Focus on Mangrove Restoration, Engineered Wetlands, and Regenerative Agriculture

Nature-Based Solutions (NBS) for Reducing GHG Emissions in the Arab World

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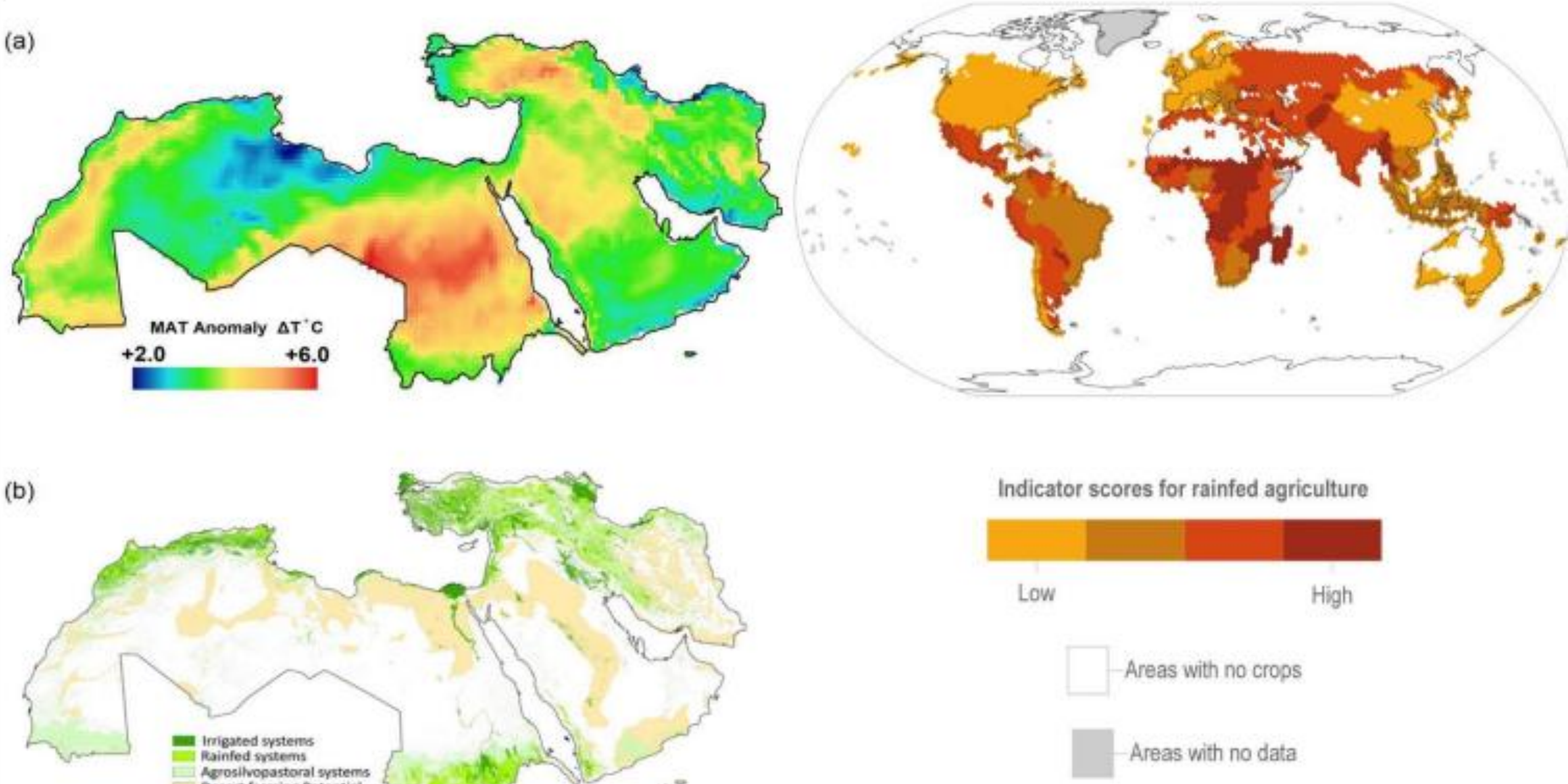

(a)
MAT Anomaly ΔT°C
+2.0
+6.0
(b)
Irrigated systems
Rainfed systems
Agrosilvopastoral systems
Desert farming Potential
Indicator scores for rainfed agriculture
Low
High
Areas with no crops
Areas with no data

Climate change in MENA region

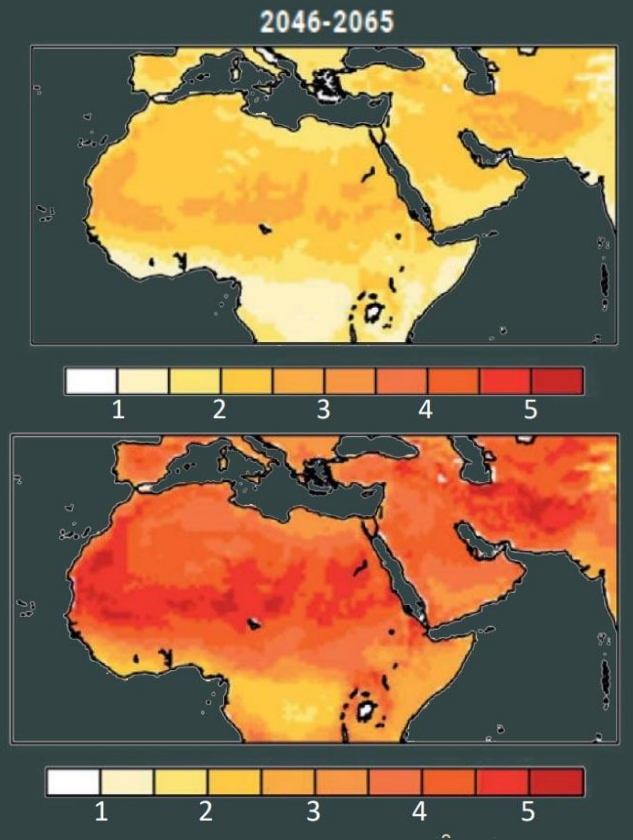
Morrocco and Tunisia
- Floods
- Wildfires
- Altered Precipitation patterns
- Droughts

Lebanon and Palestine
- Altered Precipitation patterns
- Water scarcity
- Wildfires

Egypt and Sudan
- Droughts
- Desertification
- Yield reduction
- Water scarcity

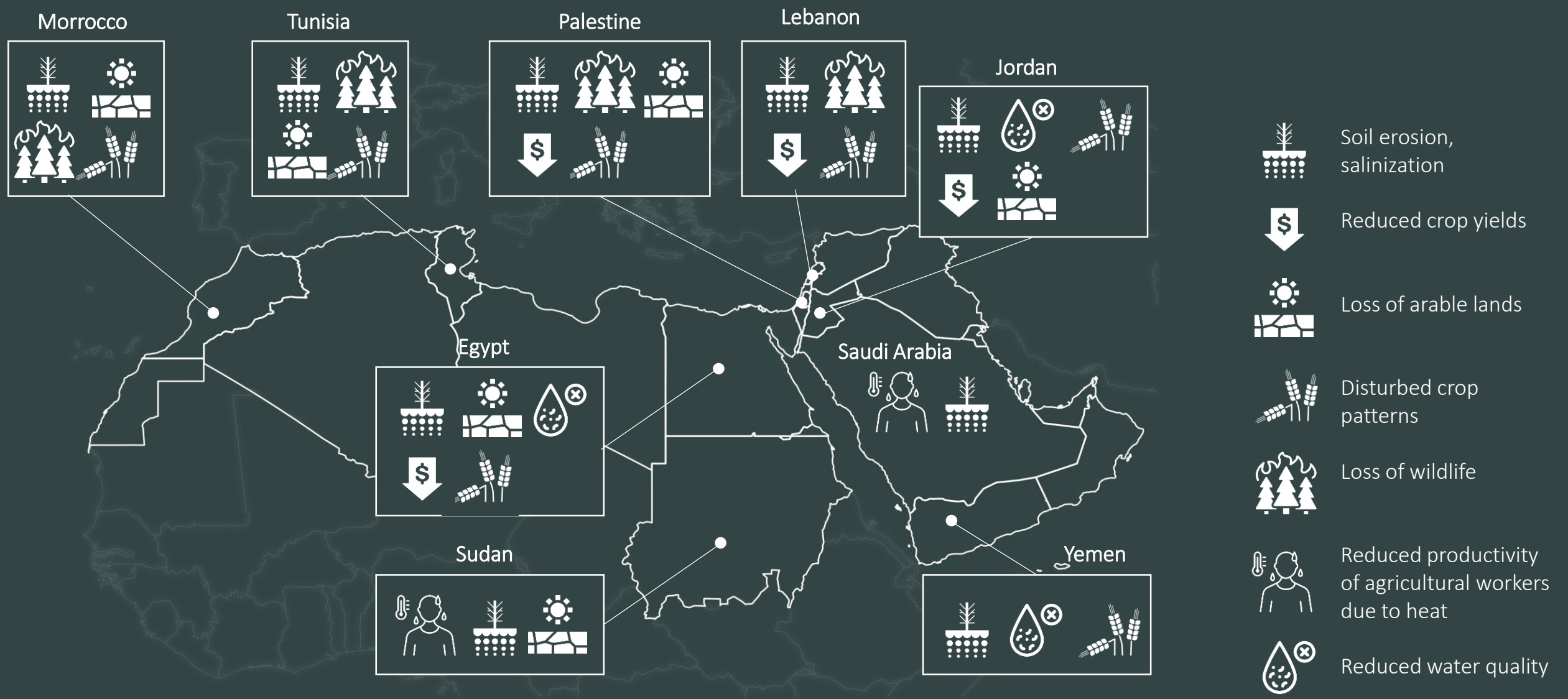
Saudi Arabia& YEMEN, Jordan
- Desertification
- Water scarcity
- Heatwaves

Expected change in temperature



Significant increase in Temperature in the region drive up droughts and desertification threatening food security and agricultural economy

Climate change impacts on agriculture



Mitigation efforts

Jojoba planting in Egyptian deserts

Green generation strategy in Morrocco

As Samra Wastewater Treatment Plant in Jordan

Indoor vertical farming in Saudi Arabia

National long-term mitigation plans
Morrocco, Saudi Arabia

Enhanced water management practices
Egypt, Sudan, Yemen, Joran

Climate resilient crops
Saudi Arabia, Tunisia, Morrocco

Water sensitive crops and irrigation methods
Egypt, Saudi Arabia, Lebanon, Jordan, Palestine, Morrocco

Policy reforms for water use
Egypt, Saudi Arabia, Jordan, Palestine, Tunisia, Morrocco

Importance of NBS in the Arab World

The Arab world faces significant challenges:

- Climate change impacts
- Water scarcity
- Desertification

Nature-Based Solutions (NBS) offer:

- GHG reduction
- Biodiversity support
- Sustainable development

Examples of NBS:

- Mangrove restoration
- Engineered wetlands
- Regenerative agriculture

Q&A

Questions?

Mangrove Restoration

Mangroves are coastal ecosystems that act as significant carbon sinks.

Benefits of mangroves include:

High carbon sequestration

Coastal protection

Support for biodiversity

Mangrove Restoration Initiatives

Saudi Arabia: 100 million mangrove trees by 2030 (Saudi Green Initiative).

UAE: 100 million mangrove trees by 2030.

Egypt: Restoration along the Red Sea coast with support from the Egyptian Environmental Affairs Agency (EEAA).

Engineered Wetlands

Engineered wetlands mimic natural wetlands for:

- GHG reduction
- Water purification

Benefits of engineered wetlands include:

- Reduced methane and nitrous oxide emissions
- Improved water quality
- Habitat creation

Engineered Wetlands Initiatives

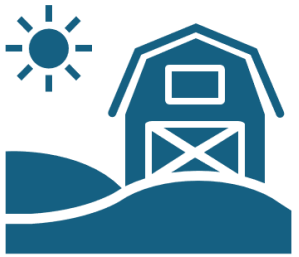
Egypt: Bahr El-Baqar project for wastewater treatment and GHG reduction.

Oman: Implemented systems for wastewater treatment.

Jordan: Pilot projects for sustainable wastewater management.

Regenerative Agriculture

Regenerative agriculture restores soil health and enhances biodiversity.



Benefits include:

Carbon sequestration.

Improved soil fertility.

Enhanced drought resilience.

Regenerative Agriculture Initiatives

01

Egypt: Promoting sustainable agriculture and soil management practices.

02

Morocco and Tunisia: Soil conservation and sustainable farming initiatives.

03

Lebanon: Adoption of regenerative practices in farming communities.

Other NBS Practices

Afforestation and Reforestation: Planting trees in arid regions to sequester carbon and combat desertification.

Urban Green Spaces: Developing green roofs, parks, and urban forests to improve urban environments.

Focus on Egypt: NBS Initiatives

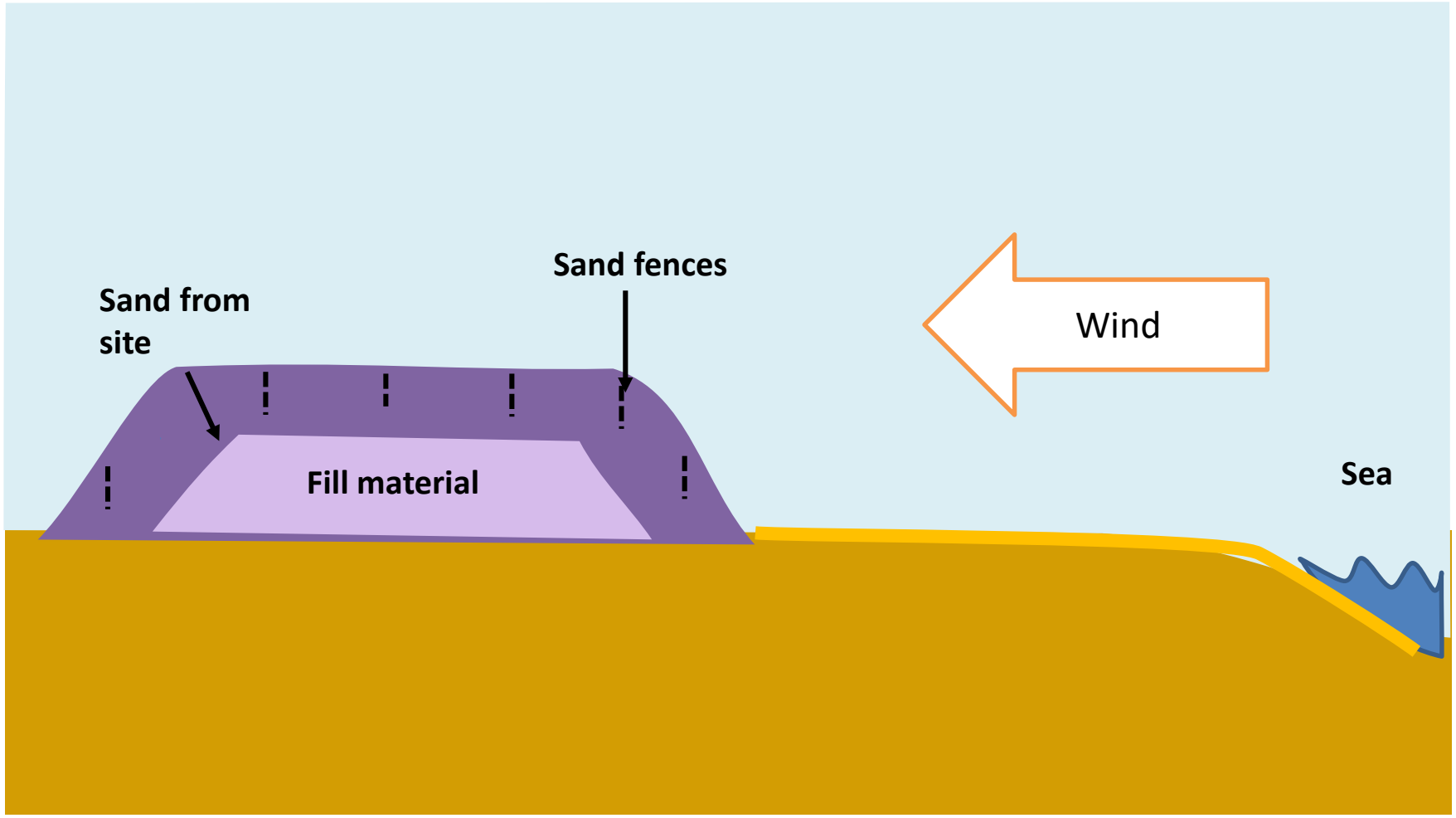
Mangrove Restoration: Efforts along the Red Sea coast.

Engineered Wetlands: Bahr El-Baqar project for water treatment.

Regenerative Agriculture: Training and sustainable land management practices.

Urban Green Spaces: Initiatives in Cairo to enhance urban greenery.

PILOT SITE - ~5.5 KM



Pilot site

Pilot site

Conclusion

NBS provide a pathway to reduce GHG emissions, enhance resilience, and support sustainable development.

Scaling up NBS initiatives across the region is critical for achieving climate goals and building resilient societies.

References

1. UNFCCC. Nature-Based Solutions for Climate Mitigation.
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3. FAO. Regenerative Agriculture: Key to Climate Resilience.
4. UNEP. The Role of Wetlands in Climate Change Mitigation.
5. EEAA Reports on Mangrove Restoration.
6. World Bank. Green Infrastructure in the MENA Region.