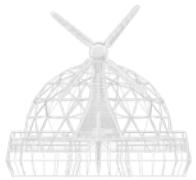
Blue Sky Explorer

Technical manual

LifeVairR

INTRODUCTION



Mission

Year 2070, the Earth is about to collapse. Human life and ecosystem are threatened by air pollution and climate changes.
But everything is not lost! You are part of the BlueSky Explorer crew, a ship able to go back in time to change History.

Your mission : Repair the mistakes made in the past, reduce pollution and save the planet!

BlueSky Explorer

BlueSky Explorer is an environmental intervention timeship.
Its most advanced technologies give its crew the power to travel trave through space and time and to act on the atmospheric pollution levels.

On board, several intervention modules allow you to act on various key-areas to lower pollutant emissions.

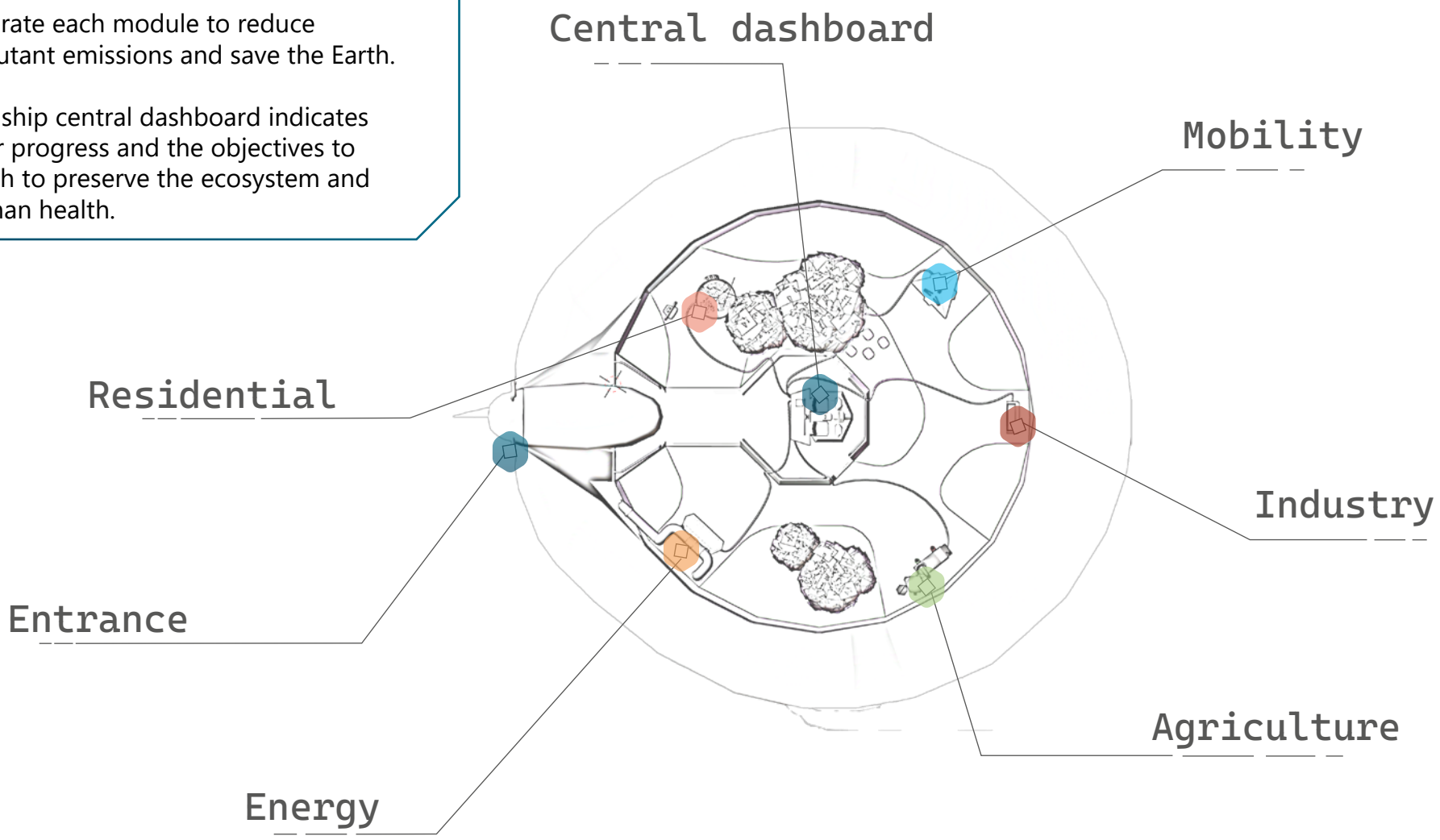
- Residential
- Mobility
- Agriculture
- Industry
- Energy

STATION PLAN

Objective

Operate each module to reduce pollutant emissions and save the Earth.

The ship central dashboard indicates your progress and the objectives to reach to preserve the ecosystem and human health.



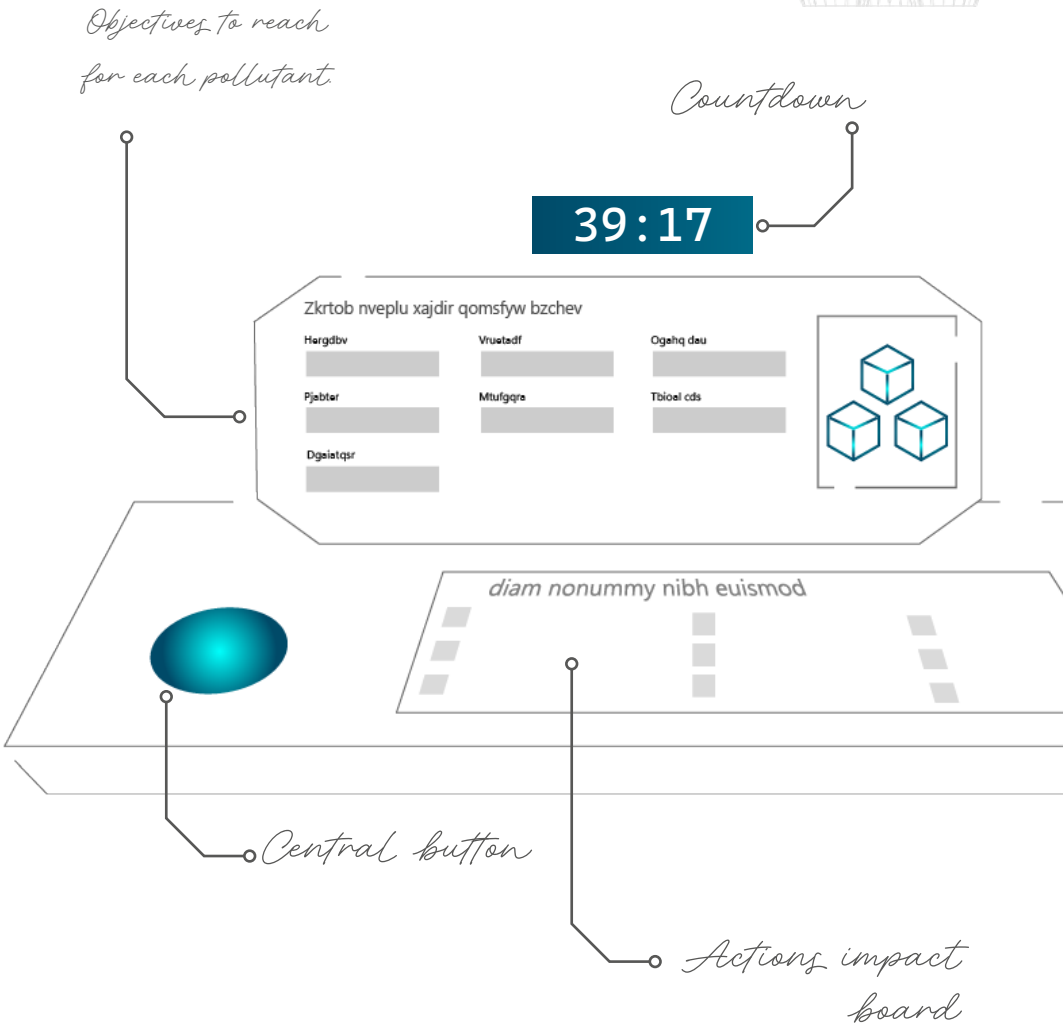
STATION OPERATION

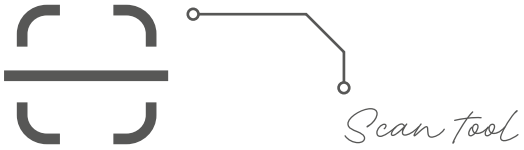
Read carefully before your mission

Important: Your crew partner is waiting for your instructions.
Without your help and this manual, he/she can't do anything.
Exchange continuously and guide him/her to achieve the mission!

- Activate the dashboard central button to start the modules.
- Once you achieve a module, reactivate the central button to view the impact of your actions en air pollution.
- Use the Scan tool to get information.

Pay attention to the countdown!
You have limited time to act!





RESIDENTIAL

Module operation

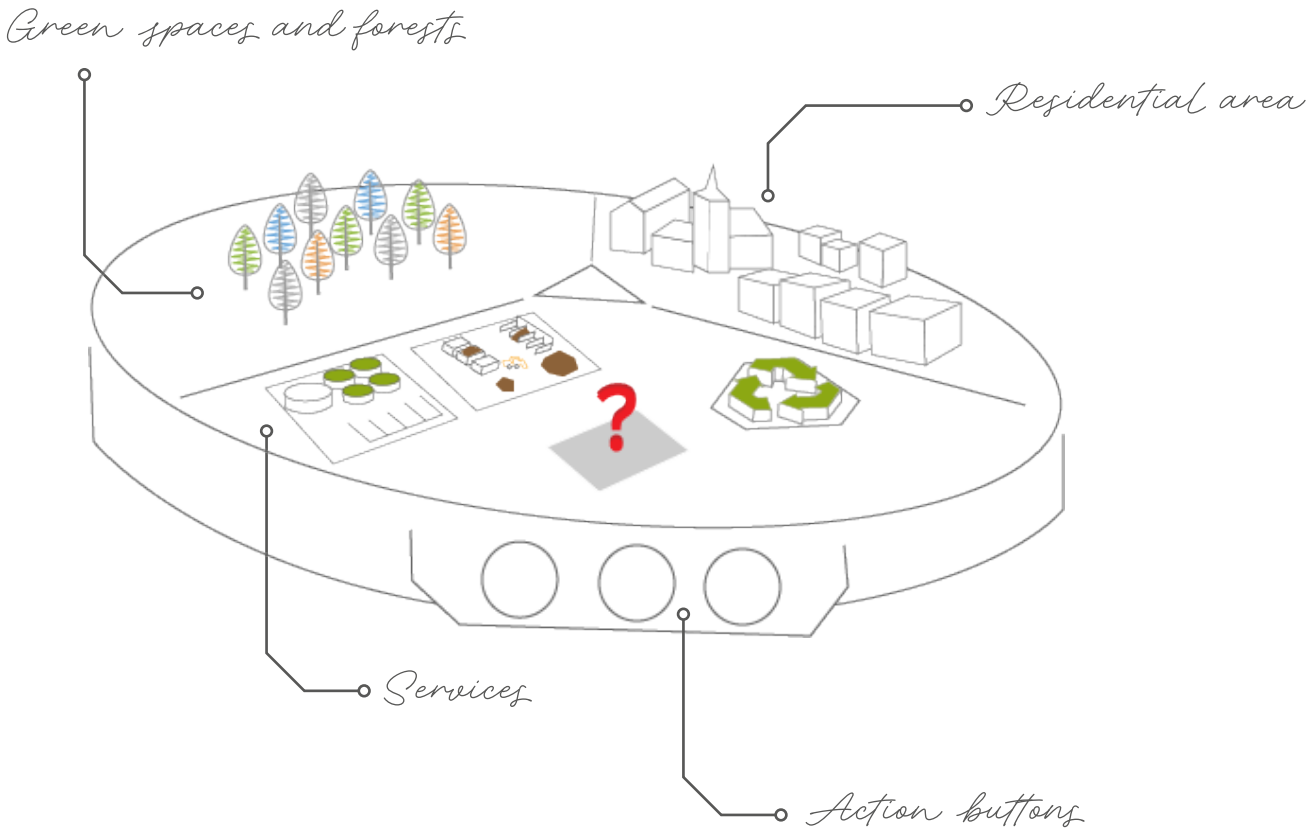
Mission : Reduce air pollution, improve people living conditions acting on 3 levels:

- Green spaces and forests
- Services
- Residential area
-

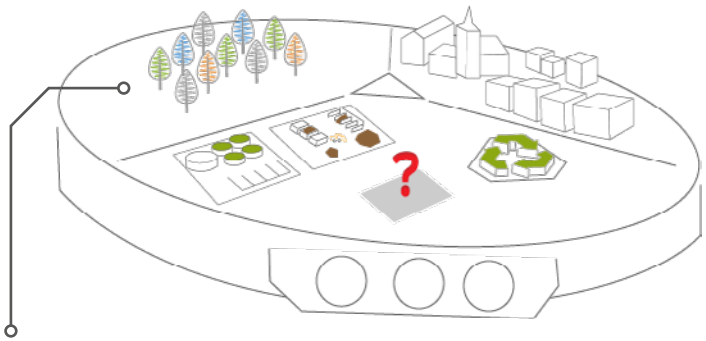
For each area:

1. Scan the available buttons
2. Select the most appropriate action to improve air quality.

Only one action per area is necessary.



RESIDENTIAL

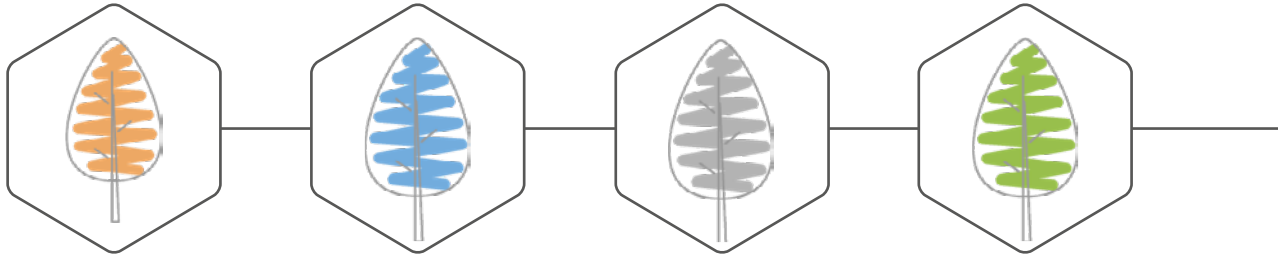


Green spaces and forest

Green spaces and forest

Here, the trees are giving you clues!
Select the action that would best protect the inhabitants health, according to their colours.

Don't forget to pay attention to the remaining time!



Orange

Poorly maintained bushes

Eases bushfires spread

Blue

Allergenic trees and plants

Grey

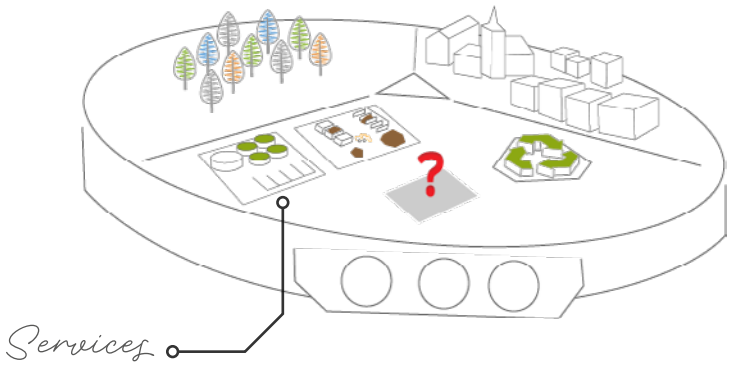
Insufficient vegetation

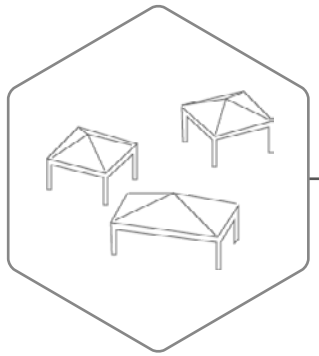
Generates heating island creation

Green

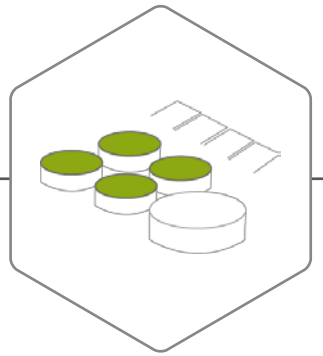
Adapted vegetation

RESIDENTIAL

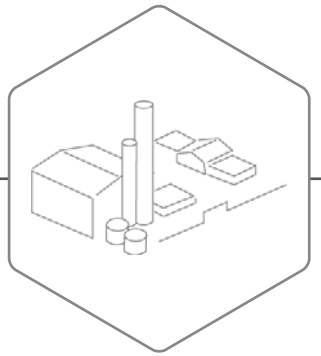




Public awareness event on the air pollution risks



Biogas production and capitalization from biodegradable waste



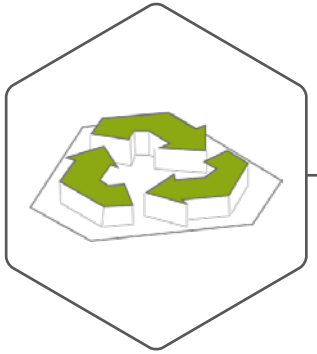
Heating network using renewable energies

To reduce the emissions

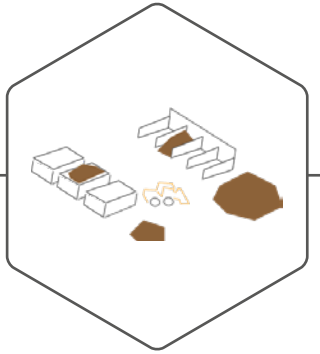
Services

One very essential service is missing to protect the inhabitants health.

Which one is it ?



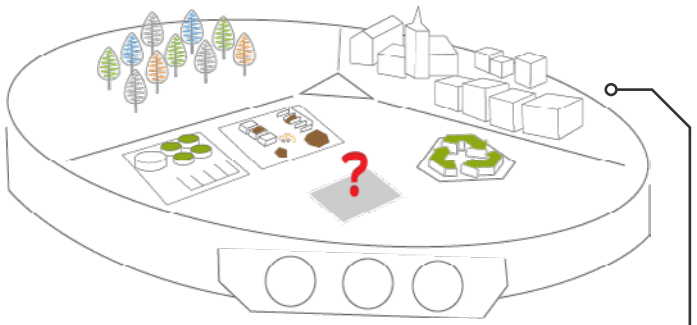
Awareness-raising center on waste reuse, sorting, recycling and zero-waste



Green waste disposal center

To fight against vegetal waste burning

RESIDENTIAL



Residential area

Residential area

Have a look at the icons on the buildings.
What is the problem to solve here?

Choose quickly the most effective action for this area!

More efficient/newer wood heating

Heating with oil

Gas heating

Low performance or old wood heating

Heat loss, insufficient insulation

High humidity inside the house, poor insulation.

High-performance insulation

Damp wood

Dry wood

Burning green waste

High emitter of fine particles

Coatings emitting indoor air pollutants

Unknown supplies used, probably emitting indoor air pollutants

Renovation underway with materials that do not emit indoor air pollutants

Heat pump

Good conditions for solar panels

MOBILITY

Module operation

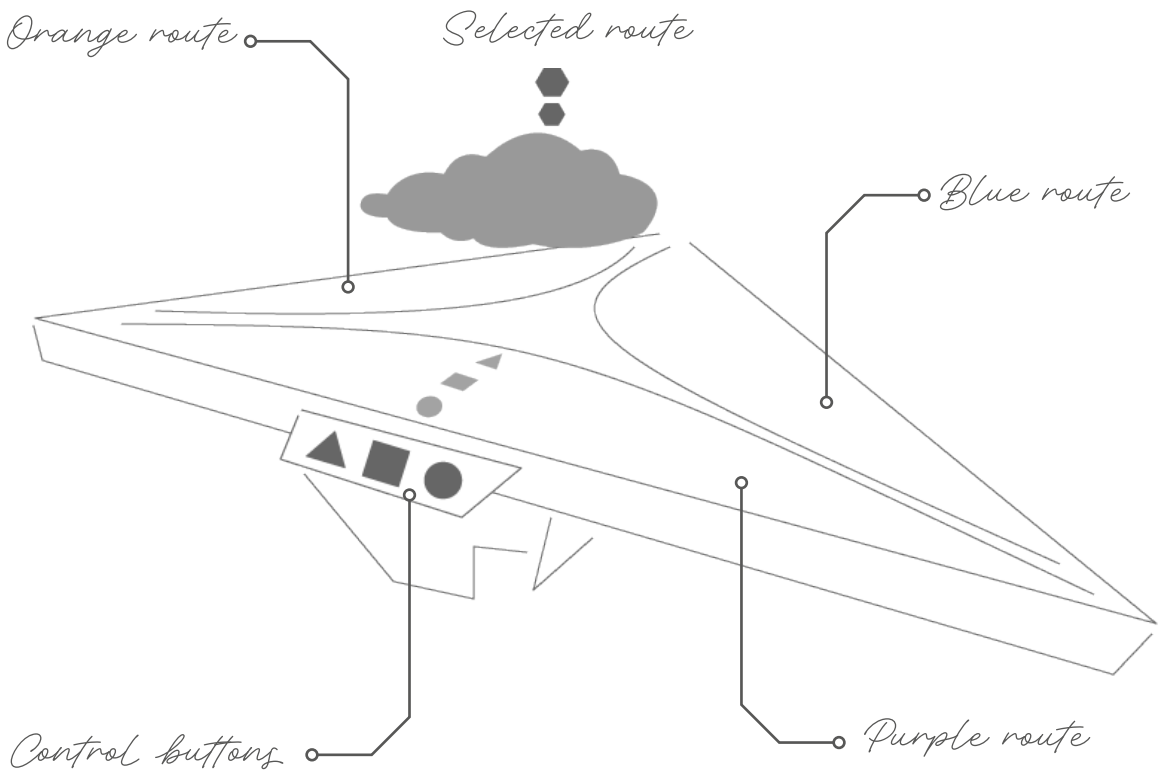
Mission : Reduce pollutions and noise by acting on a specfic route (short, medium, long).

1 **Identify** the kind of route you have to act on to use the associated table in the manual. The selected route (short, medium, long) appears in the cloud above the board.

2 **Scan** the buttons in each route (red, blue, purple) to obtain/to get the associated action and NOx reduction.

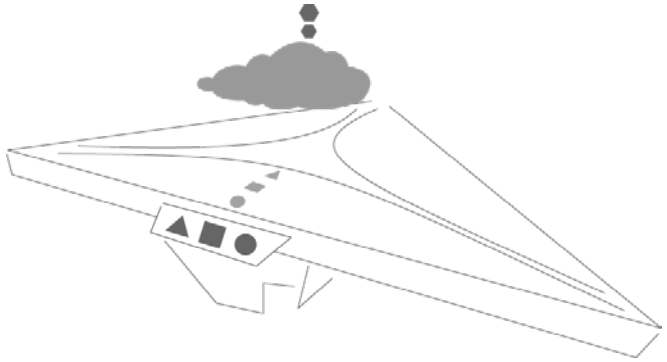
3 **Add** the NOx reduction to those of the other parameters in the table (PM10, Greenhouse Gas -GHG-, energy, noise...).

4 For eachroute, **select** the most effective overall action on pollution and nuisance reduction.



NOx = Pollutant emitted by thermal transport

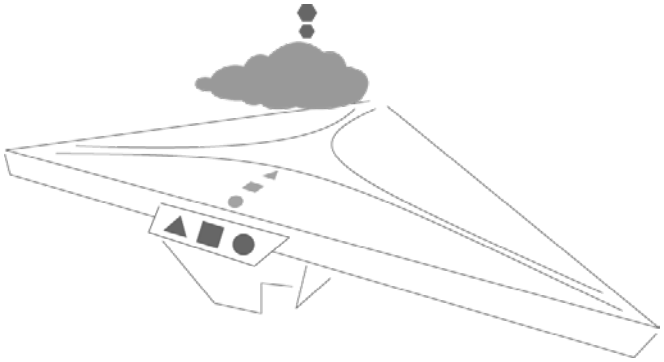
MOBILITY



Short distance
(0–4 km)

		PM10	Climate (GES)	Energy	Space	Noise	Acceptation	Health	Subtotal		NOx		Total
Purple	Develop low-emission last mile deliveries (commercial activities)	-1	0	0	-1	-1	0	-1	-4	+	SCAN	=	
Purple	Reduce parking spaces for non-residents	-1	-1	-1	-1	0	+2	0	-2		SCAN		
Purple	Organize consultations with residents to implement soft mobility initiatives	-1	-1	-1	0	-1	-2	-1	-7		SCAN		
Orange	Limit speed to 30 km/h in all urban areas	0	0	-1	0	-2	0	0	-3		SCAN		
Orange	Offer efficient public transport (shuttles, minibuses)	-2	-2	-2	-1	0	-1	0	-8		SCAN		
Orange	Create a low-emission zone (LEZ) in dense urban areas (limit polluting vehicles)	-2	-2	-2	0	0	+4	-1	-3		SCAN		
Blue	Develop shared pedestrian/bicycle/car lanes and safe bicycle routes	-2	-2	-1	-1	-1	-1	-1	-9		SCAN		
Blue	Raising awareness on the negative impacts of short car journeys	-1	-1	-1	-1	-1	-1	-1	-7		SCAN		
Blue	Help residents adopt a new mode of transport	-2	-2	-1	-1	-1	-1	0	-8		SCAN		

MOBILITY

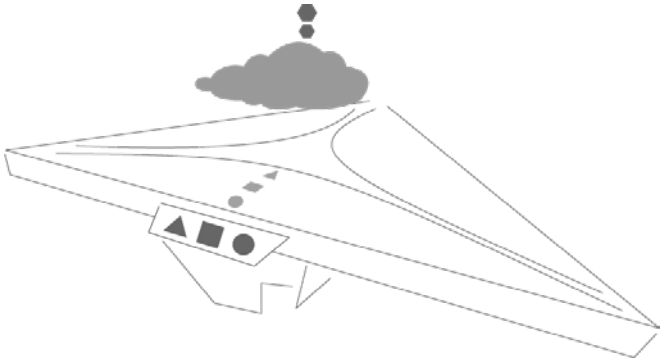


Medium distance
(4–15 km)

		PM10	Climate (GES)	Energy	Space	Noise	Acceptation	Health	Subtotal		NOx		Total
Purple	Develop carpooling through subsidies or create a carpooling area	-2	-1	-1	-1	-1	-1	-1	-8	+	SCAN	=	
	Create local subsidies to encourage the purchase of electric cars	-2	-1	-1	0	-1	-1	-1	-7		SCAN		
	Encourage better combustion engines	-1	-1	-1	0	0	-1	0	-4		SCAN		
Orange	Develop free/reduced-price park-and-ride facilities or intermodal hubs	-2	-2	-2	0	-1	0	-1	-8		SCAN		
	Develop dedicated lanes for public transport	-1	-1	-1	-1	-1	+2	-1	-4		SCAN		
	Increase public transport network and frequency	-2	-2	-2	0	0	0	-1	-7		SCAN		
Blue	Develop safe bicycle paths	-2	-2	-2	0	-1	-1	-1	-9		SCAN		
	Set up a bicycle rental system	-2	-2	-2	0	0	-1	-1	-7		SCAN		
	Develop car-sharing	-1	-1	-1	-1	-1	-1	0	-6		SCAN		

MOBILITY

Long to very long distance



		PM10	Climate (GES)	Energy	Space	Noise	Acceptation	Health	Subtotal		NOx		Total
Purple	Create local subsidies to encourage the purchase of cars with a lower environmental impact	-1	-1	-1	-1	-1	-1	0	-6	+	SCAN	=	
	Promot teleworking	-4	-4	-4	-1	-1	-1	0	-12		SCAN		
	Develop carpooling through subsidies or create a carpooling area	-2	-2	-2	-1	-1	0	0	-8		SCAN		
Orange	Develop dedicated lanes for public transport	-2	-2	-2	-1	-1	-1	-1	-10		SCAN		
	Promote the re-establishment of train lines or create a train subscription system/program	-3	-3	-3	0	0	-1	0	-10		SCAN		
	Improve public transport network and frequency	-3	-3	-3	-1	0	0	-1	-11		SCAN		
Blue	Encourage the replacement of plane journeys of less than 3 hours by train journeys	-2	-2	-2	-1	-1	+1	-1	-8		SCAN		
	Expand the electricity supply network (charging points for cars, dockside power supply for boats)	-1	-1	-1	-1	-1	-1	-1	-7		SCAN		
	Develop free/reduced-price park-and-ride facilities or intermodal hubs	-2	-2	-2	0	-1	-1	-1	-9		SCAN		

AGRICULTURE

Module operation

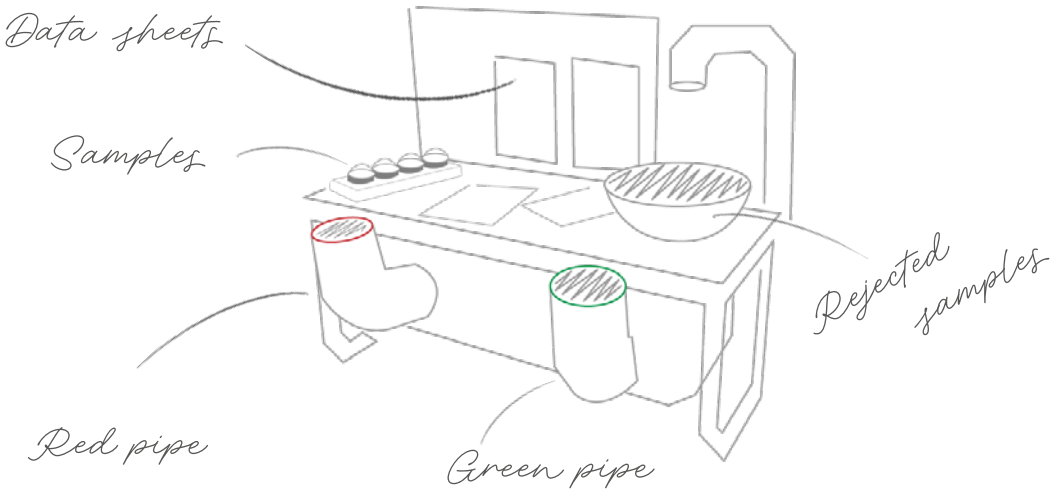
Mission : Identify the sustainable agriculture taking into account various factors.

1 Take a look at the sample to identifiy to the appropriate farming production.

2 Link the sample to its corresponding data sheet, which will give information on the harvest period and farming practices.

3 Also take a look at the sample's soil condition. Its quality will give you clues on the use of pesticides and fertilizer.

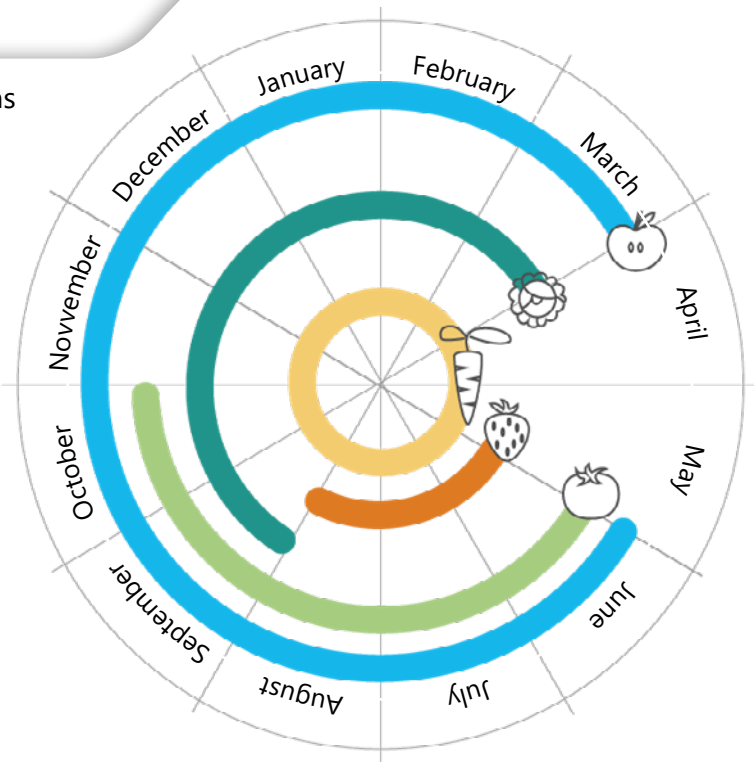
4 Take into account all these elements to sort each production. Place the most sustainable productions in the green pipe, and the most harmful for the environment in the red pipe.



Badly sorted samples will be rejected ans will fall back into the bowl.

Harvest period

Harvesting periods according to the seasons



AGRICULTURE

Soil condition



Blue crystals

Large amounts of fertilizer
Potentially harmful to aquatic environments (eutrophication)

Green crystals

Excessive use of pesticides
Potential negative impact on health



No crystals

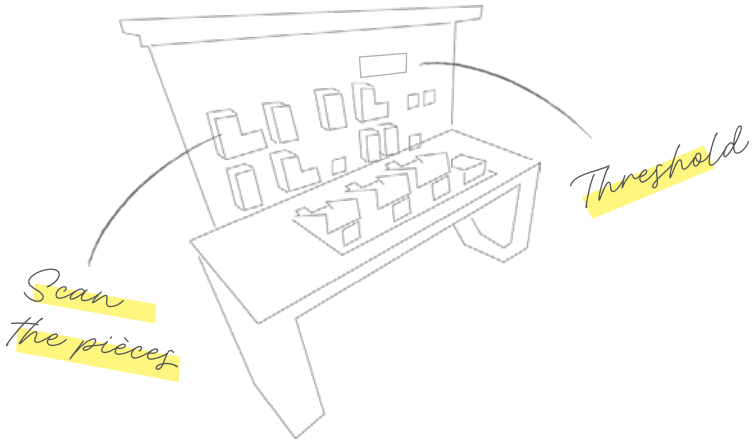
The farm uses fertilizers and pesticides correctly

Farming practices

Check the table to see if farming practices are virtuous or not

Farming practices	Particles	Ammoniac NH_3	Nitrogen oxides NO_x	Pesticides	GHG CO_2, methane CH_4, nitrous oxide N_2O
Good management of livestock manure		↓			
Open burning, eco-burning	↑		↑		↑
Greenhouse heating production			↑		↑
Treated fields close to homes				↑	
Short supply chains, local agricultural projects with outlets nearby					↓
Sustainable agricultural practices: permaculture, agroforestry, agroecology, etc.				↓	
Buying local feed for livestock					↓

INDUSTRY



Module operation

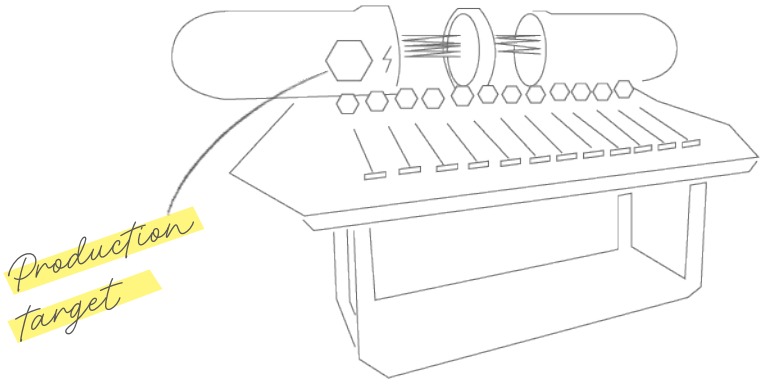
Mission: Find the best practices to reduce industrial pollution.

1. Scan each piece hanging on the workbench to see the corresponding action and icon.
2. Consult the manual to get the impact score (generated pollution) link to each piece.
3. Fill in all the spots on the plan with the available pieces. Pay attention that the icons are matching with the spots on the plan.
4. Sum up all the pieces impact scores.

To succeed the mission, the total must by lower than the limit/threshold.

Description	Pollution impact
No communication to encourage reduced consumption of natural resources: reuse, recycling, recovery, etc.	+6
No response to residents' complaints about smell nuisance	+2
Organize exchanges between citizens and industries	-2
Organize meetings with local industries about air pollution and climate change.	-5
Support industrial companies in reducing energy consumption in their buildings	-5
Encourage industrial companies to improve the treatment of their atmospheric emissions	-2
Promote sustainable logistics solutions for industries in its territory	-3
Encourage industries to implement decarbonization measures	-3
Encourage companies to implement an ambitious CSR policy	-5
No penalties for burning biomass or other waste on construction sites	+5
Purchase of products that do not comply with eco-responsible rules	+3
Organize air quality monitoring around facilities	-2
Promote the circular economy as part of a regional industrial economy dynamic	-3
Provide the territory with recycling infrastructures that are adapted and accessible to industrial and tertiary actors.	-1
Cooperation with federations and producers to organize waste prevention actions	-3

ENERGY



Module operation

Mission: Adjust the territory's energetic mix to reach the energy production target while keeping the environmental impact to its minimum.

1. Identify the available resources of energy,
2. Scan each method to bring light on hidden specific counterparts (price, acceptability, space).
3. Calculate the amount/the quantity of energy produced by combining the scanned data with those in the manual.
4. Adjust the cursor related to each production resource according to your calculation to reach the production target indicated by the machine.

Biomass

SCAN	+ 1	+ 3	+ 0	+ 5
Air	Price	Acceptability	Surface	Climate impact

Nuclear power plant

7	+ 8	+ SCAN	+ 7	+ 7
Air	Price	Acceptability	Surface	Climate impact

Biogas

3	+ 0	+ 0	+ 0	+ SCAN
Air	Price	Acceptability	Surface	Climate impact

Environmental heat

SCAN	+ 1	+ 1	+ 1	+ 3
Air	Price	Acceptability	Surface	Climate impact

Hydroelectric Power Plant

1	+ 0	+ 0	+ 0	+ SCAN
Air	Price	Acceptability	Surface	Climate impact

ENERGY

Wind turbines



SCAN + 1 + 0 + 1 + 4

Air | Price | Acceptability | Surface | Climate impact

Wave energy



SCAN + 0 + 0 + 0 + 1

Air | Price | Acceptability | Surface | Climate impact

Fossil fuels



−5 + 10 + 45 + 0 + SCAN

Air | Price | Acceptability | Surface | Climate impact

Biofuel



SCAN + 1 + 1 + −1 + 2

Air | Price | Acceptability | Surface | Climate impact

Photovoltaic panel



3 + 0 + 0 + 0 + SCAN

Air | Price | Acceptability | Surface | Climate impact

LifeV.aiR

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Technical manual version: 2025-02-21