

Climate change Impacts and water management in the Mediterranean region

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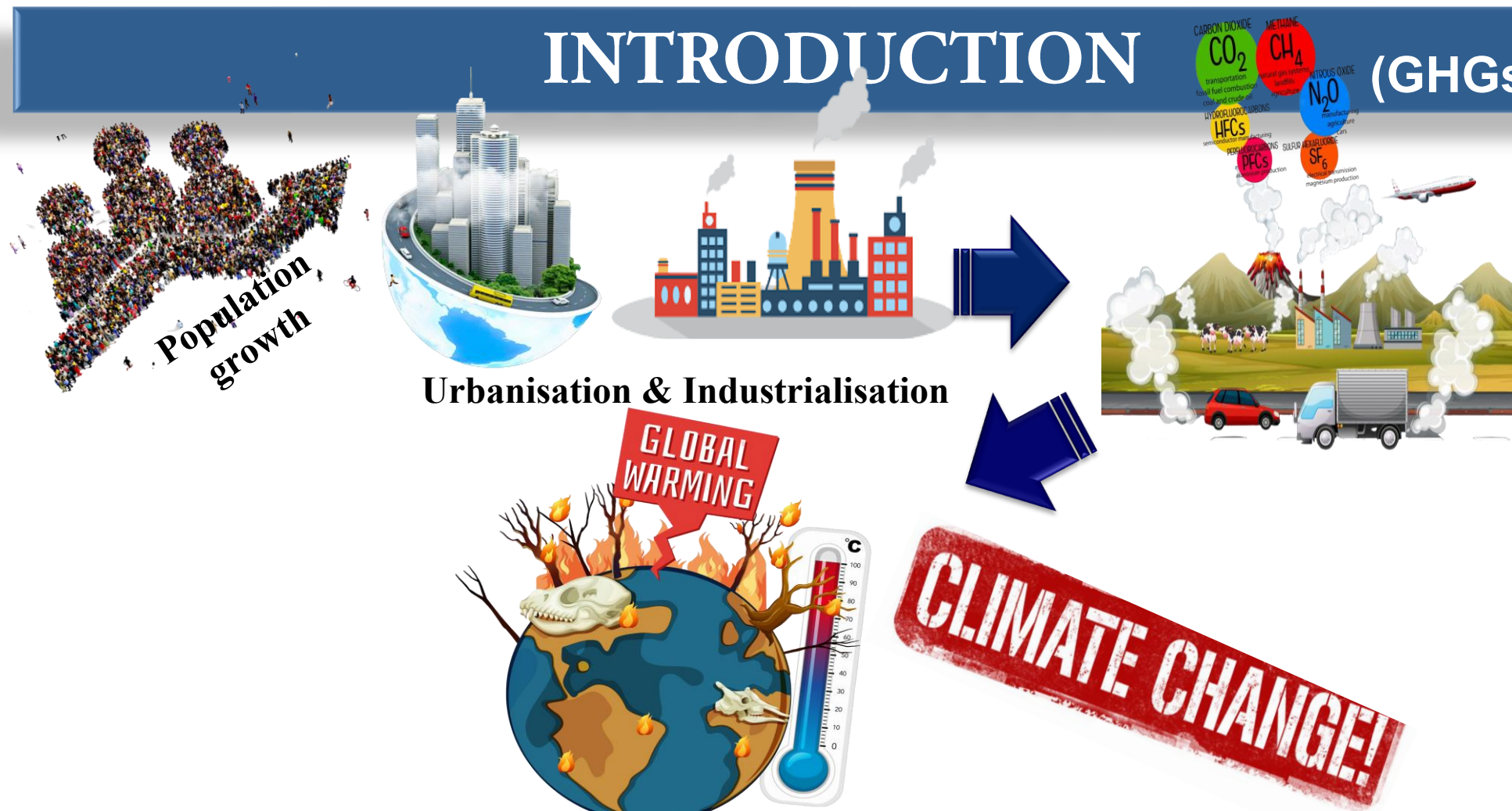
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INTRODUCTION (GHGs)



04 The technological challenges and opportunities in the region



SOLUTION & MITIGATION

Climate Change as a Cross-Sectoral Issue:

Addressing climate change requires collaboration across multiple government departments and administrative levels

Economic Impacts of Water Scarcity:

Tourism, agriculture, and industry face disruptions, but adaptive water management drives innovation.

Social Dimensions & Community Participation :

Inclusive water policies and social engagement help address inequalities and improve decision-making.

Transboundary Governance : Water

International cooperation is needed to prevent water conflicts and ensure equitable resource sharing.

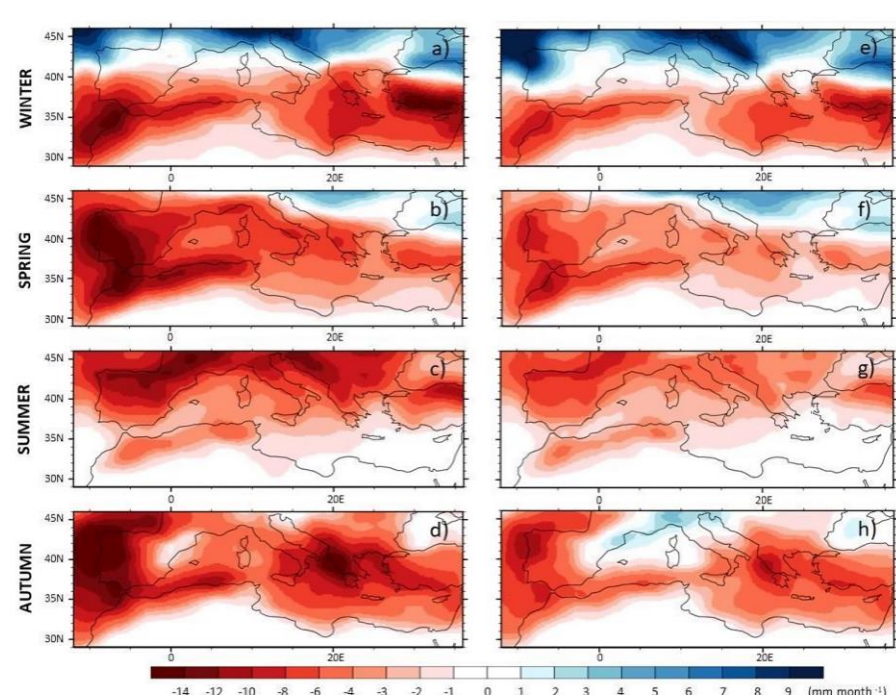
Integrated Water Resources Management (IWRM) :

A holistic strategy combining technology, policies, and community engagement to balance environmental, economic, and social priorities.

FRAMEWORK

01 The environmental impact of climate change and water scarcity

+1.54 °C
Climate change Hotspot
Warming 20% faster than global average (+1.2°C)

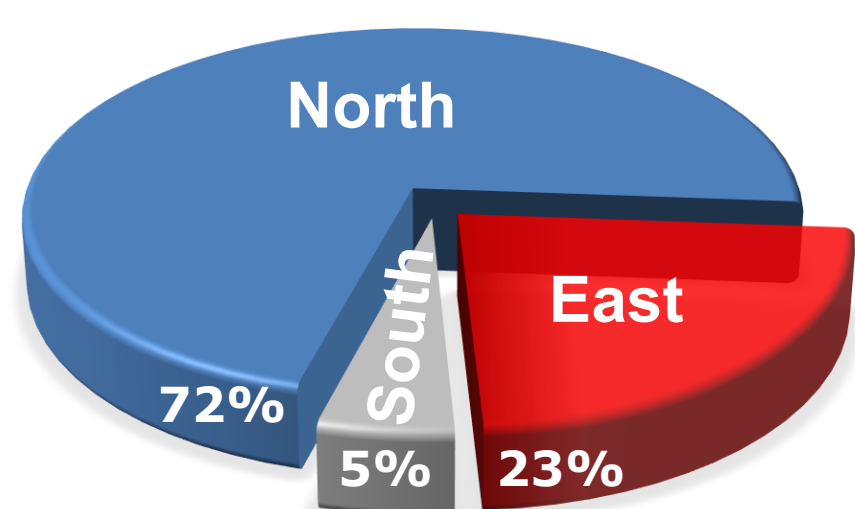


Projected future seasonal precipitation anomalies scenarios in Mediterranean region expressed in mm 2050-2079 (Tarin-Carrasco P. et al; 2024)

02 The geopolitical challenges

Imbalance resources which led to conflicts and migration pressure

Transboundary water resources & political tensions ex. (Nile River)



03 The socio-economic impact of climate change on water resources

Agriculture

- Yields quality decreased due to droughts
- Significant financial losses for farmers,

Economic Development

- Increase the cost of living,
- Social inequalities,
- Decrease the economic growth.



Food Security

- Increase of food costs & rise of food insecurity
- Impact on low-income communities
- Poverty and migration

Human Health

- The contamination of water sources
- Generation of waterborne diseases,
- Salinization of freshwater aquifer due to sea level in coastal areas,

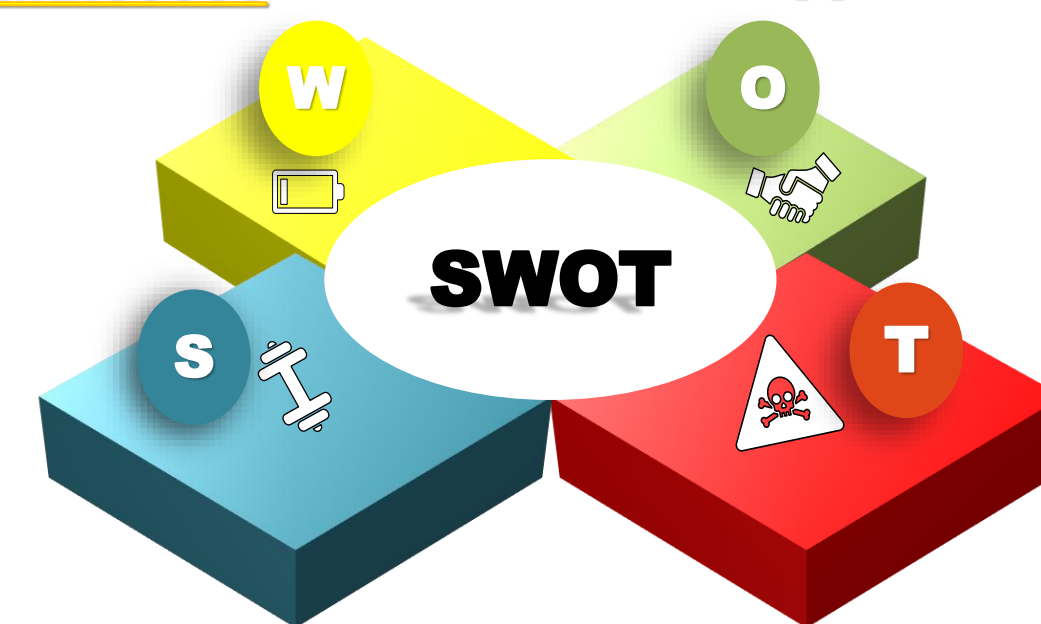
SWOT ANALYSIS

- ❑ Overexploitation and contamination of water resources,
- ❑ The economic inequality of the region,
- ❑ Inconsistent policies enforcement and unequal access to advanced technologies.

- ❑ Diversifying water availability through sustainable development strategies,
- ❑ Investments in water technologies, renewable energy and green infrastructure,
- ❑ Growing awareness of climate change can drive stronger environmental policies, water conservation strategies,
- ❑ Regional Cooperation.

Weaknesses

Opportunities



Strengths

Threats

- ❑ Investment in research concerning climate change adaptation, mitigation, and water technologies,
- ❑ The Union for the Mediterranean (UfM) to promote water security and sustainable development support of the region,
- ❑ EU water directives and the Barcelona Convention as international frameworks.

- ❑ Water availability and quality,
- ❑ Transboundary rivers and aquifers that are sources of political tension,
- ❑ The infrastructural and financial constraints.

CONCLUSION

The Mediterranean region is experiencing a massive pressure on its water resources and is facing a wide range of challenges in managing its water resources. Water scarcity has significant socio-economic impacts on agriculture, food security, human health, and economic development. To address these challenges, countries across the region must coordinate, share the knowledge, technologies, and strategies for a wisdom use of resources. In addition, developing adaptive policies to deal with the future projected impacts scenarios of climate change. Finally, the strong cooperation on transboundary water resources is the key for the Mediterranean region to build a more secure and resilient future for its communities and ecosystems