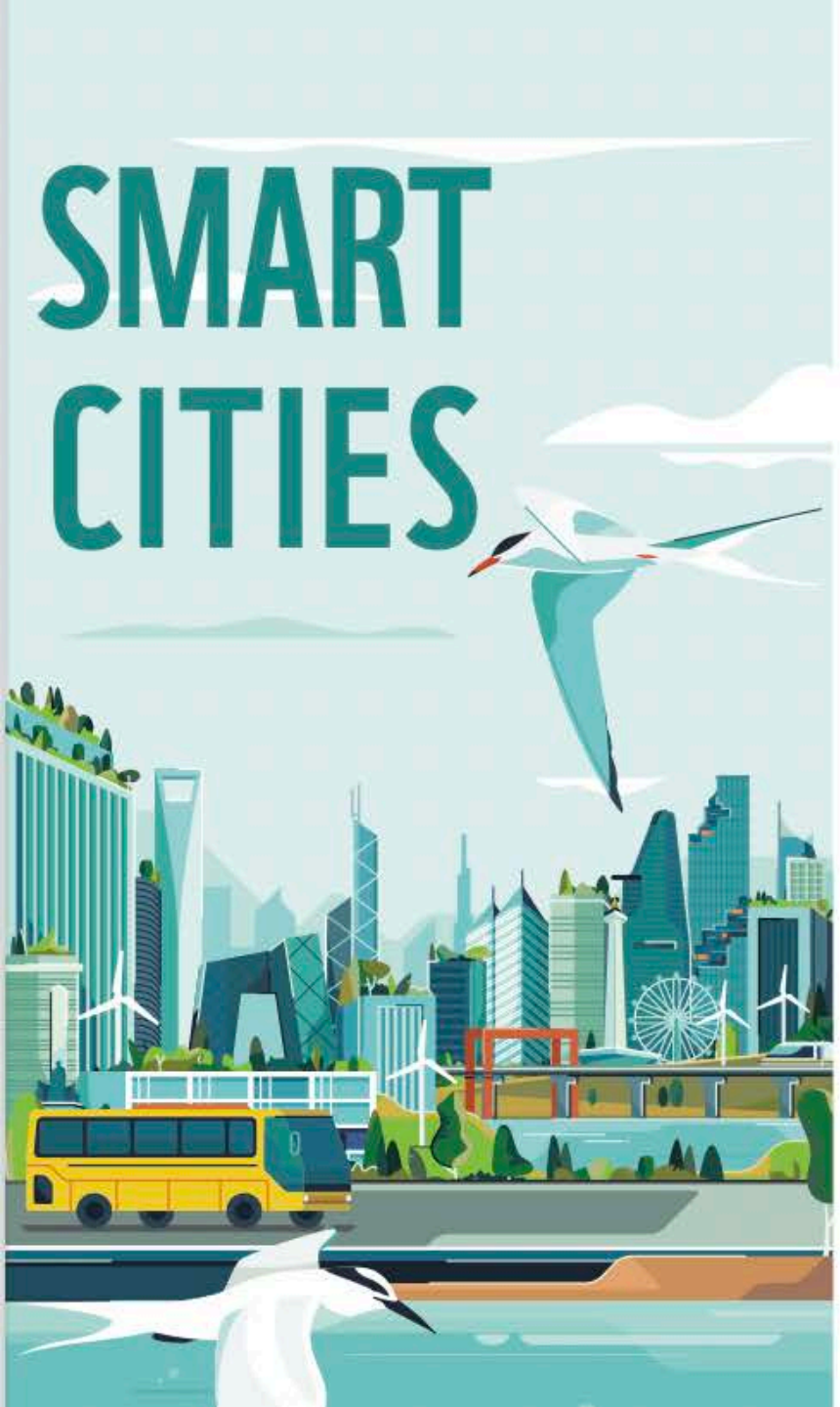
These Guidelines do not provide detailed analysis but can support high level decision making as well as guidance to support with undertaking further research on a case-by-case basis. This provides officers with a resource which can be used to support decisions on:

- The best approach to use when tackling a specific type of plastic waste.
- The circumstances where one type of treatment (or approach) is generally likely to be better than another, taking into account key regional or national characteristics.
- Whether WWF should support a particular approach or a course of action for treating plastic waste, taking into account key regional or national characteristics.
- What questions to ask potential in-country waste treatment partners when considering potential approaches, in order to minimise the negative impacts or suggest alternatives.

WWF-VIET NAM PLASTIC PROGRAM



SMART CITIES



Our key focus areas

- Reduction/ reuse
- Separate/ collect
- Recycle/ recover
- Landfill management

Monitor progress and adjust for success

01 PLEDGE

Pledge to be a Plastic Smart City

02 UNDERSTAND

Understand your city's waste flow and scope

03 STRATEGIC SOLUTIONS

Develop an Action Plan customized

04 TAKE ACTION

- **Improve policies** to support City Action Plan
- **Engage key businesses** via sector roundtables
- **Advance waste infrastructure** Improve collection, separation and recycling
- **Encourage innovation** & scale solutions

Support circular economy contributes to promoting green growth

The circular economy supports waste prevention, reduction and reuse (including repair) as a first priority, followed by recycling, energy recovery, and as a last resort, disposal. It aims to recover key materials necessary for society, whilst simultaneously enabling economic growth and innovation.

THANK YOU


TOGETHER POSSIBLE
We know that one organisation alone can't affect the change we need. That's why we rely on partnerships and our supporters. The changes we want to see in the world can only come about through the efforts of many people - together possible.