LIFE CITYAdaP3 Project

ENVIRONMENT AND MONITORING

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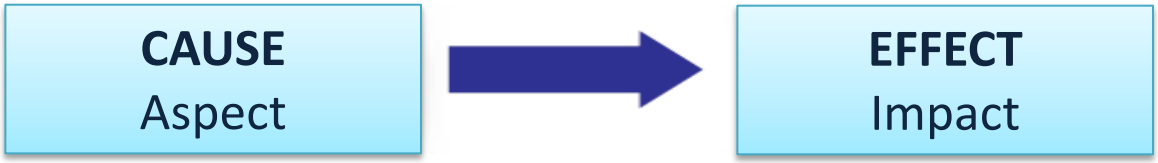
DECISION-MAKING IN ENVIRONMENTAL FIELDS

Every organization, as a consequence of their activities, have an effect in the environment, generating an **environmental impact** to a greater or lesser extent.

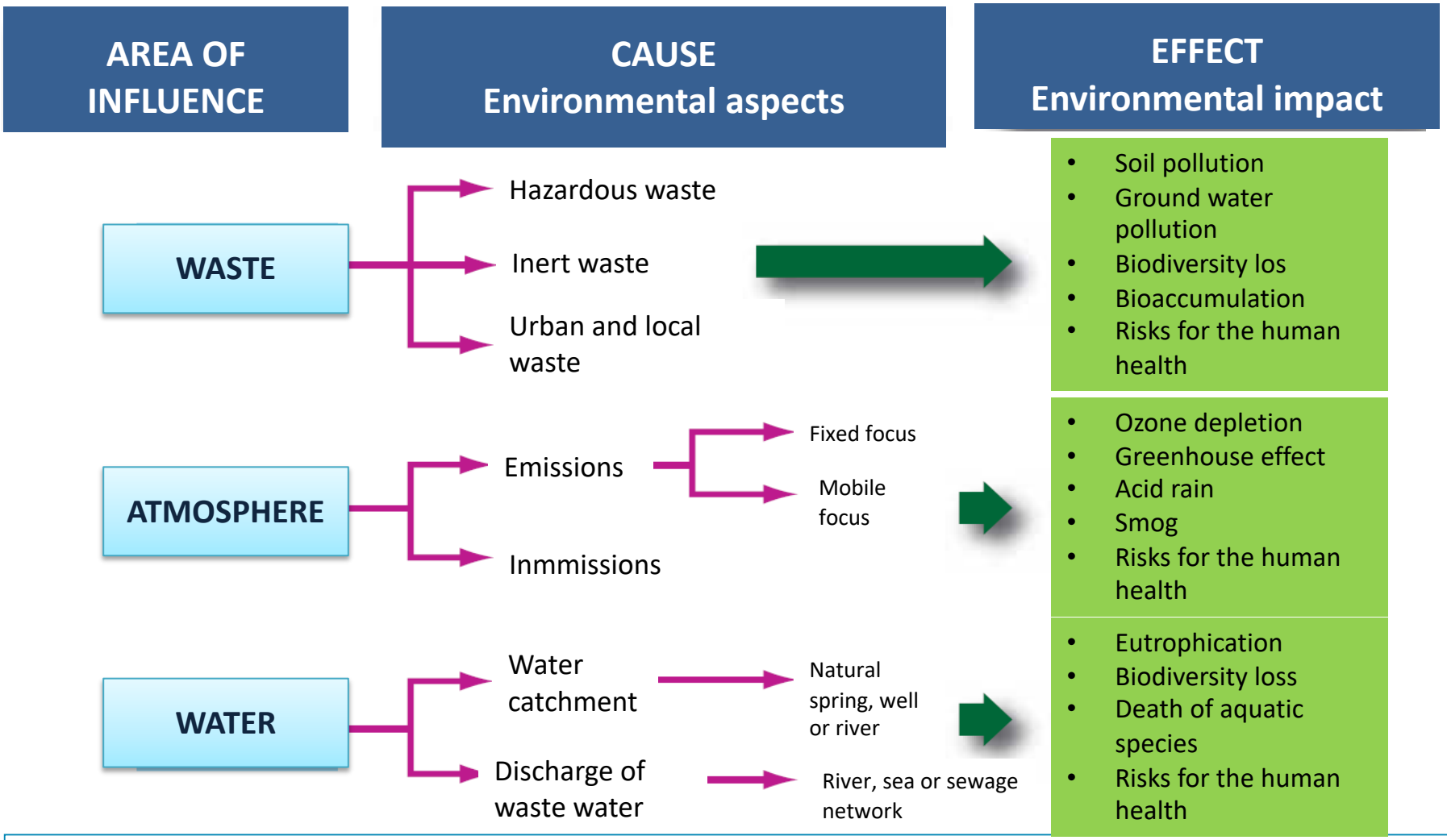
- **Environmental aspect:** element of the activities, products or services of an organization that may have an interaction with the environment.
- **Environmental effect:** any change, both adverse or beneficial, in the environment as a total or partial result of the environmental aspects.

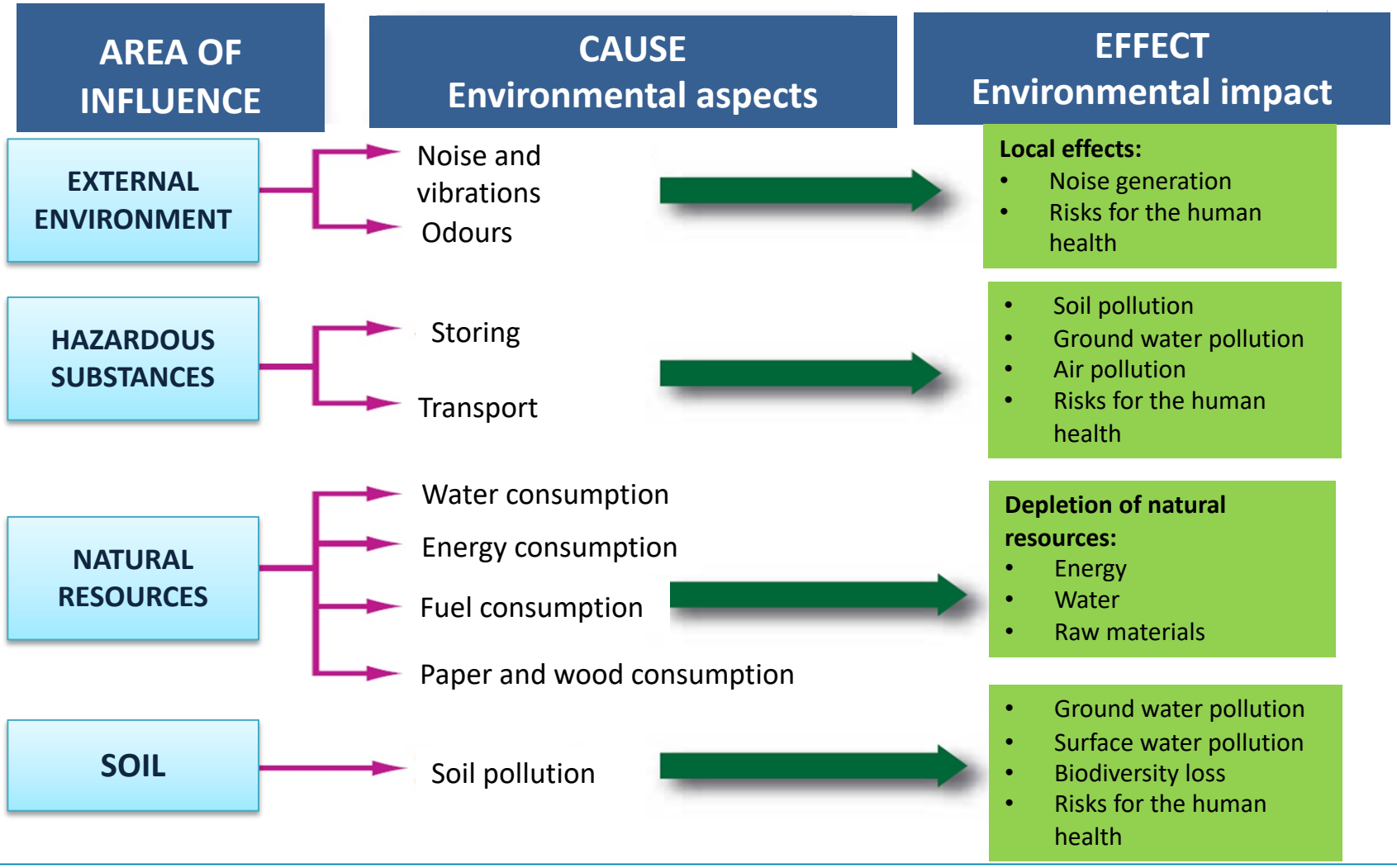


ANALYSIS OF THE SITUATION

Identifying the company's **environmental issues**:

- Consumptions
- Waste production
- Discharges
- Emissions to the atmosphea
- Use of the floor


AREA OF INFLUENCE
CAUSE Environmental aspects
EFFECT Environmental impact
WASTE
Hazardous waste
Inert waste
Urban and local waste
Soil pollution
Ground water pollution
Biodiversity los
Bioaccumulation
Risks for the human health
ATMOSPHERE
Emissions
Fixed focus
Mobile focus
Inmmissions
Ozone depletion
Greenhouse effect
Acid rain
Smog
Risks for the human health
WATER
Water catchment
Natural spring, well or river
Discharge of waste water
River, sea or sewage network
Eutrophication
Biodiversity loss
Death of aquatic species
Risks for the human health


AREA OF INFLUENCE
CAUSE
Environmental aspects
EFFECT
Environmental impact
EXTERNAL ENVIRONMENT
Noise and vibrations
Odours
Local effects:
• Noise generation
• Risks for the human health
HAZARDOUS SUBSTANCES
Storing
Transport
• Soil pollution
• Ground water pollution
• Air pollution
• Risks for the human health
NATURAL RESOURCES
Water consumption
Energy consumption
Fuel consumption
Paper and wood consumption
Depletion of natural resources:
• Energy
• Water
• Raw materials
SOIL
Soil pollution
• Ground water pollution
• Surface water pollution
• Biodiversity loss
• Risks for the human health

Identification of Aspects

- Normal functioning
- Abnormal functioning (shutdowns and start-ups)
- Accidents and emergency situations (past, current and expected)
- Indirect aspects where we have significant influence (suppliers, clients, outsourcing)
- New developments or plannings
- Life cycle perspective

RELATED TO ACTIVITIES, PRODUCTS AND SERVICES

ASPECTS

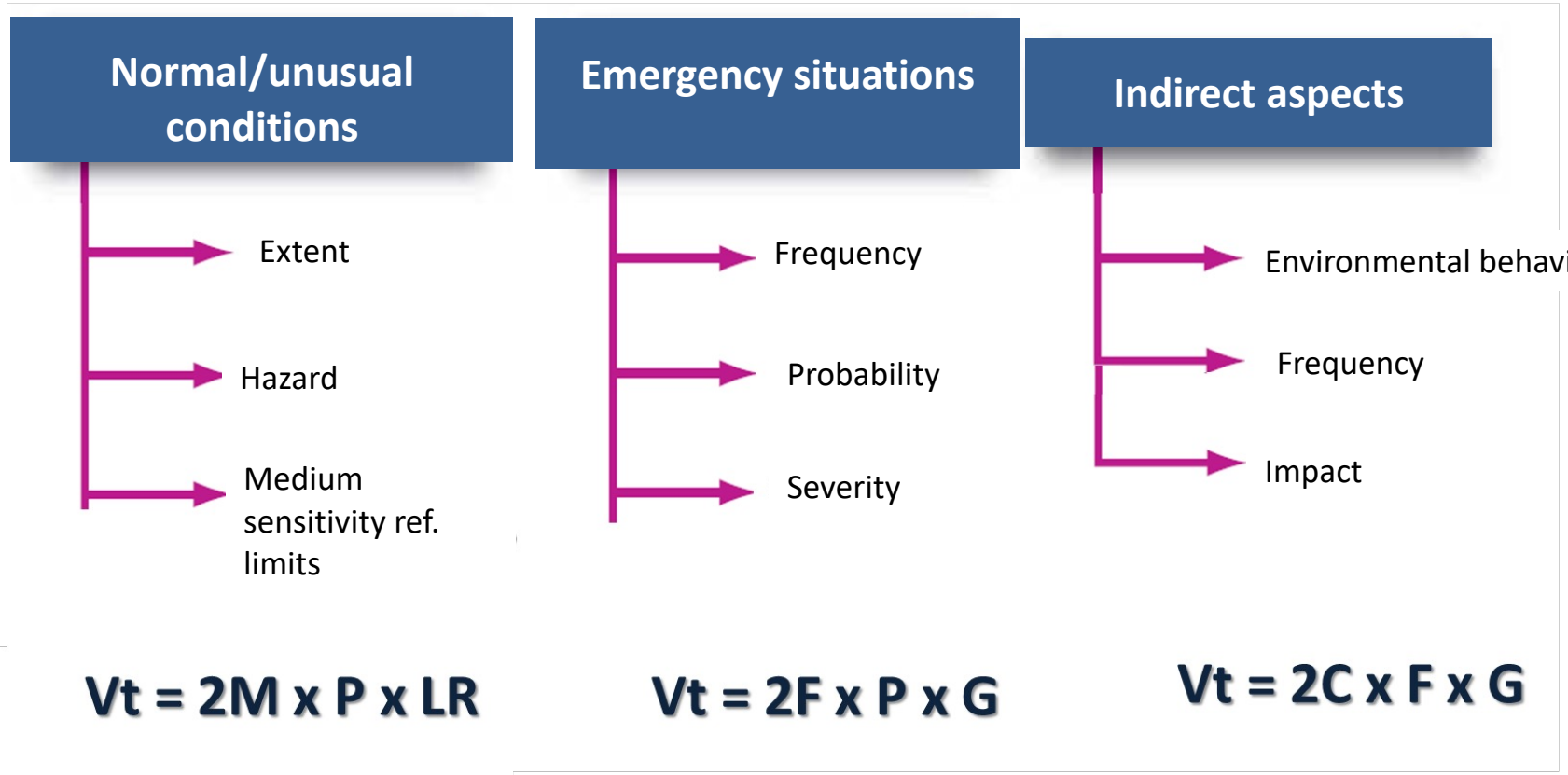

NORMAL
ABNORMAL
EMERGENCY
INDIRECT
Waste
Atmosphere
Water
External environment
Hazardous substances
Environmental resources
Soil
Field/activity

Evaluation of Aspects

Problems:

- There is a certain subjectivity in the identification and previous grouping of aspects
- This is attempted to be resolved by numerical methods:
  - Sometimes the proposed criteria avoid the fluctuation of the aspect's significance when facing important changes of the environmental behaviour.
  - Possibility of obtaining many significants, with the consequent difficulties for their management.
  - It wouldn't be feasible a company with "zero" significant aspects.

Criteria for the evaluation of aspects



Criteria in Normal Conditions

QUANTITY APPROACH			
Increase in more than 10% of the value of the reference year	Same as the reference year or increase of less than 10% of the value of the reference year	Decrease compared to the reference value	
3	**2**	**1**	**M value**
FREQUENCY APPROACH			
Duration between 75% and 100% of the activity's time	Duration between 50% and 75% of the activity's time	Duration < of 50% of the activity's time	
3	**2**	**1**	**M value**
EXTENT APPROACH			
Area susceptible of pollution > 50% of the total area	Area susceptible of pollution between 10% and 50% of the total area	Area susceptible of pollution < 10% of the total area	
3	**2**	**1**	**M value**

In order to define the **magnitude** of the environmental aspect, criterio of quantity, frequency, or extent will be used, depending the features of the aspect. In the first place we will identify the type of aspect, and use one of the three criteria to assign the Magnitude (M) value.

ENVIRONMENTAL ASPECT	P VALUE		
	3	2	1
Waste generation	Hazardous waste	Not hazardous waste	Waste similar to urban type
Energy consumption	Coal, fuel, Gas, Gasoline	Natural gas, conventional electricity	Renewable energies
Raw materials consumption	Inflamable, toxic, corrosive, but not harmful or irritating	Harmful, irritating	Not hazardous
Water consumption	Well	Other	General supply network
Soil pollution	All cases	-	-
Emissions to the atmosphere	No purification systems/reduction of emisión	Purification systems/ reduction of emissions	
Noises	Complaints about external noises	-	No complaints about external nouses
Generation of liquid effluents	-	All cases	-
Paper consumption in office	Not recycled or ecological criteria	Some recycled paper or with ecological criteria	Totally recylced

In this criteria, you can see better the perspective of the life cycle, giving a greater significance to those aspects that because of their relationship to their origin and the end of their life, are more harmful for the environment

	LR Value
Raw materials directly used in the activity	3
Auxiliary raw materials for the activity	2
Raw materials not used in the production process	1

	LR Value
Wastes directly produced in the activity	3
Wastes produced by auxiliary activities	2
Waste not directly produced by the activity (for example, consumable office materials, packaging materials, rubbish, fluorescent tubes)	1

	LR Value
Aspect value higher than 90% and up to 100% of the legal or reference limit	3
Aspect value between 80% and 90% of the legal or reference limit	2
Aspect value < 80% of the legal or reference limit, or without a reference limit	1

This criterion is linked to the incidence or impact on environmental aspects, **when they approach the legal limit**.

For the case of RAW MATERIALS / WASTE consumed for the activity, this value (called representativeness limit for this case), it is established according to the incidence of the valued aspecto on the process, in terms of its direct or indirect involvement as part of the principal processes performed during the activity.

Criteria in Emergency conditions

	F Value
It has happened more than 5 times in the last 2 years	3
It has happened between 2 and 5 times in the last 2 years	2
It hasn't happened, or it happened 1 time in the last 2 years	1

	P Value
The activity that generates the emergency happens daily	3
The activity that generates the emergency happens weekly	2
The activity that generates the emergency happens less than once a month	1

	G Value
External resources are needed for tackling the situation. Soil or water networks are damaged.	3
External resources are not needed for tackling the situation. Emissions and hazardous wastes are generated.	2
The situation is controlled by the organization. Emissions or hazardous wastes are not generated.	1

Criteria in Indirect Aspects

Suppliers environmental behaviour

They have implemented/certified an Environmental Management System (EMS)	1
They develop good environmental practices but they don't have an implemented/certified EMS	3
They haven't defined good environmental practices	5

Frequency

Continuous influence	1
Periodical influence	3
Occasional influence	5

Environmental impact

Low environmental impact	1
Medium environmental impact	3
High environmental impact	5

IDENTIFIED ENVIRONMENTAL FACTOR	EVALUATION CRITERIA				ASPECT CLASIFICATION	ORIGIN	ASSOCIATED IMPACT
	M	P	LR	Vt			
Hazardous raw materials consumption: GASOIL B	3	3	3	54	SIGNIFICANT	SUPPLIERS UNIT	Natural resources depletion
Hazardous raw materials consumption: LIQUID FOR CLEANING PIECES	3	3	2	36	SIGNIFICANT	VEHICLES MECHANIC WORKSHOP	Resources consumption, containers generation, soil pollution
Hazardous raw materials consumption: PAINTINGS	3	3	2	36	SIGNIFICANT	PAINT BOOTH	Resources consumption, containers generation, soil pollution
Hazardous raw materials consumption: SOLVENTS	1	3	2	12	NOT SIGNIFICANT	VEHICLES MECHANIC WORKSHOP /PAINT BOOTH	Resources consumption, containers generation, soil pollution
Hazardous raw materials consumption: SOAP	1	1	2	4	NOT SIGNIFICANT	VEHICLES MECHANIC WORKSHOP	Resources consumption, containers generation, soil pollution
A4 paper consumption in offices	1	1	1	2	NOT SIGNIFICANT	OFFICES	Natural resources depletion, waste generation
Electric energy consumption	3	2	1	12	NOT SIGNIFICANT	FACILITIES	Natural resources depletion

IDENTIFIED ENVIRONMENTAL FACTOR	EVALUATION CRITERIA F	P	G	Vt	ASPECT CLASIFICATION	ORIGIN	ASSOCIATED IMPACT	OBSERVATIONS
Floods	1	1	1	2	NOT SIGNIFICANT	RAINS/PIPING WATERS/WATER TANKS	Water from networks, surface and/or ground	ASPECT IN AN EMERGENCY SITUATION
Fire	1	3	1	6	NOT SIGNIFICANT	SUPPLIES UNIT/ PARKING AREAS/VEHICLES MECHANIC WORKSHOP	Emissions of polluting gases to the atmosphere	ASPECT IN AN EMERGENCY SITUATION
Spillage of stocked fuel	1	3	1	6	NOT SIGNIFICANT	SUPPLIES UNIT	Pollution of soil and water from the ground, surface and networks	ASPECT IN AN EMERGENCY SITUATION
Spillage of stocked hazardous raw materials	1	3	1	6	NOT SIGNIFICANT	RAW MATERIALS STORAGE	Pollution of soil and water from the ground, surface and networks	ASPECT IN AN EMERGENCY SITUATION
Accidental emissions caused by a wrong functioning	1	3	3	18	SIGNIFICANT	PAINT BOOTH	Emissions of polluting gases to the atmosphere	ASPECT IN AN EMERGENCY SITUATION

Features of the **indicators:**

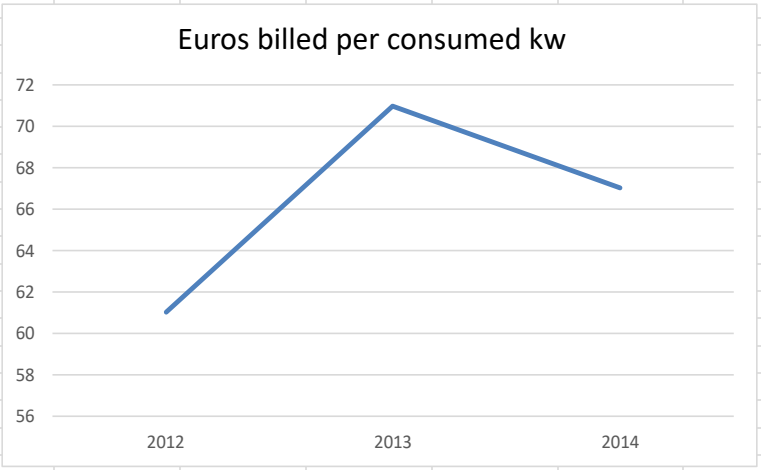
- They serve for measuring specific results: practical, clear, explicit, sensitive and verifiable
- They are quantifiable: Measurable, understandable and controllable.
- They must be trustworthy: Simple, suitable, useful and appropriate

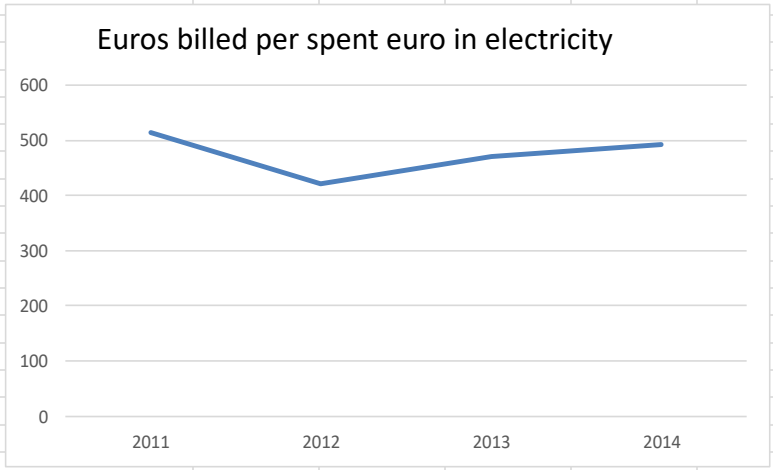
DECISSION MAKING

What is not measured is not controlled. If it is not controlled it is not managed. If it is not managed, it can't improve.

Indicators are the means, not the goal.

INDICATOR	SYSTEM OF COLLECTION	RESPONSIBLE	FREQUENCY	TYPE OF REPORT	VALUE OF REFERENCE
Gasoil consumption	Gasoil bought monthly	Environmental Responsible	Quarterly	Gasoil / total billing Graphic in comparison with the previous year	Same minimum as last year
Electricity consumption	Bills	Environmental Responsible	Quarterly	kw//total billing by location in comparison with the previous year. Graphic	Same minimum as last year
Water consumption	Bills	Environmental Responsible	Quarterly	Litros/total billing in comparinson with last year	Same minimum as last year
Waste	Removal of wastage and bills	Environmental Responsible	Yearly	Kg/total billing by type of waste	Same minimum as last year
Carbon Footprint	Ministry's calculator	Environmental Responsible	Yearly	Comparative graphics with the previous year	Same minimum as last year


Euros billed per consumed kw
72
70
68
66
64
62
60
58
56
2012
2013
2014

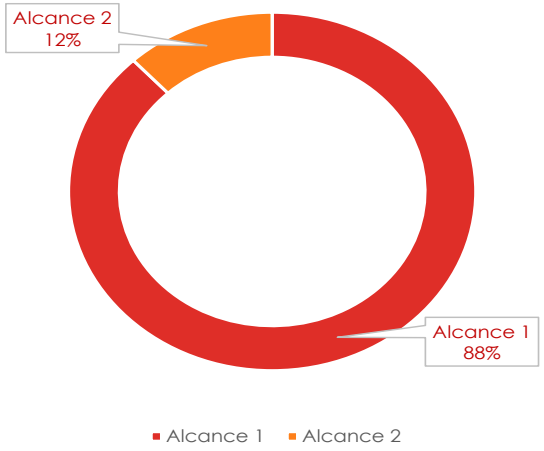

Euros billed per spent euro in electricity
600
500
400
300
200
100
0
2011
2012
2013
2014

What is the carbon footprint?

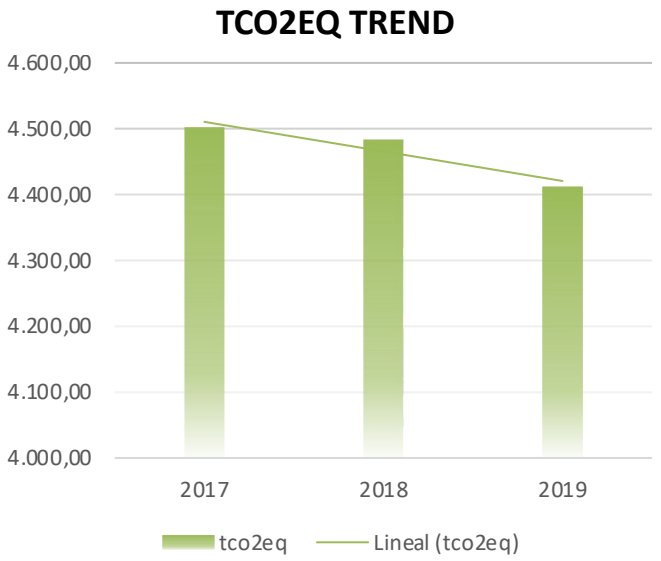
It's an [environmental indicator] that captures "total greenhouse effect gases produced directly or indirectly by a person, organization, event or product"

Carbon footprint is a parameter **representing total emissions of CO2** and other greenhouse effect gases **expressed by comparable CO2 mass** directly or indirectly caused by a producto, organization, service or evento during their life cycle.

2019 emissions by type of range



Range	Source	Emissions (tco2eq)
Range 1	Fuel + Fluorinated Gases	3.885,2966
Range 2	Electricity	526,66
Total		**4.411,9610**



Thank you very much!

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