

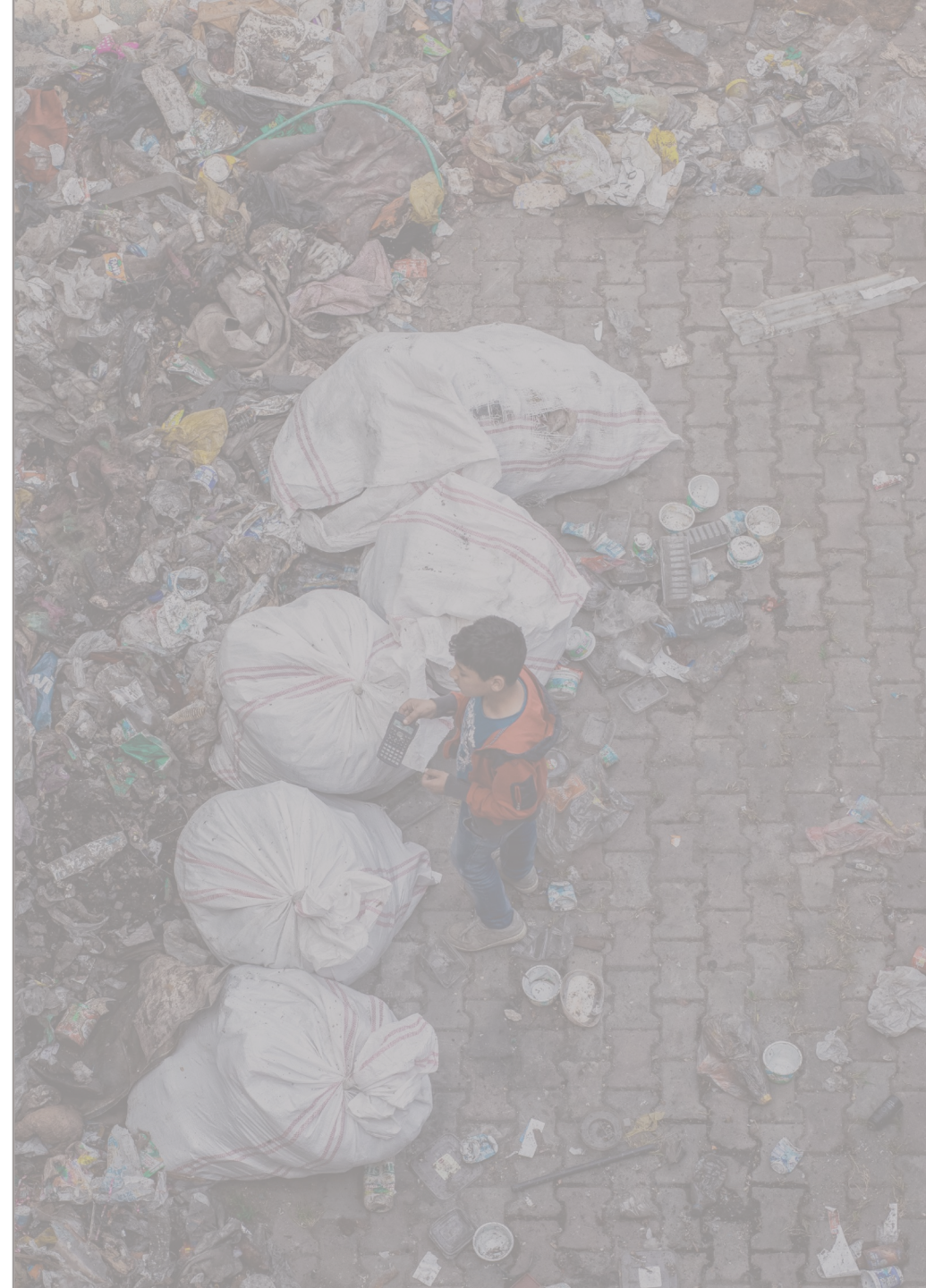
Project: "Promotion of BAT/BEP to reduce uPOPs releases from waste open burning in the participating African countries of SADC sub-region"

Module 4

Preventing abandonment and littering of wastes

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I. Introduction

To eliminate or reduce the open air burning of waste and the hazards associated with it, many actions are required:

The overall, medium-term goal is to build an effective Solid Waste Management system that provides alternatives to abandonment and open air burning.

The most effective short-term ways to reduce abandonment are to:



- reach 100% collection coverage



- manage safely municipal landfills and intermediate transfer stations



- develop the appropriate Regulations and Compliance mechanism → legislation and institutional setting. Where the legislation must clearly state that the abandonment, dumping or uncontrolled disposal of waste is prohibited, while waste prevention, recycling and processing for re-use is promoted.

II. Definition and types of abandonment

Waste abandonment / dumping definition

“The disposal, without environmental controls, of solid wastes outside one’s own property or outside the site where it is generated”.

The waste dumped can be non-hazardous or hazardous depending on the source.

Abandonment in all its sorts is the main source of open burning of waste and that eliminating it can prevent OBW



II. Definition and types of abandonment

There are many types of waste abandonment / dumping:

- Households abandon waste on the streets when it is not collected.



II. Definition and types of abandonment

- Waste Collectors abandon it anywhere when, after collection, they do not have access to operating SWM facilities.

Example:

illegal dumping by waste collectors outside an already full 'Transfer Station'.



II. Definition and types of abandonment

- Waste is abandoned inside SWM facilities and plants when these don't function effectively

Example:

a non-functioning manual recycling center in a low-income country: this waste has no market, thus it is abandoned



II. Definition and types of abandonment

- illegally exported waste

Up to 12,000 containers storing scrap and “second-hand” products have been abandoned at ports in Vietnam, causing difficulties to customs agencies, congesting ports, and letting waste importers worried.

<https://english.thesaigontimes.vn/62497/12000-waste-containers-abandoned-at-local-ports.html>



Waste imports are seen abandoned at Cat Lai Port in VietNam - PHOTO: THU HOA

II. Definition and types of abandonment

- High income countries also have been affected by illegal dumping coming of industrial waste.



II. Definition and types of abandonment

- Mining waste: mineral extractions generates a large amount of waste which, due to high operations' cost, is usually not properly dealt with



Water pollution from the acid leachate from a pile of mine wastes.

Tintillo river, Huelva, Spain

<https://www.mining.com/new-technique-for-rehabilitation-of-mine-rock-waste-piles-may-prevent-acid-drainage/>

II. Definition and types of abandonment

a bridge made of old computers: recycling or abandonment ?

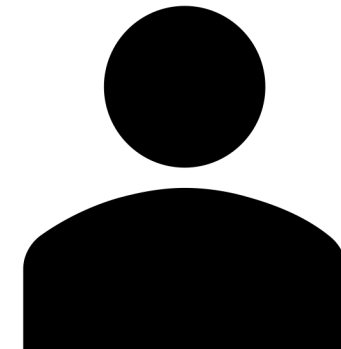


III. Relevant actors of the abandonment process

Many ACTORS contribute to solid waste management and their actions must be coordinated by the Public Sector if an effective SWM system is to be built and operated.

Actors of SWM play very different roles.

Their coordination must be undertaken with the understanding that neither a single actor nor a single practice or technology can give the solution to the SWM problem.



III. Relevant actors of the abandonment process

TYPE OF ACTOR	ROLE IN SWM
Designers of goods	<ul style="list-style-type: none">• Can design objects with the aim to reduce consumption of raw resources and increase maintenance, reuse and recovery of materials,• Can stop planned obsolescent designs (electronics, etc.)
Managers of industrial production units	<ul style="list-style-type: none">• Can steer the efficiency of production processes to reduce consumption of natural resources, packaging and waste generation
Households	<ul style="list-style-type: none">• Generate waste, collaborate in efficient segregated collection,• Can reduce the consumption of packaging, reuse products.• Pay service fees
Business, commerce, industries, agricultural production	<ul style="list-style-type: none">• Generate waste, participate in segregated collection schemes.• Pay service fees
The generated waste are actors because they influence SWM	<ul style="list-style-type: none">• Amounts and composition per each source (household, business, commerce, industry, health)• Hazard characteristics and recovery possibilities

III. Relevant actors of the abandonment process

TYPE OF ACTOR	ROLE IN SWM
National policy makers and Officers of National Ministries	<ul style="list-style-type: none">• Define national legislation, regulation and guidelines; they influence, with their actions and competence, the content and quality of National SWM Strategies and City SWM Action Plans• Establish the economic and tax incentive favouring different SWM phases and operators• Define funds and staff of the Public SWM Offices and Environmental / Health Agencies• Affect international prestige and relationships
Local Authorities	<ul style="list-style-type: none">• Usually responsible for the organization of waste collection• Often don't have the necessary funding and require national or international support• Monitor service provision
Citizens	<ul style="list-style-type: none">• What and how much an individual buys, throws away, reuses• The individual's effort to contribute to segregated collection• The individual representation of the risk associated with waste management
Waste collectors Landfill managers	<ul style="list-style-type: none">• Formal / private enterprises whose service must be regulated by transparent and detailed contracts• Informal workers, collectors or recyclables dealers

III. Relevant actors of the abandonment process

The functions of actors in a SWM system can be classified as:

- SWM policy-makers, designers and regulators contribute to the writing of the SWM City Action Plan, its implementation, and to the enforcement of legislation;
- the interested and/or affected sectors of the civil society have the right to discuss the existing SWM situation and the proposed alternative solutions, including health and environmental impacts, and cost and tariffs of service;
- services providers perform SWM activities, such as waste collection, or manage relevant facilities and plants;
- industrial actors produce the objects that then become waste.

IV. Taking responsibility

Public health and the environment are always negatively affected by waste abandonment.

But responsibilities for abandonment are not equally attributed.

Household and markets, for instance, might find themselves forced to dump waste outside their home when collection is not regularly performed.

they might instead prove very willing to engage in a well organised collection service and to pay a service fee.

This is an example of abandonment for lack of an effective SWM service.



IV. Taking responsibility

BUT ALSO...

Citizens in high income countries abandon waste outside of the 'intelligent containers' dedicated to the segregated collection of waste fractions, necessary for recycling.

Intelligent containers keep track of how much waste each citizen generates and regulated the service fee accordingly: in application of the principle the 'polluter pays'.

People who leave waste outside of collection containers do it to avoid paying for their waste: this is an illegal behavior.



IV. Taking responsibility

Responsibilities for abandonment are not equally attributed.

Tourists and visitors of parks and natural areas might dump packaging and the residuals of their food in the public space.

In the US, the Grand Canyon National Park has taken the radical step of removing many of its public bins altogether. Visitors are given a very clear directive: "Carry out your trash. Burning, burying, or leaving trash or toilet paper is prohibited. No exceptions."

'Trashers' are pursued and fined.



IV. Taking responsibility

Responsibilities for abandonment are not equally attributed

Some industries in high-income countries illegally export their industrial waste to low-income countries to avoid the high costs associated to a proper waste management, such as: materials recovery decontamination practices for hazardous waste.

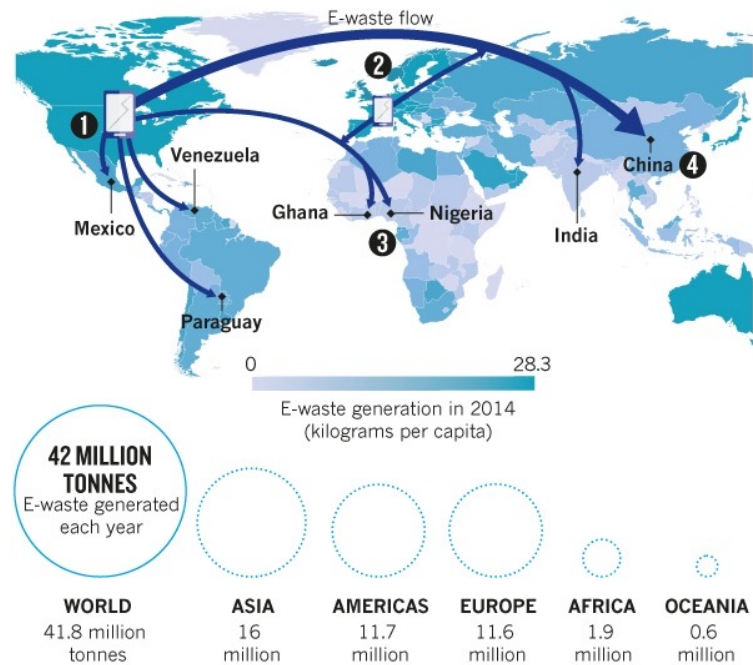
Example: Generators of electric and electronic waste might export them under the label second-hand good to low-income Countries where they actually become heaps in a dump.

These are examples of abandonment for unwillingness to pay for the costs associated with the life-cycle of the goods produced.

IV. Taking responsibility

UNFAIR FLOW

Most electronic waste from developed countries ends up in poor nations that lack regulation. China processed around 70% of the world's e-waste in 2012; the rest goes to India and other countries in eastern Asia and Africa, including Nigeria.



- 1 The United States produces the largest total amount of e-waste per year, at 7.1 million tonnes.
- 2 Norway generates the most e-waste per person, at 28.3 kg per capita.
- 3 African nations produce little e-waste, with Equatorial Guinea creating most (10.8 kg per capita).
- 4 China ranks second for total e-waste generation (6 million tonnes), but low relative to its population size (4.4 kg per capita).

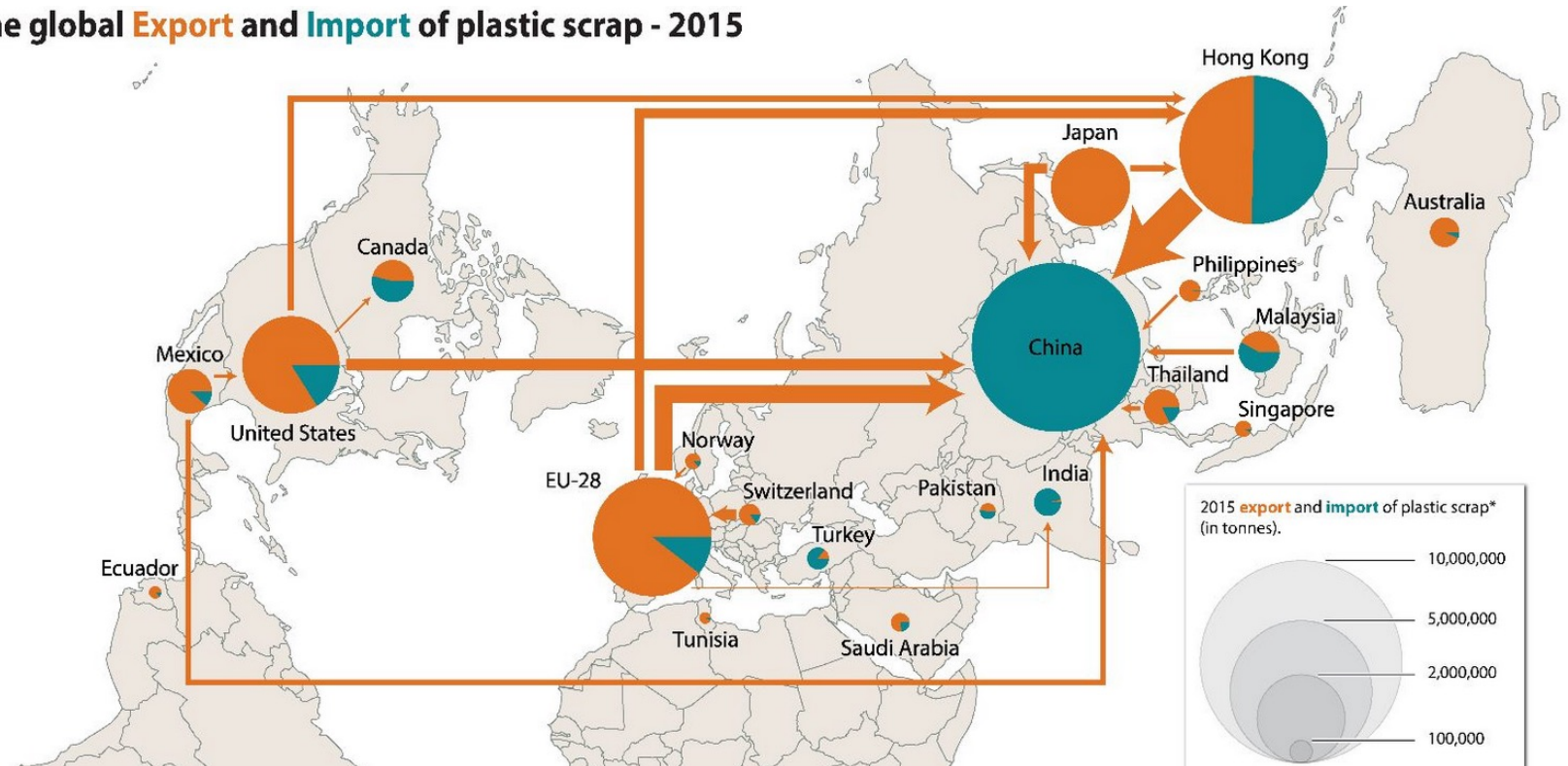


IV. Taking responsibility

The international trade of 'recyclable? Waste

Since January 2018 China regulated strictly this trade to avoid receiving from highly industrialized countries UN-recyclable waste

The global **Export** and **Import** of plastic scrap - 2015



IV. Taking responsibility

But waste brought to countries who had not the capacity to appropriately manage them

CAME BACK: And are now polluting all oceans

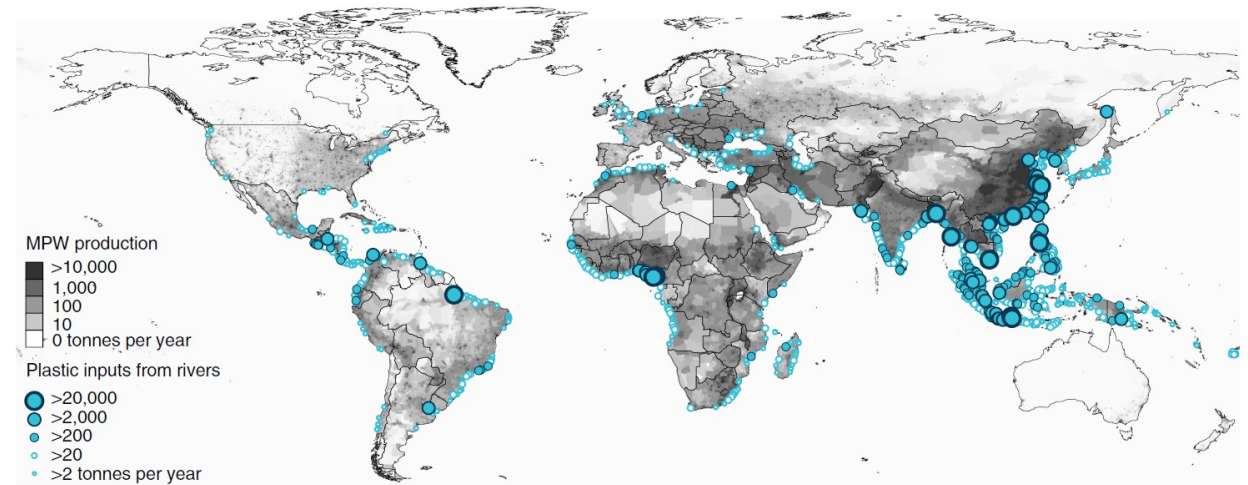
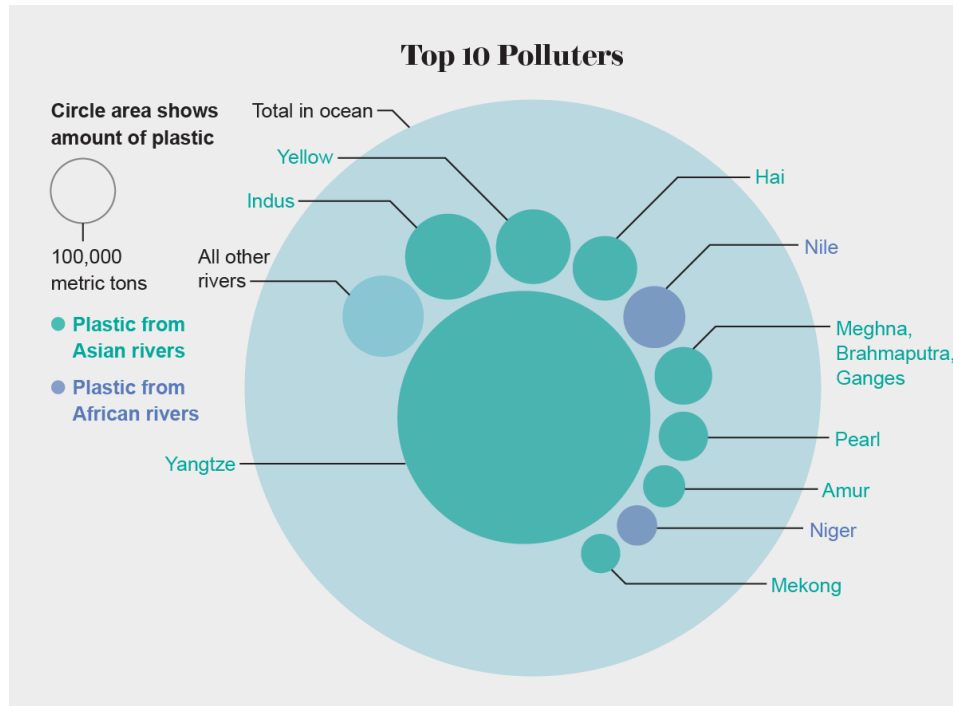


Figure 1 | Mass of river plastic flowing into oceans in tonnes per year. River contributions are derived from individual watershed characteristics such as population density (in inhab km^{-2}), mismanaged plastic waste (MPW) production per country (in $\text{kg inhab}^{-1} \text{d}^{-1}$) and monthly averaged runoff (in mm d^{-1}). The model is calibrated against river plastic concentration measurements from Europe, Asia, North and South America.

The relevance of a well funded and staffed Public National Environmental Protection Agency

The operation of a well-funded and staffed Environmental Protection Agency is essential to the monitoring of the health and environmental impacts of SWM, or waste abandonment and to maintain or regain trust.

Actions include:

- ✓ Environmental performances of generators of high amounts of waste are regularly controlled and monitored.
- ✓ Collaboration with International Agencies to enforce Conventions on export/import of hazardous waste.
- ✓ Information campaigns.



To reduce negative and illegal actions of
abandonment

All actors need to feel they are part of a
larger effort

To engage the many actors in contributing to an effective SWM system, roles and responsibility must be clearly assigned by the legislation and trust must be shared among participants.

- Establish clear strategic goals through public participations of all relevant actors.
- Ensure all actors know what is required of them by providing clear regulations and monitoring.
- Ensure equal access to affordable services for all : fees must be issued and collected for a SWM system to be financially sustainable, but this must not prevent from ensuring 100% coverage.
- Establish EPR schemes - Extended Producers Responsibility for selected waste, such as packaging, WEEE.

To engage the many actors in contributing to an effective SWM system, roles and responsibility must be clearly assigned by the legislation and trust must be shared among participants.

1

Establish clear strategic goals through public participations of all relevant actors



2

Ensure all actors know what is required of them by providing clear regulations and monitoring.



3

Ensure equal access to affordable services for all : fees must be issued and collected for a SWM system to be financially sustainable, but this must not prevent from ensuring 100% coverage.



4

Establish EPR schemes - Extended Producers Responsibility for selected waste, such as packaging, WEEE.

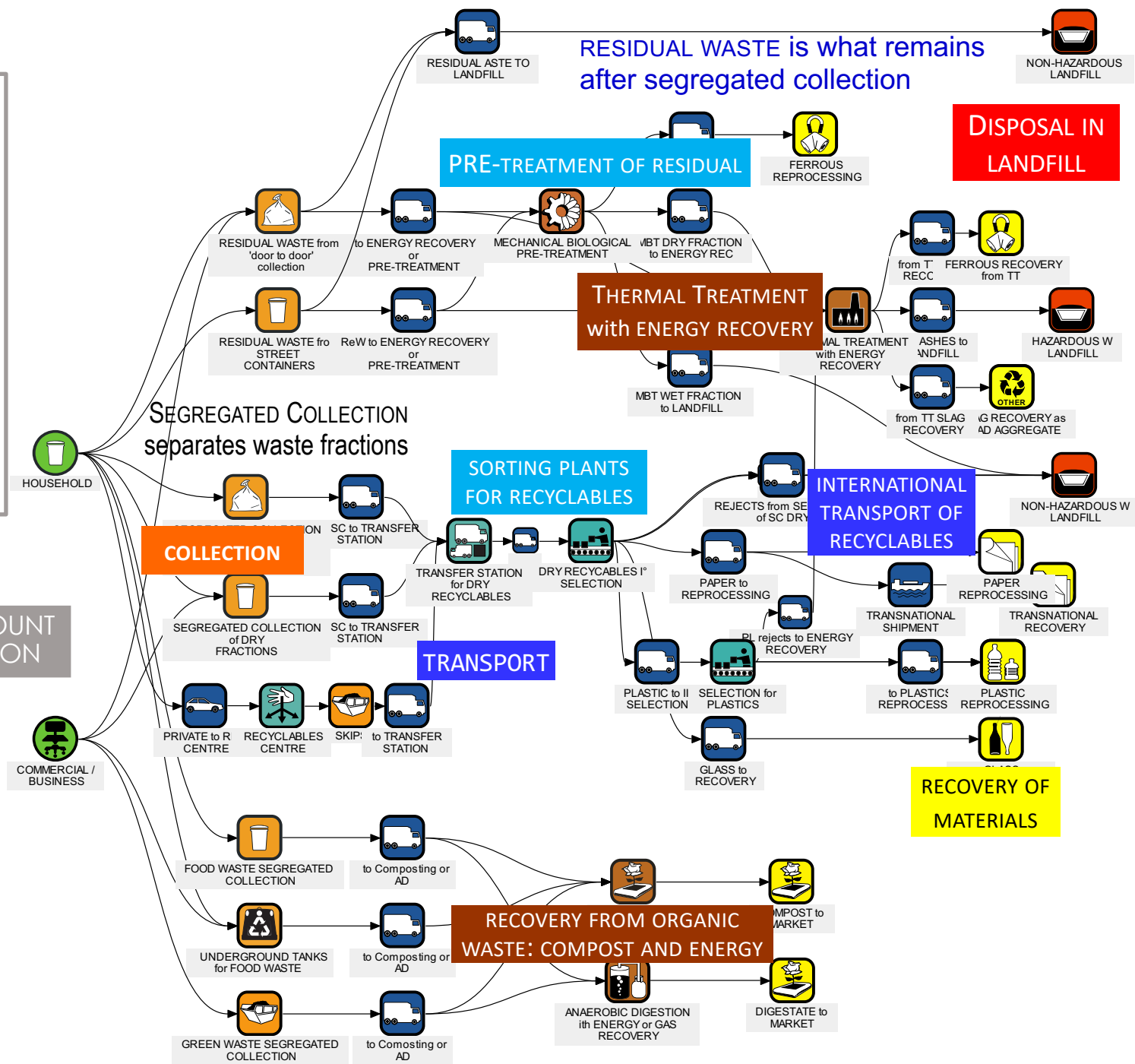


BEST PRACTICE

Ensure actors understand the overarching GOAL and their ROLE in it:

everyone contributes to eliminating damaging behaviors by contributing to an effective SWM system

WASTE TYPE, AMOUNT AND COMPOSITION



V. Solutions: Best practice

Establish clear strategic goals

- Define what is going to become part of your SWM system

EQUIPMENT - FACILITIES - PLANTS THAT CAN BE SELECTED TO COMPOSE SWM DEVELOPMENT SCENARIOS	MATERIAL RECOVERY	ENERGY RECOVERY
CENTRES FOR THE PREPARATION FOR REUSE OF SELECTED WASTE TYPES	X	
COLLECTION CONTAINERS FOR RESIDUAL WASTE and RECYCLABLE FRACTIONS		
VEHICLES FOR COLLECTION		
TRANSFER STATIONS		
COLLECTION CENTRES where citizens can bring large waste	X	
SORTING PLANTS for recyclables and RE-PROCESSING PLANTS	X	
COMPOSTING PLANTS	X	
ANAEROBIC DIGESTION PLANTS	X	X
THERMAL TREATMENT PLANTS (mainly incineration, and also gasification)	X	X
LANDFILLS for non hazardous and hazardous waste ENGINEERED LANDFILLS ALSO PROVIDE for the recovery of biogas		X

V. Solutions: Best practice

Ensure equal access to affordable services for all:

- Service fees must be issued and collected for a SWM system to become in time financially sustainable
- but
- at the beginning of the efforts to build an effective SWM and when the fees still don't cover all the costs, all available funding must be directed to ensuring 100% collection coverage to all citizens, irrespective of their ability to pay fees.

V. Solutions: Best practice

Legislation reinforcement

- The legislation must clearly state that the abandonment, dumping or uncontrolled disposal of waste is prohibited, while waste prevention, recycling and processing for re-use is promoted.
- Prevent illegal trade of hazardous wastes and follow the directives/ guidelines of the Basel Convention.



V. Solutions: Projects

A new project driven by the South African Department of Environment, Forestry and Fisheries aims to address the problem on shore.


The department is joining forces with local officials, non-profit groups, a privately-owned company, to stem the flow of marine litter in five river systems in Kwazulu-Natal.

Through increased litter collection and community-led waste sorting and recycling, the department will reduce litter generation at its source, thereby lessening the amount of pollution that reaches the ocean.



Plastic clogs Cuttings Beach near Durban. Every year, up to 250,000 tonnes of litter is dumped into the oceans around South Africa. Photo by Lisa Guastella



V. Solutions: Projects





TOOLKITHomeAbout ▾ProjectsNews

The challenge: uncollected waste in the streets and rivers of Douala


Plastic pollution in Douala is at crisis point. Without a waste collection service, many people have no alternative than to dump their waste in the streets and riverbeds of the city.



Much of the economic activity in Douala takes place in the city's markets. Traders bring their wares to sell at the market, and the waste accumulates at central points. Waste from the markets is comprised of food waste, a range of different types of plastic packaging and products, and even medical waste. The rotting food waste attracts flies that spread disease.







V. Solutions: Projects



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Preparing collected plastic for recycling

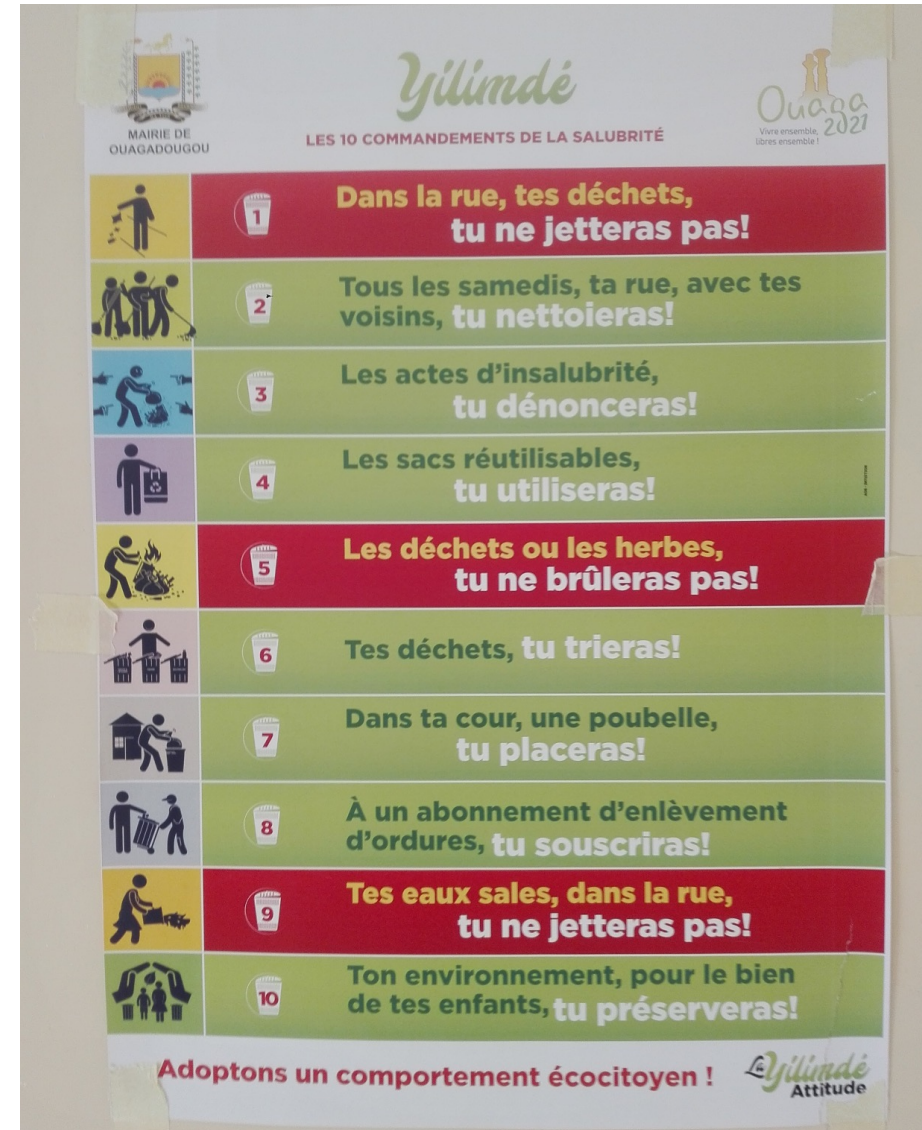
Once the collected plastic waste reaches the REDPLAST site, it is sorted and weighed, and prepared to enter the value chain. Some types of plastic can be sold to recyclers, whereas others are processed on-site to make new products like paving tiles.



V. Solutions: Projects

City of Ouagadougou in Burkina Faso

“The 10 commandments of sanitation”: a campaign of awareness raising



V. Solutions: Projects

In the US – Delaware: Campaign of awareness raising

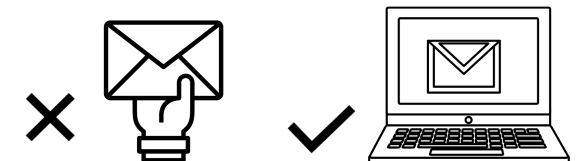
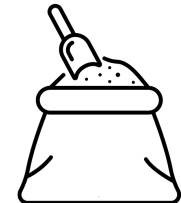
1. **Use a reusable bottle/cup for beverages on-the-go** This will eliminate the one-time use plastic containers. While most cans and bottles can be recycled, they require a lot of virgin material and energy to be produced, transported to the bottling facility and to the store.
2. **Use reusable grocery bags, and not just for groceries**
3. **Purchase wisely and recycle.** You can reduce the amount of waste you produce by purchasing products that come with less packaging and/or come in packaging that can be recycled. Not all plastics are recyclable, so check labels before your buy.
4. **Compost it!** Your fruit and vegetable scraps, eggshells, coffee grounds, grass clippings, and leaves can all be composted. Depending on the conditions, you may have compost in 3 to 12 months to use in your garden.



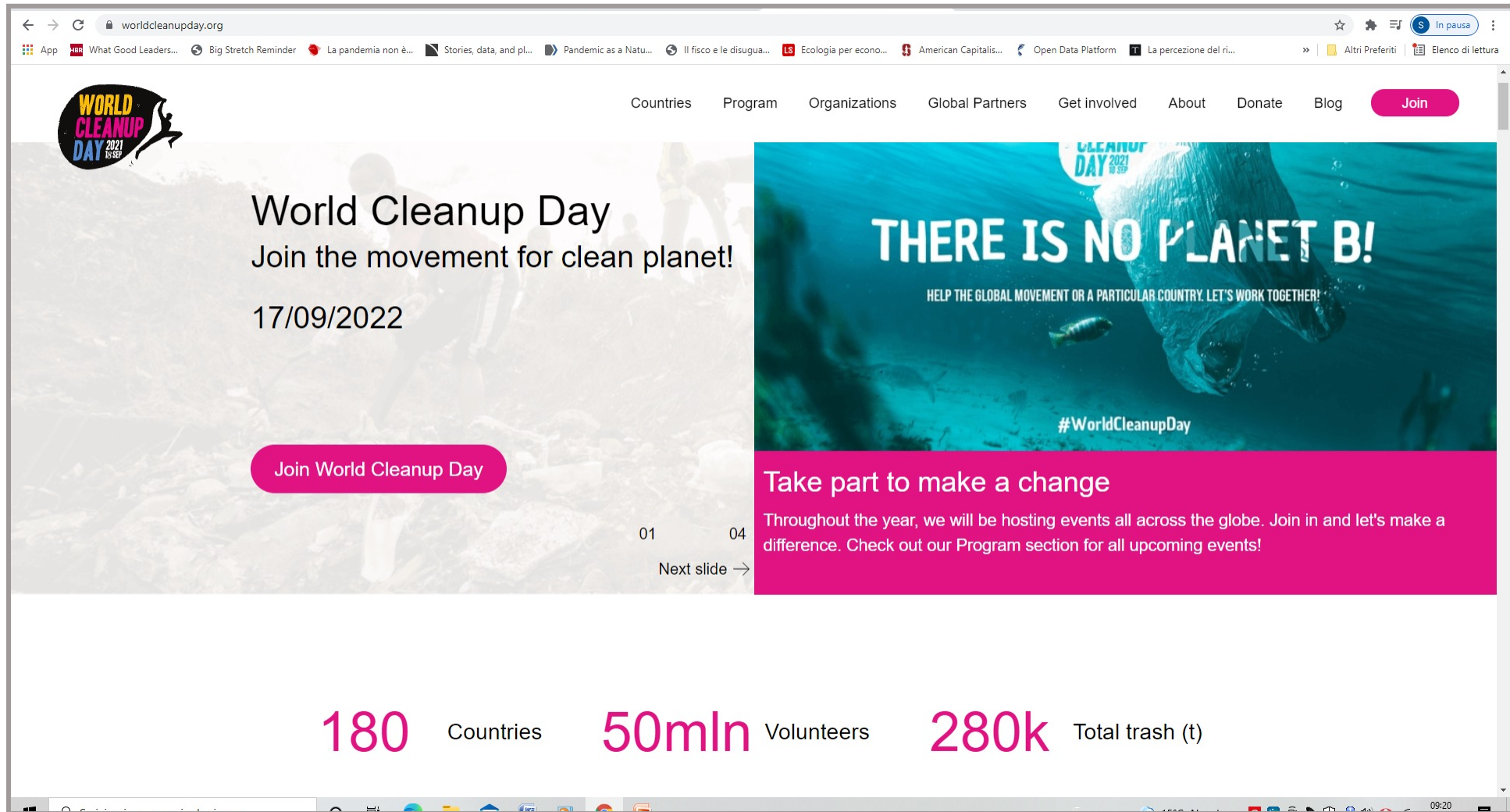
V. Solutions: Projects

In the US – Delaware: Campaign of awareness raising

5. **Avoid single-use food and drink containers and utensils.** Avoid single-use coffee cups, disposable utensils, straws and napkins. Anything we can do to reduce our use of these products adds up to make a big impact.
6. **Buy secondhand items and donate used goods.** That can mean buying secondhand clothes at Goodwill, used furniture and repurposed construction materials, or searching for a deal on a bicycle. By purchasing secondhand items you'll be supporting local charities in addition to saving items from ending up in the dump.
7. **Shop local farmers markets and buy in bulk to reduce packaging.**
8. **Curb your use of paper: mail, receipts, magazines.**



V. Solutions: Projects



The screenshot shows a web browser displaying the World Cleanup Day website. The browser's address bar shows 'worldcleanupday.org'. The website's navigation menu includes links for Countries, Program, Organizations, Global Partners, Get involved, About, Donate, Blog, and a pink 'Join' button. The main content area features a large banner with the World Cleanup Day logo and the text 'World Cleanup Day Join the movement for clean planet! 17/09/2022'. Below this is a pink button that says 'Join World Cleanup Day'. To the right, there is a slide titled 'THERE IS NO PLANET B!' with the subtitle 'HELP THE GLOBAL MOVEMENT OR A PARTICULAR COUNTRY. LET'S WORK TOGETHER!' and the hashtag '#WorldCleanupDay'. Below the slide, a pink box contains the text 'Take part to make a change' and 'Throughout the year, we will be hosting events all across the globe. Join in and let's make a difference. Check out our Program section for all upcoming events!'. At the bottom of the slide, there are statistics: '180 Countries', '50mln Volunteers', and '280k Total trash (t)'. The browser's taskbar at the bottom shows various icons and the time '09:20'.

World Cleanup Day
Join the movement for clean planet!
17/09/2022

Join World Cleanup Day

01 04
Next slide →

THERE IS NO PLANET B!
HELP THE GLOBAL MOVEMENT OR A PARTICULAR COUNTRY. LET'S WORK TOGETHER!
#WorldCleanupDay

Take part to make a change
Throughout the year, we will be hosting events all across the globe. Join in and let's make a difference. Check out our Program section for all upcoming events!

180 Countries **50mln** Volunteers **280k** Total trash (t)

V. Solutions: Projects

WORLD CLEAN-UP DAY

occurs on the third Saturday of every September, and we see cleanup initiatives taking place around the world.

“The roadblock to change is the mindset of the people towards waste, particularly single-use plastics, the people are yet to understand how to separate their waste. Another issue is the collection process by the government. The delay in time of collection for household waste leads to improper disposal of waste on the street, walkways, and open burning.”

ASHADE ABDULSALAM ABIODUN



<https://www.earthday.org/world-cleanup-day-inspires-action-on-waste-crisis-in-sub-saharan-africa/>

Thank you for your attention!