



POLICY | PILOT | PRACTICE

PERFORMANCE | HEALTH | IMPROVEMENT

PRO STRATEGIC ANALYSIS

About DRIFT:

Waste Management

Policy | Pilot | Practice

Operational Excellence

Performance | Health | Improvement

About me:

Currently:

- KEPRO Technical Lead Consultant / CEO
- Uganda EPR Implementation & Policy Framework
- Kenya EPR Guidelines

Previously:

- Founding Chair KEPRO
- Co – Chair Kenya Plastics Action Plan
- Reliability Practitioner & Improvement Manager | Arcelor Mittal (Canada & USA)

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POLICY | PILOT | PRACTICE

About Me

- Materials Engineer
- MBA
- Reliability Practitioner
- TPM Practitioner

Sustainable Waste Management

2017 – 2019: Study leading to KEPRI

2019 – 2020: Founding Chair of KEPRO

2020 – Present: Technical Lead Consultant for KEPRO helping operationalize the PRO for Packaging

2023: Kenya EPR Guidelines (cyclos / DRiFT)

2023: Uganda EPR regulations (DRiFT / cyclos)

2023: Uganda Beverage Sector PRO (DRiFT / cyclos)

Operation Excellence

2000 – 2012: ArcelorMittal

- Reliability Engineer (Canada)
- Technology Manager (USA & Canada)

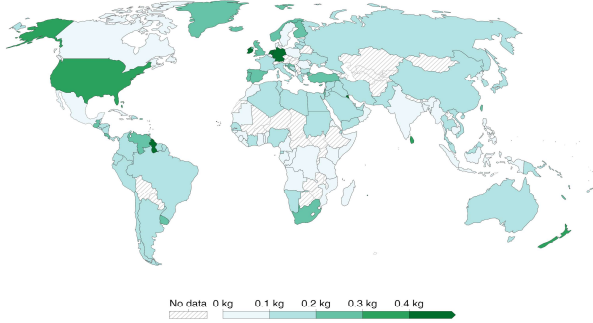
2012 – 2021: CEO of GPL (Kenya)

2021 – Present: CEO DRiFT

Growing Problem ...

Plastic waste generation per person, 2010

Daily plastic waste generation per person, measured in kilograms per person per day. This measures the overall per capita plastic waste generation rate prior to waste management, recycling or incineration. It does not therefore directly indicate the risk of pollution to waterways or marine environments.

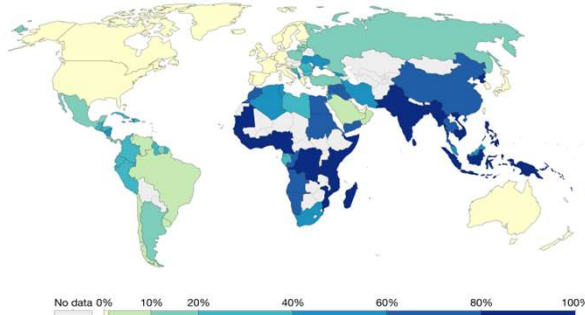


Source: Jambeck et al. (2015)

OurWorldInData.org/plastic-pollution • CC BY

Share of plastic waste that is inadequately managed, 2010

Share of total plastic waste that is inadequately managed. Inadequately disposed waste is not formally managed and includes disposal in dumps or open, uncontrolled landfills, where it is not fully contained. Inadequately managed waste has high risk of polluting rivers and oceans. This does not include 'littered' plastic waste, which is approximately 2% of total waste (including high-income countries).

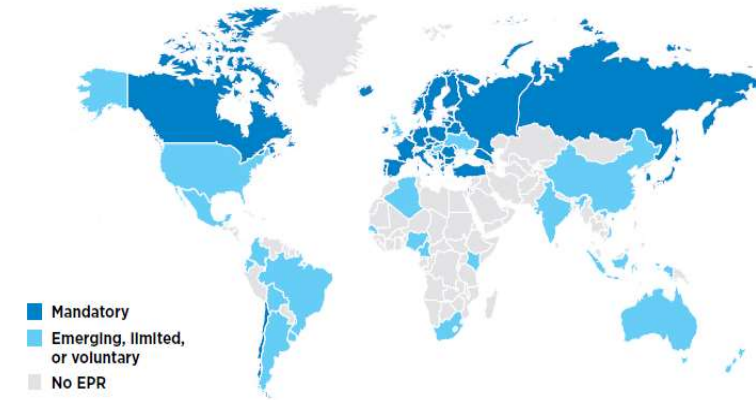


Source: Jambeck et al. (2015)

CC BY



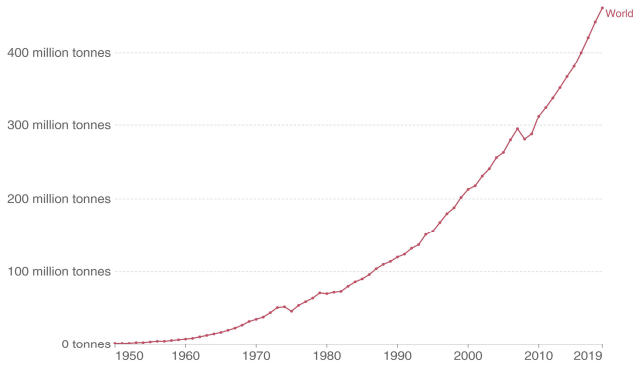
POLICY | PILOT | PRACTICE



- Mandatory
- Emerging, limited, or voluntary
- No EPR

Global plastics production

Plastic production refers to the annual production of polymer resin and fibers.



Source: Our World in Data based on Geyer et al. (2017) and the OECD Global Plastics Outlook

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Global Disparity ...

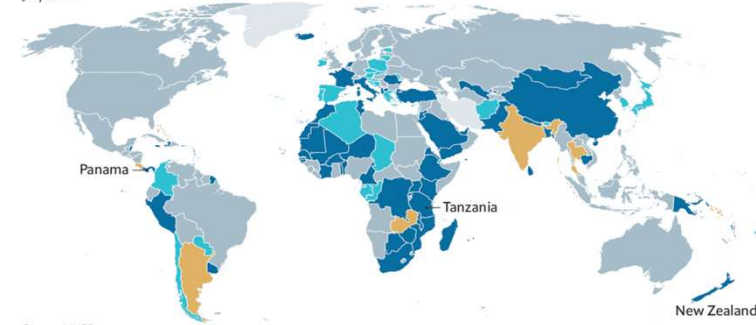
Global Solution: Manage or Ban?

Paying with plastic

Plastic-bag bans

- Full ban
- Partial ban
- Ban under consideration
- No ban
- No data

July 2019



Source: UNEP
The Economist

Global Perspective ...

Economy vs Environment?

STRENGTHS:

- Industry Lead
- Anchor Points / Self-Regulated**
- Government Targets / Industry Pricing**
- Collaborative Environment
- Pilot during policy development
- Practice during sensitization
- Self Regulating**

OPPORTUNITY:

- MRF's**
- Regional Leader
 - Regional system?
- Competitive Structure
- Design for sustainability
- Segregation at source
- Rigorous Reporting Requirements**
- Informal Sector

WEAKNESS:

- Multiple PRO's**
- Poor Data management nationally
- Poor Infrastructure
 - Low collection rates
 - Low recycling capacity
 - Low recycling quality
- Poor Awareness
- Poor Alternatives

THREAT:

- PRO Focus**
- Weak / Poor Enforcement
- Too many product groupings
- Too many stakeholder interaction points
 - County vs National
 - PRO vs County
 - Collection vs recycling
 - Who is ultimately responsible?
- Weak systems to manage multiple PRO's and multiple Product streams
- VAT on Waste Management Sector**

Political:

- Strong political will
- Public / Private sector collaborative environment
- Robust Policy Framework

Social:

- Awareness / Sensitization
- Culture creation
- Informal Sector

Environment:

- Focus on NEW waste, not legacy waste
- Create MRFs before Landfill

Economic:

- Industry lead structure
- Self-Funded with accountability
- Formalized system

Technological:

- Measurable
- Monitorable
- Manageable

Legal:

- Mandatory & Enforceable
- Anchor Points
- Self-Enforcing

STRENGTHS

Anchor Points

WHAT:

- Mechanism to bind (anchor) obliged members of the licence to existing legally binding permit(s)
 - Examples:
 - NEMA permit
 - KEBS
 - Import Licence

WHY:

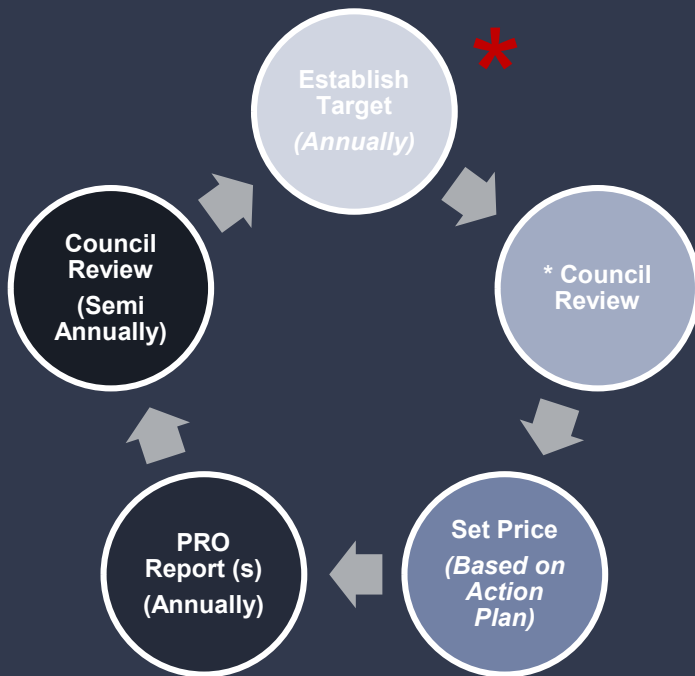
- Ensures all formal business participate
- Minimize free riders
- Cross check system for Authority to validate membership / volume
- Creates credibility

HOW:

- Must be anchored in law
- Annual registration

STRENGTHS

Target / Pricing



* Council to be established by:

- Public Sector (Authority / MOE)
- PRO (s)
- BMO's (Waste Sector / Manufacturing / Retail etc)
- Other Stakeholders

HOW:

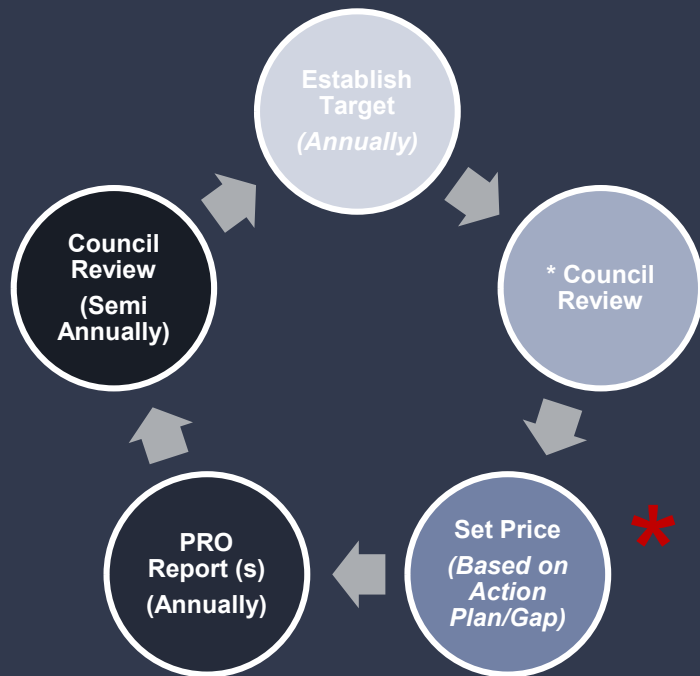
- Set Nationally by product fraction
 - Important to modulate price based on:
 - Recoverability
 - Recyclability
 - Current rate
 - Capacity (volume gap)
 - Capability (quality gap)
 - Volume (overall volume)
 - Material Fraction (PET vs LD vs Glass etc)

WHY:

- Collaborative platform to review:
 - Current status
 - Target
 - Above gap defines the COORDINATION & ACTION PLAN

STRENGTHS

Target / Pricing



WHAT:

- PRO's are held accountable to achieving improvement
 - Cannot cherry pick area or product
 - Need to focus on recovery & recyclability nationally based on an approved EPR plan to be approved by the Authority

HOW:

1. Council to review DATA

- Benchmarks
- Gaps
- Current Capacity
- Current Capability
- Volumes etc

2. Establish Action to Achieve Targets => PRICE

- Action requires Resourcing
- Resourcing required plan / funding / millstones

3. Self Accountable

- Reviewed Target => Set Price
- Failure to establish price/target/plan => PRO is deregistered
 - ALL MEMBERS ARE NOW INDIVIDUALLY ACCOUNTABLE until they come back together to establish PRO that will achieve targets and fund respective pricing...

NOTE:

- Set initial Pricing Low – establish operation / get participation
- Price should be capped to 1% (Guideline)

Without EPR FEE ...



60 Ksh/loaf

With EPR FEE ...



What is the incremental cost with EPR?

- @ 10 Ksh/kg additional on packaging cost
- Approximately 200 bags/kg
- EPR Fee = 0.05 ksh/bag

60.05 Ksh/loaf

< 0.1% Increase to cost of loaf

What is the cost to manage ?

STRENGTHS

Self Regulating

WHAT:

- Mechanism to allow supply chain to cross check each player / member is compliant
 - Industry Operated => WIN!
 - Industry Regulate => WIN!

HOW:

- HIGH penalties for anyone who operates with a non registered producer (local/importer)
 - RM Supplier / Manufacturer / Distributor / Retailer etc
 - Fine of over (\$5,000 per SKU)
 - Enforcement by Authority:
 - High fine
 - Anchor Points
 - Self Enforcement:
 - Each supply chain operator must ensure producer is:
 - Registered
 - Complaint

WHY:

- Ensures all formal business participate
- Minimize free riders
 - Increased participation => lower system operating cost

WEAKNESS

Multiple PRO's

WHAT:

- System were more than one PRO operates
 - Usually competitively
 - Usually within same product cluster

WHY:

- Structurally and operationally very complex especially in systems where:
 - PRO's are starting
 - Developing countries
- Operational challenges:
 - How do you allocate collection volumes?
 - How do you allocate recycling volumes?
 - How do you ensure collectors / recyclers aren't double dipping?
 - How do you divide up collection & recycling across the country and within counties/regions?
 - ONE : ONE => Simple
 - ONE : MANY => Manageable
 - MANY : MANY => COMPLEX

THREATS

PRO's Focus

WHAT:

- PRO's should NOT operate **conceptually** but rather **operationally**
 - Need to focus & create action based on measurable change; Fast
 - FOCUS on:
 - Collection / Recover
(being effective)
 - Recycling / Reuse / Repair etc
(being efficient)

WHY:

- PRO's are MEMBERSHIP based Organizations
 - **THINK** like a BUSINESS
 - **ACT** like a business
 - **BE** a business

HOW:

- Successful business is built on PROFIT / CASH
- Successful PRO's should be built on impact on:
 - Collection / Recovery
 - Recycling / Reuse / Repair / Redesign / Refusing etc

THREATS

VAT on Waste Sector

WHAT:

- VAT on Waste Sector encourages:
 - Informal sector
 - Non tax payment

WHY:

- Easier for PRO's to:
 - Subsidize
 - Create capacity
 - Create Awareness
- Ability to work through:
 - Community Based Organizations (CBO's)
 - Waste pickers
 - Recyclers
 - Small Enterprise / Entrepreneurs

HOW:

- ZERO rate / 5% VAT
 - Creates a shift from informal to formal
 - Higher NET revenue for Government

MRF's – Kenya Perspective

Municipal Solid Waste Streams in Nairobi



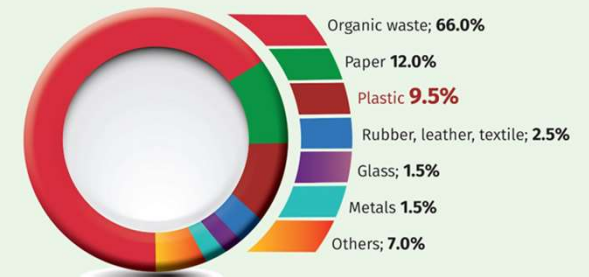
* source: Japan International Cooperation Agency (JICA) (2010). Integrated Solid Waste Management in Nairobi City in the Republic of Kenya. City Council of Nairobi, Kenya Plastic Action Plan (2019).

COLLABORATION

COMMITMENT

CIRCULAR ECONOMY

The Waste Problem in Kenya



Composition of generated waste in Kenya (JICA, 2010)

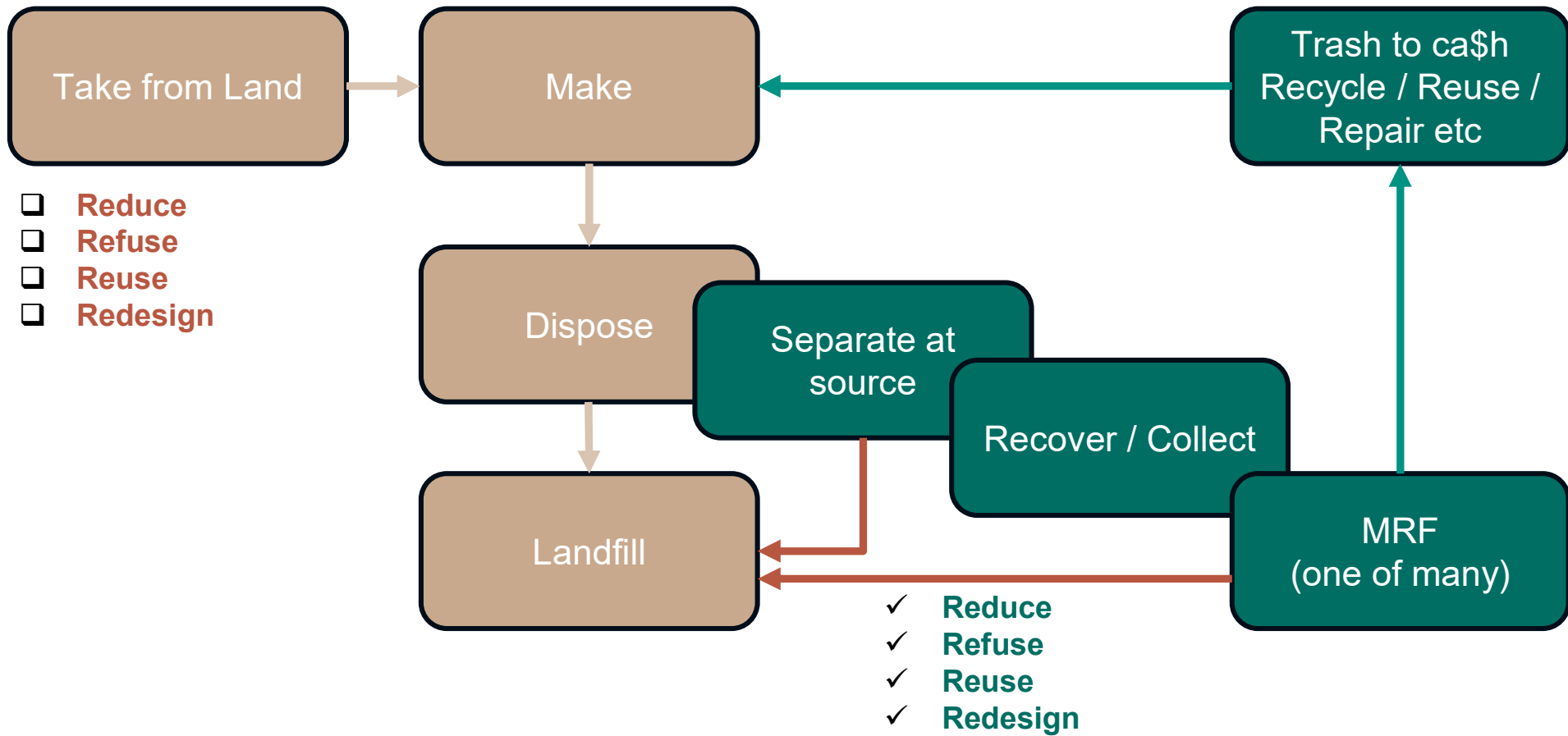
COLLABORATION

COMMITMENT

CIRCULAR ECONOMY

TRASH
↓
CASH

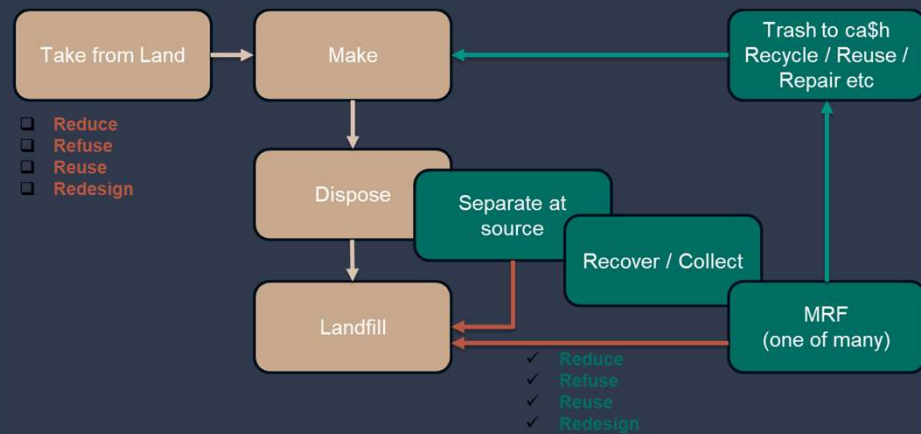
OPPORTUNITY



OPPORTUNITY

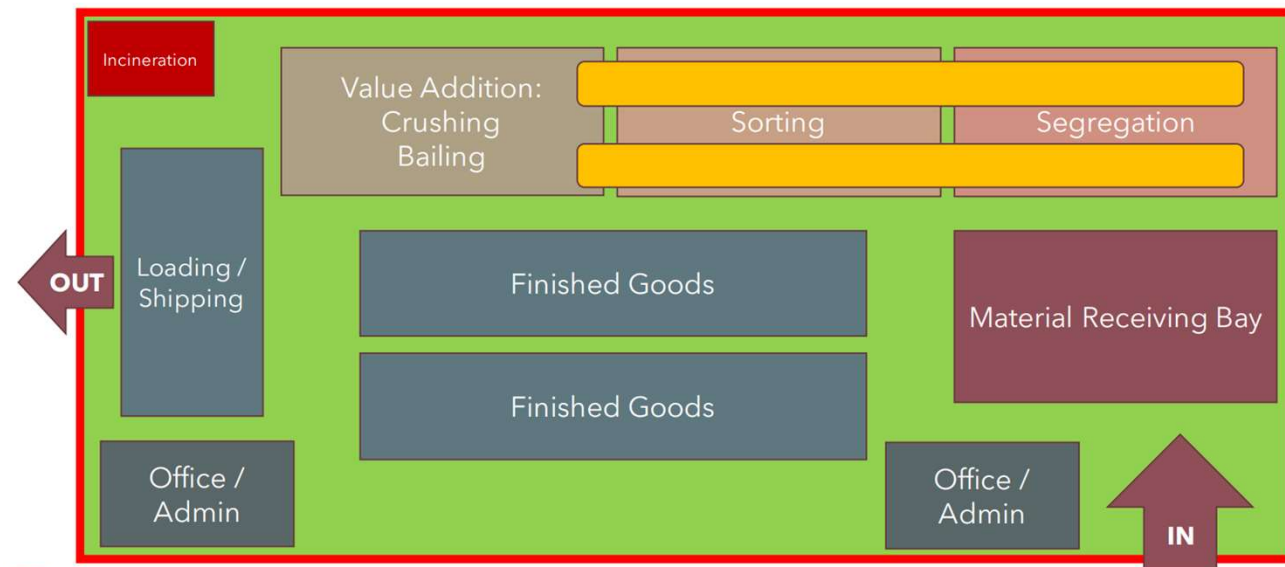
MRF's

(Material Recovery Facility)



WHAT:

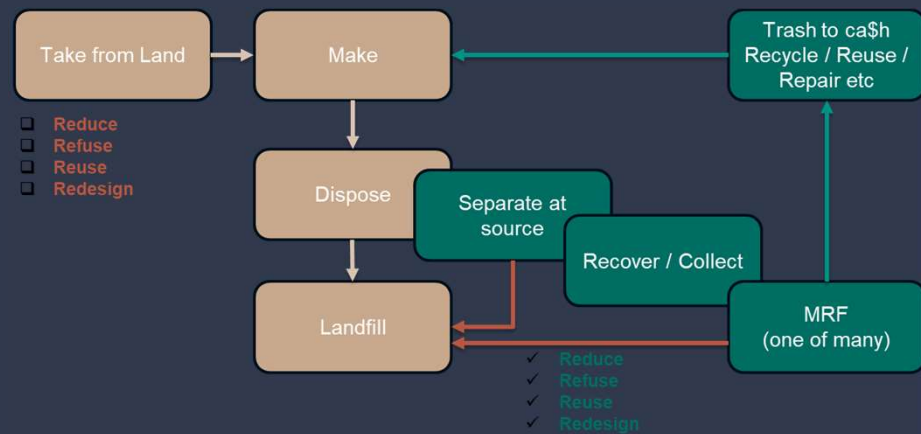
- A controlled and regulated area where:
 - Segregated, Post Consumer waste is taken for further value extraction before residual waste is sent for end-of-life disposal



OPPORTUNITY

MRF's

(Material Recovery Facility)



WHAT:

- A controlled and regulated area where:
 - Segregated, Post Consumer waste is taken for further value extraction before residual waste is sent for end-of-life disposal

WHY:

- MRF's allow for:
 - Maximum recovery from segregated waste
 - Maximum quality as waste is not contaminated
 - Ability for recyclers to buy volume for value

HOW:

- Create formal jobs from existing informal waste pickers
- Create standardized recovery, segregation, sorting and value creation chains (recycling, reuse, repair, waste to energy etc)
 - PRO's must help establish infrastructure to off take waste
 - ONLY RESIDUALS CAN BE SENT TO LANDFILL

Value creation through

- Jobs
- Trash to cash (segregated waste => supply creating demand)
- Volume to value (Recyclers able to feed their business)
- Waste to wealth (Recyclers able to get better quality and price)

It's here to stay ...



The Solution to Pollution...

Governments need to:

- ✓ Follow what works globally but implement what works locally...
- ❑ Start shutting down Landfills and mandate segregation at source policy's with waste going to **MRF's**
- ❑ Put **policy** in place mandatory PRO structures to allow for waste management
- ❑ Allow **Private** sector to operate PRO's
- **Manage it** vs ban it... many times the alternatives are worse
- ✓ Set **targets** & hold the PRO's accountable

Business's have mastered:

- ✓ Economics of supply chain from Land into your hands
- ✓ Sales, marketing & advertising of consumer awareness and consumption

Why can't we do the reverse?

- ❑ Environmental responsibility of Hand to Hand?
- ❑ Awareness and consumer habits to segregate
- ❑ Designing products and supply chains to reverse the waste management Tsunami

All at a cost of less than 0.5%

Pollution

Policy

Profit?

Call To Action

The Solution to Pollution

- Waste management is a growing problem ... GLOBALLY
- Our waste is going to outlive generations to come
= > NEED TO ACT NOW
- We need to follow what works global, but implement what works locally by:



Policy leading to Waste Management
(2-3 Years)



Voluntary PRO Pilots leading to **Mandatory Practice**
(1-2 Years)



Collective funding from Brand Owners & Raw materials Suppliers towards a common goal

- **Minimum 0.1% Allocation towards PRO's**

(1 year – Voluntary while Policy is regulated)



Hand to Hand / Trash to Cash

- **Segregations at source** (2-3 Years)
- Landfills => **MRF's** (3-5 Year)



**Waste Management:
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**Operational Excellence:
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Thank You



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