



Erasmus+



*“Do not let water leave us”*

*Water resources  
in Portugal*

**EB1/PE das Figueirinhas**

**Portugal**

**Madeira**

Portugal Population (LIVE)

**10,228,179**







LIZ  
es

Santa Cruz da Graciosa  
Angra do Heroísmo  
Vejas  
Horta  
Lajes do Pico

Ponta Delgada

Vila do Porto

Portugal

Lisboa

Porto

Aveiro

Coimbra

Vigo

Albufeira

Faro

Camadas



Vila Baleira  
Funchal

Rabat  
الرباط  
Casablanca  
الدار البيضاء





Vila Baleira

## Porto Santo



MADEIRA

Porto Moniz

Ponta do Pargo

Paúl do Mar

Ponta do Sol

Funchal

Madeira

Santana

Machico

Santa Cruz



# Water Precipitation in Portugal

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## WATER PRECIPITATION IN DEPTH

**854 mm/year**

Long-term average annual precipitation in depth (mm/year 2017)

## WATER PRECIPITATION IN VOLUME

**78.8 billion m<sup>3</sup>/year**

(Long-term average annual precipitation in volume (billion m<sup>3</sup>/year 2017))

# Water Resources in Portugal

This is the sum of renewable groundwater and renewable surface water resources (both internal and external)

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RENEWABLE WATER  
RESOURCES

**77 billion m<sup>3</sup>/year**  
Total Renewable Water  
Resources (2017)

WATER RESOURCES  
PER CAPITA

**7,493 m<sup>3</sup>/person/year**  
Renewable Water per  
Inhabitant (2017)

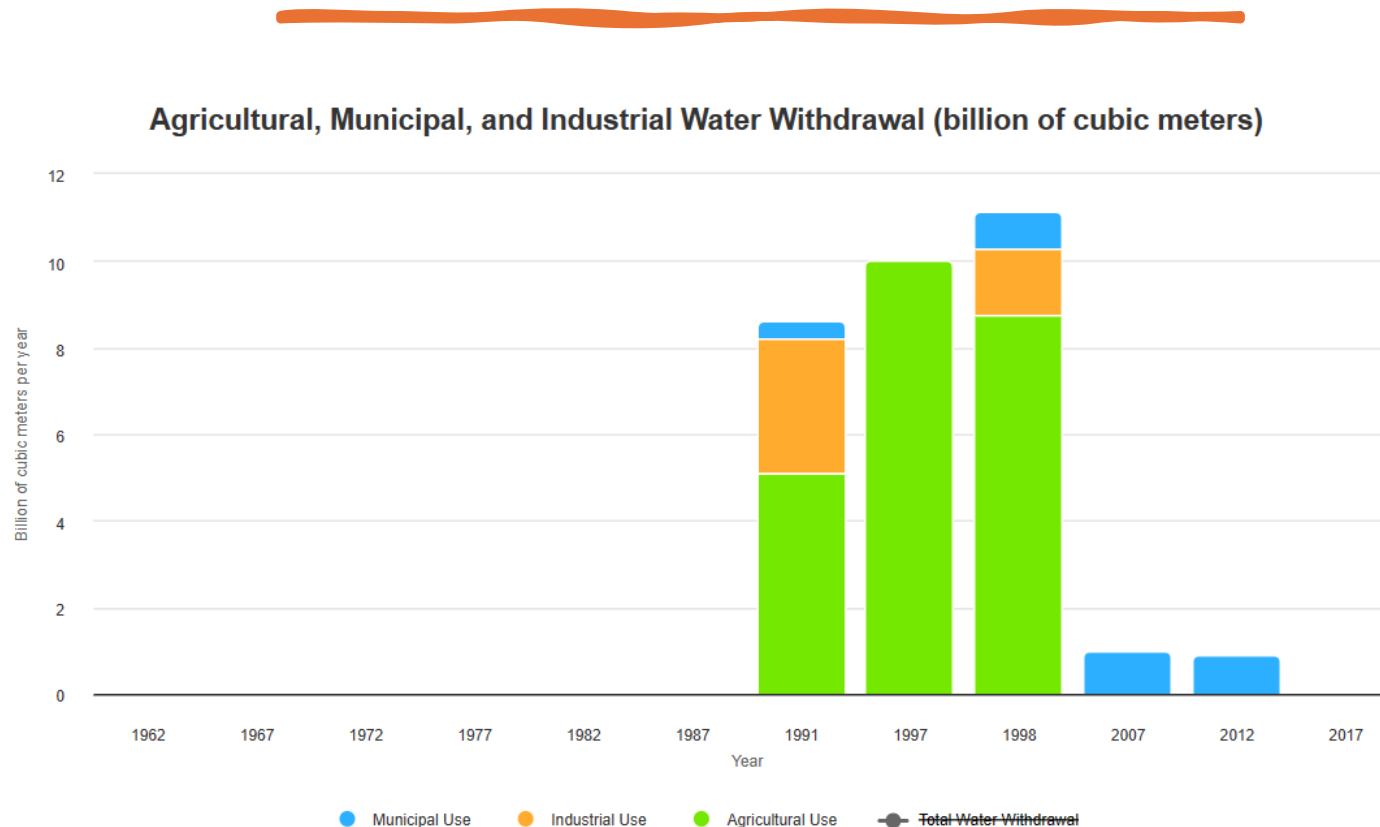
WATER  
DEPENDENCY

**51 %**  
Water from outside the  
country (2017)

# Total, by Sector, and by Year

Notes: Years with missing data left empty.

Water use can include water used and then returned to its source (renewable resource).





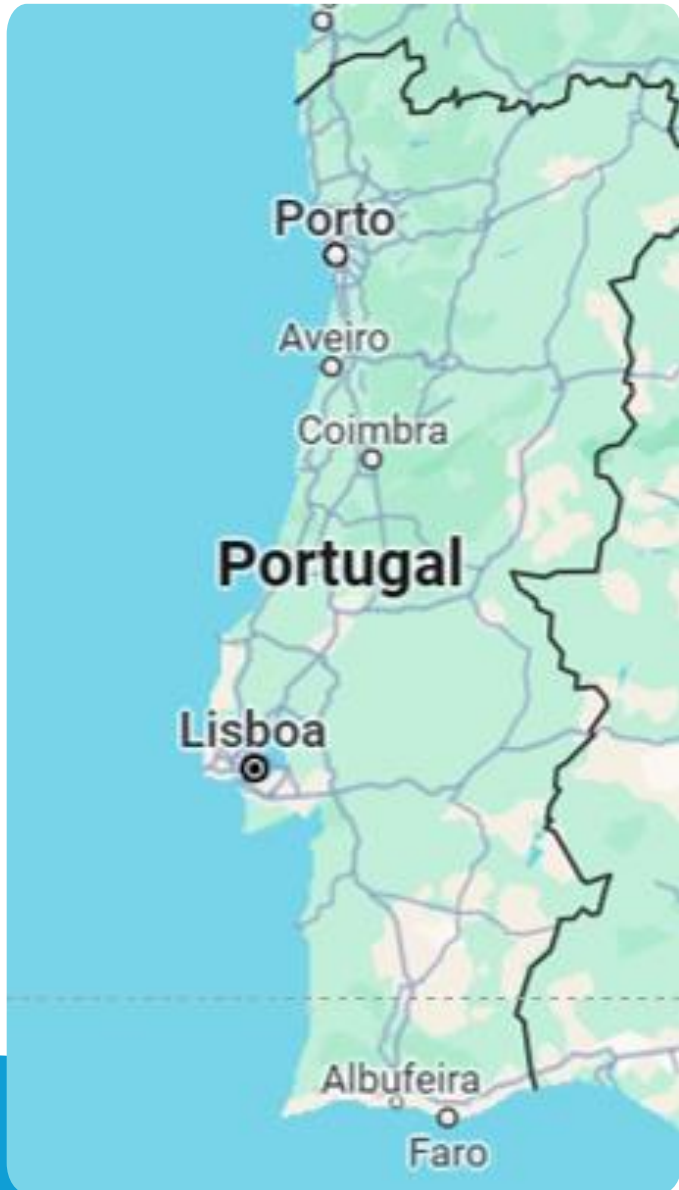
## Fresh water resources in Portugal mainland

In Portugal, the management of water resources - surface and groundwater - has the following **principles**: access to water for all, its protection as an environmental asset and its efficient use as a scarce resource.

The major rivers in Portugal are the Tagus, the Douro, the Guadiana and the Minho, which hydrological basins are shared with Spain, as is that of the river Lima. The exclusively national rivers are smaller and more irregular, the most important of which are the Vouga, the Mondego and the Sado.



# North and south



The magnitude and frequency of floods will increase, **particularly in the north**, due to the concentration of precipitation in the winter season, and a predicted increase in frequency of heavy rainfall. **Water quality will deteriorate, particularly in the south region**, as a result of a rise in temperature and a reduction in river flows in the summer season.

Groundwater tables will sink, especially in near-subsurface aquifers due to the expected reduction in the replenishing rate and the increase of the evaporation. There will also be an increase in saline contamination of coastal aquifers due to saline intrusion as a result of sea level rise



About **80%** of the country's water supply — far too much according to experts — is **consumed by agriculture**.

The experts agree that Portugal's **industrial agriculture** is the **main culprit**, as it relies on the wrong crops (example: avocados) and uses too much water because of outdated irrigation methods.



## Tap water in Portugal mainland

Around 30% of tap water in Portugal **seeps into the ground unused because supply networks are not modernized.**

The entire (100%) population of Portugal has access to a safe-drinking water source.

Tap water in mainland Portugal has been deemed as being "excellent" quality for human consumption.

# Algarve

In Portugal's Algarve region (which is hugely popular with tourists from across Europe) excessive and uncontrolled groundwater extraction along the coastal strip has now led to **saltwater mixing with the groundwater, rendering it unusable and damaging the soil.**



- In alignment with global concerns and European policy, Portugal developed the **National Strategy for Adaptation to Climate Change** (NSACC; Resolution of the Council of Ministers No. 24/2010), in which water resources are highlighted as a strategic sector.

[Read more](#)



# Madeira island

**Madeira**, a picturesque island in Portugal.

The archipelago of Madeira is a group of islands of Portugal, located in the Atlantic Ocean. It is formed by a total of **three islands (Madeira, Porto Santo, and Desertas)** and **two islets (Selvagem Grande and Selvagem Pequena)**. The only ones permanently habited are the islands of **Madeira and Porto Santo**. Politically and administratively, the archipelago currently constitutes the Autonomous Region of Madeira.









Levada do Furado - crédito: Francisco Correia



Basket Cart



Walking Tour na Levada do Ribeiro Frio



Funchal Municipal Market



Canyoning em Rib Frio



Pico do Areeiro – 1818 meters of altitude



# Subterranean Water:

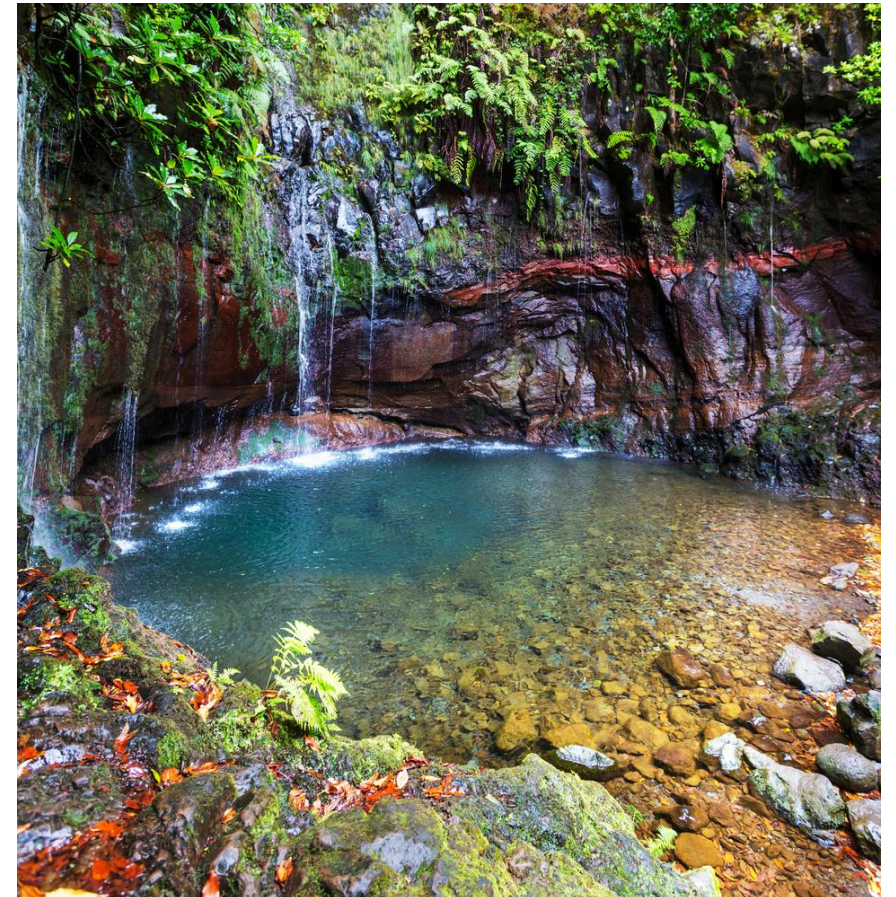
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Madeira's volcanic geology gives rise to **abundant subterranean water** sources. These include natural springs, aquifers, and underground reservoirs.

The island's porous rock formations allow rainwater to percolate into the ground, creating a network of hidden water channels. These subterranean waters are essential for drinking, agriculture, and sustaining ecosystems.

On the island of Madeira, **groundwater resources are the main source of supply**, largely meeting the consumption needs of the population.

**Groundwater is available even in the dry season**, when surface runoff is low or non-existent. , The largest volume comes from the natural discharge of the springs, being collected and transported by the levada system.



# Surface Water:

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Madeira is blessed with streams (ribeiras) and “levadas” that flow through its lush landscapes. These **surface water** bodies provide scenic beauty and support local flora and fauna.

Some of the island’s streams (ribeira) include the Ribeira Funda, Ribeira da Janela, and Ribeira de São Vicente. They contribute to the island’s biodiversity and recreational opportunities.



# Hydropower Reservoirs:

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Madeira has harnessed its water resources for **hydropower** generation. Reservoirs like the one at the Socorridos hydroelectric power station store water for energy production.

These reservoirs serve a dual purpose: providing electricity and regulating water supply for various needs.





In summary, Madeira's water resources are a blend of subterranean springs, surface streams, and strategically managed reservoirs.

**These elements combine to create a harmonious balance between nature and human activities on this enchanting island.**

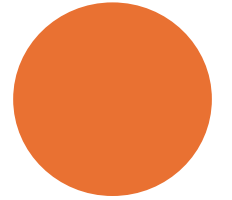
# Porto Santo Island

## Desalination

It is the only source of drinking water used for public supply on the island, which is produced from seawater through **reverse osmosis desalination** units.

The plant was built at the end of the 70's by the Regional Government, taking into account the **scarcity of water that had been registered on this island** and an increase in the tourist flow.

In Porto Santo they desalise seawater through reverse osmosis, and it came into operation in 1980. It is one of 5 industrial units worldwide and the first in Europe to use this type of technology.



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