Basel Convention Coordinating Centre
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Ministerio de Vivienda
Ordenamiento Territorial
y Medio Ambiente
MVOTMA

Waste Management Plans

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A Waste Management Plan helps ensure that all waste is managed in a safe and sound manner, from its generation to its final disposal. It covers the following stages:

Generation

Characterization

Classification

Internal transport

Conditioning

Internal storage

External transport

Treatment

Final disposal

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SOME ADVANTAGES OF HAVING A WMP:

- ✓ Avoids mixing incompatible wastes
- ✓ Improves the quality of wastes that can be recovered or recycled
- ✓ Reduces the amount of hazardous wastes to be treated
- ✓ Essential to identify associated costs
- ✓ Increases safety of staff handling waste
- ✓ Avoids mixing wastes with raw materials
- ✓ Minimizes pollution hazards
- ✓ Ensures a proper destination for waste

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Waste Management Plan

DIAGNOSIS	INTERNAL MGMT.	EXTERNAL MGMT.
	No generation or minimization	
Generation	Classification and conditioning	External transport
Characterization	Handling	External treatment
	Internal transport	Final disposal
	Reuse and internal recycling	
	Internal storage	

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CHARACTERIZATION

The characterization of waste generated in a specific activity is the first step in developing an effective management plan.

It involves classification and quantification.

Based on the characterization, the storage, conditioning, transport, treatment and final disposal stages will be defined, according to the type and amount of waste generated.

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Classification

Classification involves a series of operations to define the physical, chemical and biological characteristics of a specific waste, based on which decisions can be taken to include it in one of the industrial waste management systems, to prevent its potential environmental impact.

- ✓ Collection of information (raw materials, process, quantities, etc.)
- ✓ Testing (ignitability, corrosivity, reactivity, toxicity, etc.)
- ✓ Analysis (pH, temperature, etc.)

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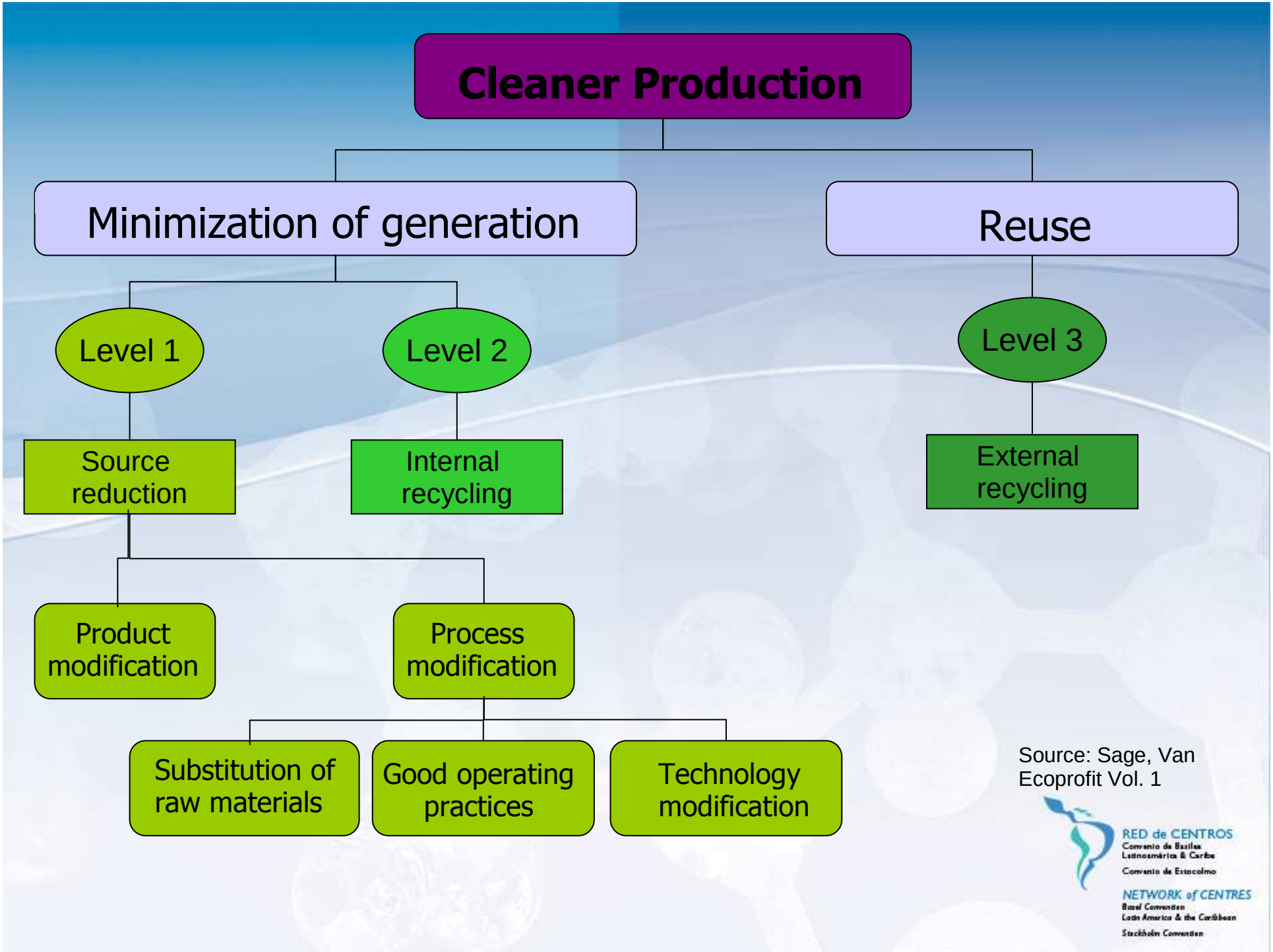

Source: Sage, Van Ecoprofit Vol. 1

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CLASSIFICATION AND CONDITIONING

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Classification

THE FIRST ACTION TO TAKE IN THE SOUND MANAGEMENT OF WASTE AND THE DEVELOPMENT OF A MANAGEMENT PLAN IS THE SEPARATION AT SOURCE

Definitely classify as:

Hazardous – their management will be different, depending on their hazardous characteristics

Similar to urban or non-hazardous – the better their classification, the greater the management opportunities will be

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Classification

- Within each category, more than one fraction can be defined
- It should be done in the point of generation of solid waste
- Avoid mixing waste that may present hazardous conditions when combined
- Avoid mixing solid waste with semi-solid waste
- Classify according to the potential for reuse, internal recycling and external treatment

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Classification

The mixture of incompatible waste may cause:

- heat generation
- fire or explosion
- generation of toxic gases and fumes
- generation of flammable gases
- solubilization of toxic substances, among others

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Classification

Incompatible wastes:

Table in page 90 of the Guidelines on the Integrated Management of Hazardous Wastes, Volume I – Fundamentals

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Classification – There is no international or national definition

Material	Color
Paper	Blue
Plastic	Red
Glass	Green
Metal	Yellow
Wood	Black
Hazardous	Orange
Health Services	White
Radioactive	Fuchsia
Organic	Brown
General waste, non-recyclable or contaminated, that cannot be separated	Grey

This is the Brazilian case, according to Brazilian regulations

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Classification | Segregation

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Conditioning

The type of conditioning depends on:

- type of waste
- generated amounts
- type of reuse, recycling, treatment or final disposal
- transport to be used

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Conditioning

At least take the following aspects into account:

- that the material of the container is compatible with the type of material it will contain
- airtight and stable
- resistant to small shocks
- its durability
- prevents water, rodents, insects from entering, depending on the type of waste being stored
- compatible with its future transport in terms of shape, size and weight
- capacity for the amount of waste to be stored, according to its frequency of lifting

Conditioning

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HANDLING

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Handling

It is usually carried out by unqualified staff, which may cause technical, economic and safety problems.

The proper handling of waste, while incurring costs, should not be underestimated, since an improper handling may pose serious risks to human beings and the environment.

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Handling

People involved in handling waste should be aware of the environmental aspects of their activities.

In many cases, waste does not show immediate effects, such as acute intoxication or burns. However, chronic effects, irreversible damage to the human body or even genetic or teratogenic damage can be observed over time.

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Handling

Aspects to be defined in a WMP and basic contents of training:

- Information regarding characteristics and risks associated with the treatment of each type of waste
- Guidance on the implementation of collection, transport and storage operations
- Proper use of any PPE required for the activities
- Emergency procedures in case of contact or contamination with waste, both for individuals and the environment. Contingency plans
- Identification of the person responsible for each task associated with industrial waste management

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INTERNAL TRANSPORT

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Internal Transport

- Point of generation
- Point of conditioning and/or storage
- Passable roads
- Height and width of roads
- Prohibited areas
- Shortest route
- PPE
- Contingencies
- Person responsible for each task

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Internal Storage

Aspects to be considered:

- Easy access for the type of transport that enters and removes the material
- Restricted access for company staff and third parties – signs indicating this prohibition
- Waste must be properly identified and placed in separate areas
- Impermeable floor and effluent drainage system (spill containment system)
- Study on waste incompatibility to avoid future storing of waste that, when combined, may present hazardous conditions

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Internal Storage

- Closed premises
- Prevailing wind direction
- Ventilation
- Safety equipment (e.g.: fire extinguishers outside)
- Determine frequency and form of site cleaning

- Water and energy
- Non-combustible and solid floors, walls and ceilings, of washable and easy to clean material
- Protection against arthropods and rodents

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Internal Storage

- Demarcation of areas
- Entry and exit log, stating type, quantity, place of generation, person responsible for its conditioning, type of transport and final destination
- Storage time consistent with its treatment or final disposal, as well as with the decomposition process

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