

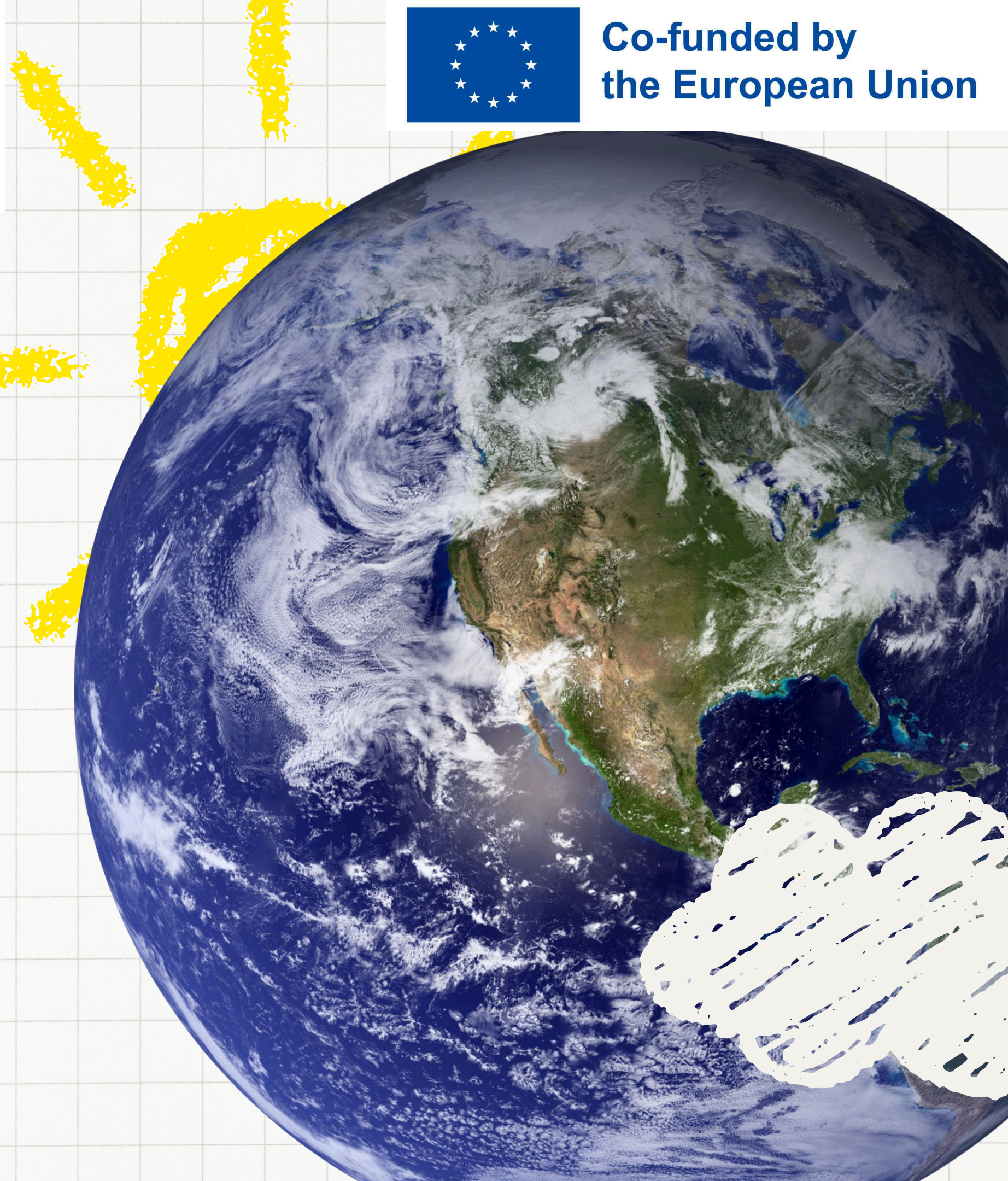


WATER HARVESTING



Portuguese Team

ALARMS RINGS FOR ALL OF US: SAVE WATER!



INTRODUCTION TO WATER HARVESTING

Water harvesting is the process of collecting and storing rainwater, fog, or dew to meet various water needs. This introduction explores the diverse techniques used to harness these precious water sources.

Let's talk about this process!



RAINWATER HARVESTING

ROOFTOP COLLECTION

Rainwater is captured from rooftops and stored in tanks or cisterns for future use, such as irrigation or household needs.

GROUND CATCHMENTS

Strategically placed ground-level basins and reservoirs collect runoff water during rainy seasons for groundwater recharge.

RURAL APPLICATIONS

In rural areas, rainwater harvesting provides a reliable water source, especially in regions with limited access to municipal supplies.



FOG WATER COLLECTION

1

FOG NETS

Specially designed mesh nets strategically placed in foggy areas capture water droplets, which then drain into collection vessels.

2

COASTAL REGIONS

Fog harvesting is particularly effective in coastal regions, where persistent fog provides a consistent water source.

3

SUSTAINABILITY

Fog water collection is a sustainable and environmentally friendly approach, as it does not deplete groundwater or surface water resources.



DEW HARVESTING

1

RADIATIVE COOLING

Dew is formed through the process of radiative cooling, where surfaces lose heat and temperature drops below the dew point.

2

PASSIVE COLLECTORS

Dew is collected using passive devices, such as coated plates or mesh structures, that promote water condensation.

3

ARID REGIONS

Dew harvesting is particularly useful in arid and semi-arid regions, where it can provide a supplementary water source.



GROUNDWATER RECHARGE



PERCOLATION PONDS

Shallow basins that allow surface water to slowly infiltrate and recharge the underlying aquifer.



INJECTION WELLS

Boreholes used to directly inject water into the aquifer, replenishing groundwater reserves.



CHECK DAMS

Small dams that impede surface water flow, allowing it to seep into the ground and recharge groundwater.



GREYWATER RECYCLING

WATER CONSERVATION

Greywater recycling reduces the demand for freshwater by reusing water from sinks, showers, and washing machines.

IRRIGATION

Greywater can be used to irrigate gardens and landscapes, reducing the need for potable water consumption.

HOUSEHOLD REUSE

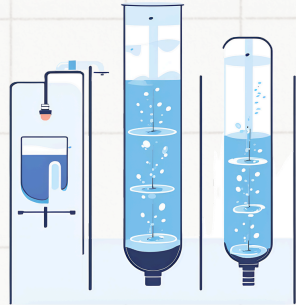
Treated greywater can also be used for flushing toilets, further decreasing the reliance on freshwater supplies.

ENVIRONMENTAL BENEFITS

Greywater recycling helps to conserve valuable water resources and reduce the strain on wastewater treatment systems.

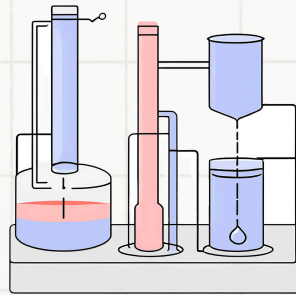


DESALINATION TECHNIQUES



REVERSE OSMOSIS

Utilises high-pressure membranes to remove salts and minerals from seawater or brackish water.



THERMAL DISTILLATION

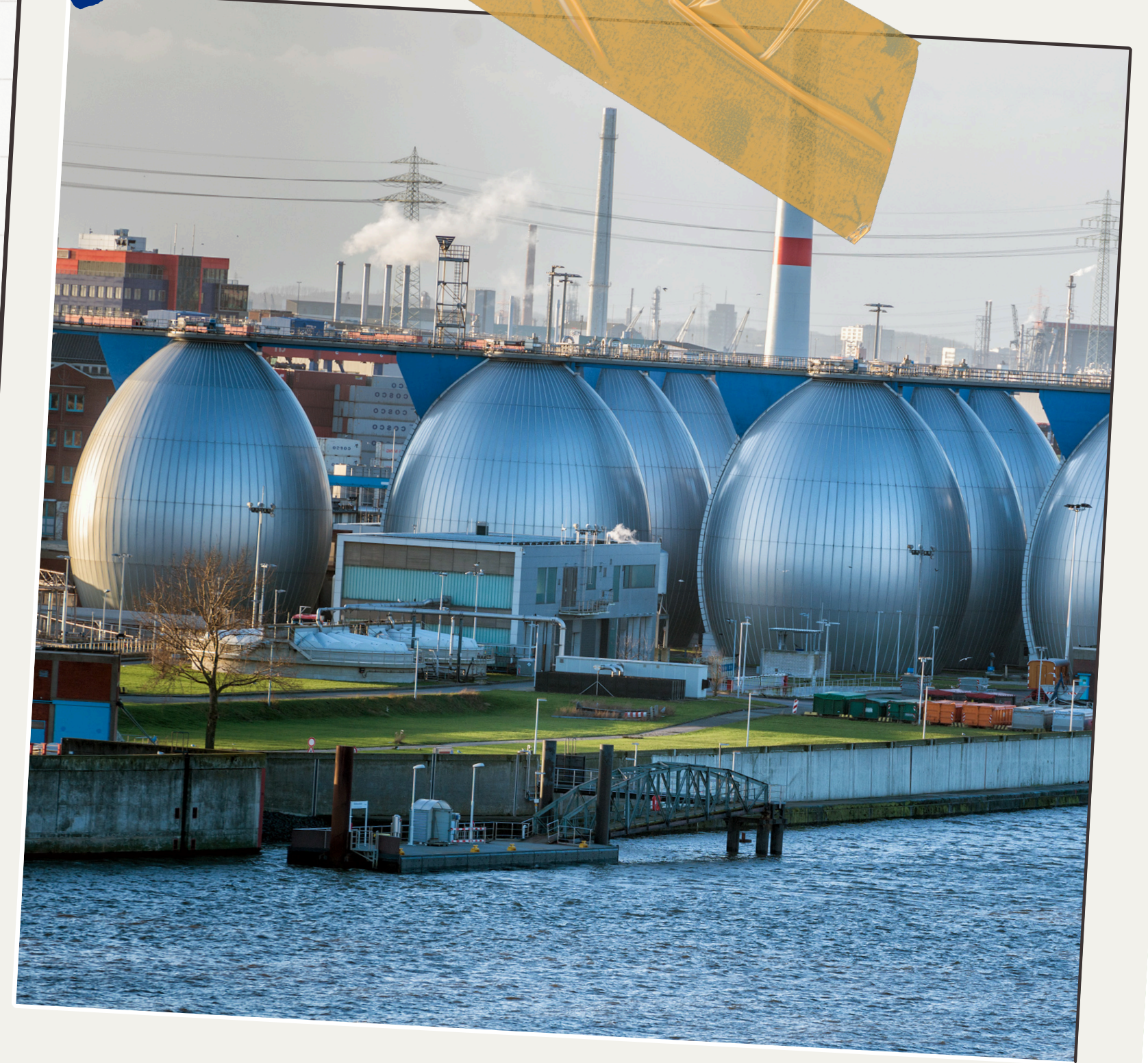
Involves heating water to produce steam, which is then condensed and collected as freshwater.



Gerado com IA com o
Copilot Design

ELECTRODIALYSIS

Applies an electric current to draw salts and minerals out of the water through ion-exchange membranes.



CONCLUSION AND FUTURE OUTLOOK

1

INTEGRATED APPROACH

The future of water harvesting lies in the integration of multiple techniques to create comprehensive, sustainable water management systems.

2

TECHNOLOGICAL ADVANCEMENTS

Ongoing research and development will lead to more efficient, cost-effective, and environmentally friendly water harvesting technologies.

3

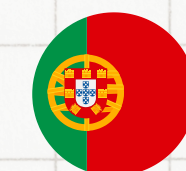
WIDESPREAD ADOPTION

As water scarcity intensifies, the widespread adoption of water harvesting practices will become crucial for ensuring long-term water security.



ALARMS RINGS FOR ALL OF US: SAVE WATER!

THANK YOU!



Portuguese Team