Economic and Social Commission for Western Asia

Nature-based Solutions for Climate Resilience

Multi-stakeholder Platform for Protecting Biodiversity: Inception Meeting

UN House – Beirut, Lebanon
12 & 13 July 2023

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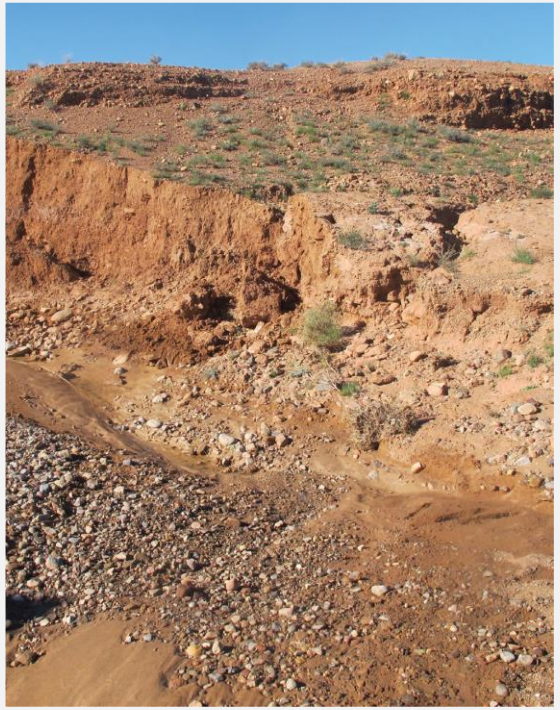
- Major challenges
- Opportunities for action

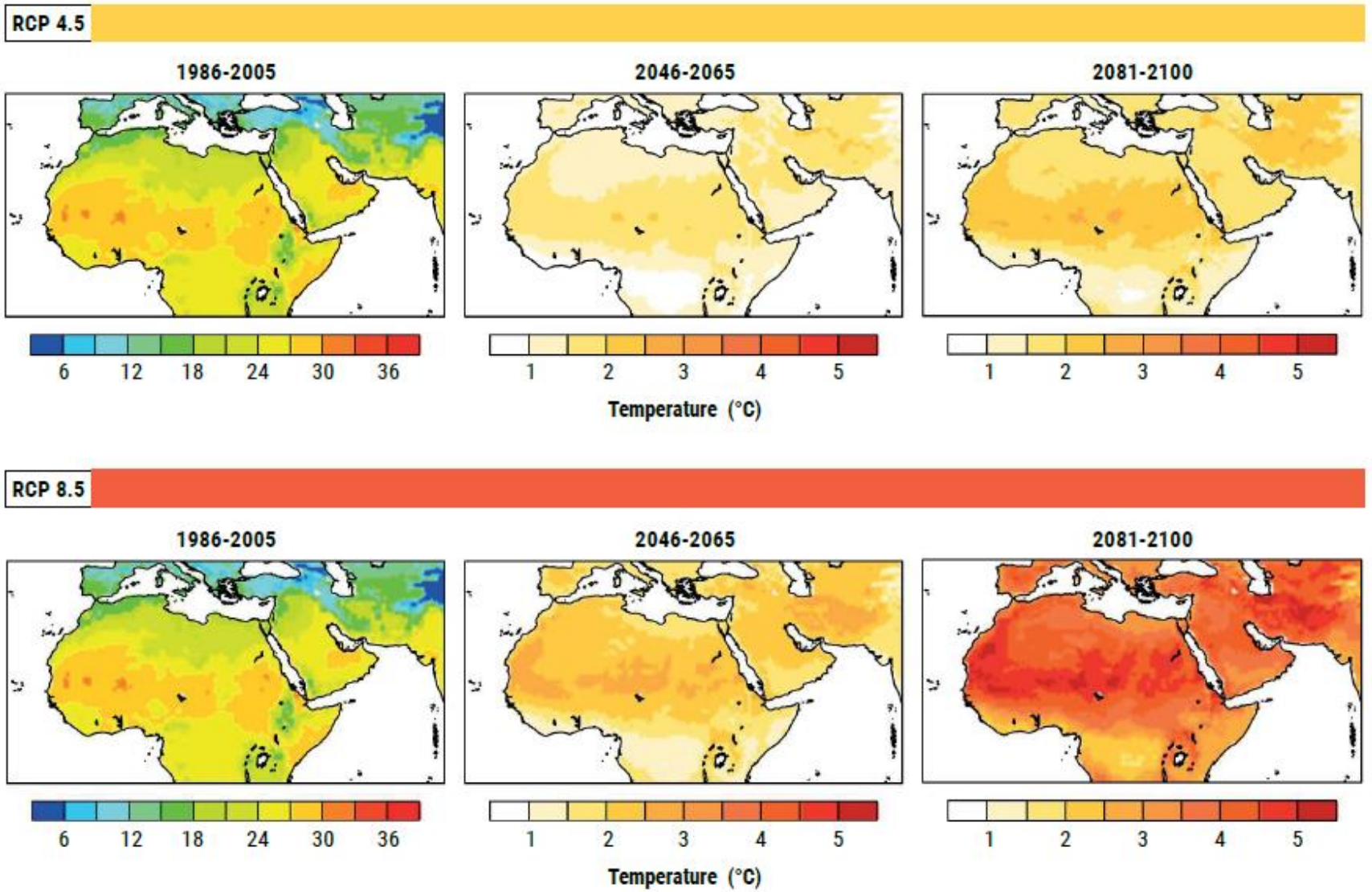
The triple planetary crisis

- Climate Change
- Biodiversity
- Pollution



Mean change in annual temperature (°C) for mid- and end-century for ensemble of three RCP 4.5 and RCP 8.5 projections compared to the reference period

RICCAR
Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region



Mean Change in annual precipitation (mm/month) for mid- and end-century for ensemble of three RCP 4.5 and RCP 8.5 projections compared to the reference period

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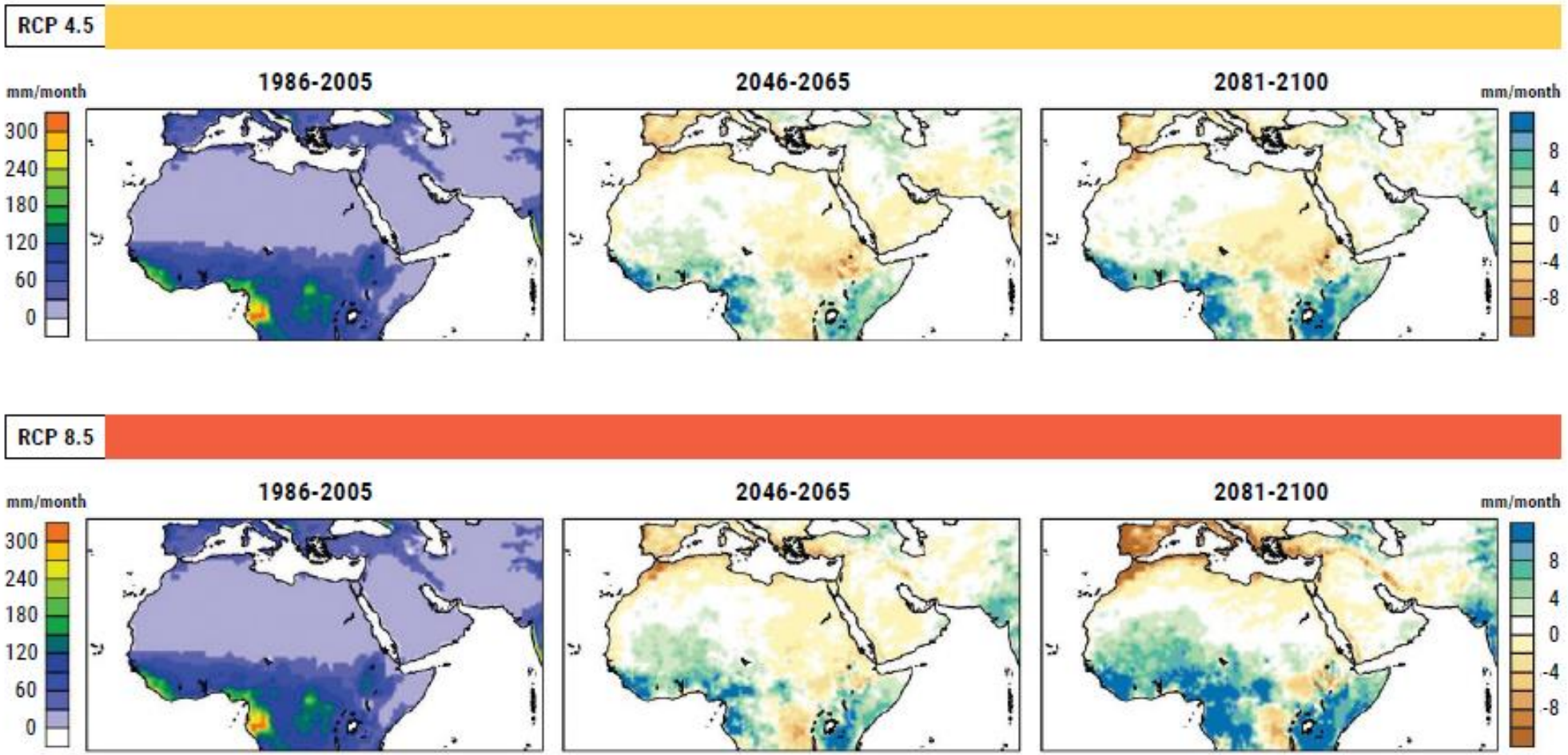
Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region



Nature-based solutions (NBS)

- NBS **links** climate, biodiversity and sustainable development
- **Actions** that *protect*, *restore* and *sustainably use* and manage nature to address *socio-economic* and *environmental challenges*, while *advancing biodiversity* benefits, *ecosystem services* and *human well-being*
  - Emission reductions & Sinks of greenhouse gases
  - Vulnerability of social and ecological systems to the impacts of climate change

  - NBS provides timely, sustainable, cost effective, adaptive and resilient solutions which can potentially deliver 37% of cost-effective CO_2 mitigation needs through 2030.

Nature-based solutions- categories

- **Restorative**: Forest and Land Restoration (FLR) program
- **Issue-specific**: Ecosystem-based adaptation solutions
- **Green infrastructure**: A hybrid green/ grey infrastructure solution for more sustainable/ cost-effective solutions
- **Management:** Water resources management interventions to enhance climate change resilience
- **Protection**: Protection of ecosystems to support regeneration and sustainable use.

NBS supported by various ecosystem types

Forest

Coastal Ecosystems/ Mangroves

d, Iraqi Marshlands.

Wetlands

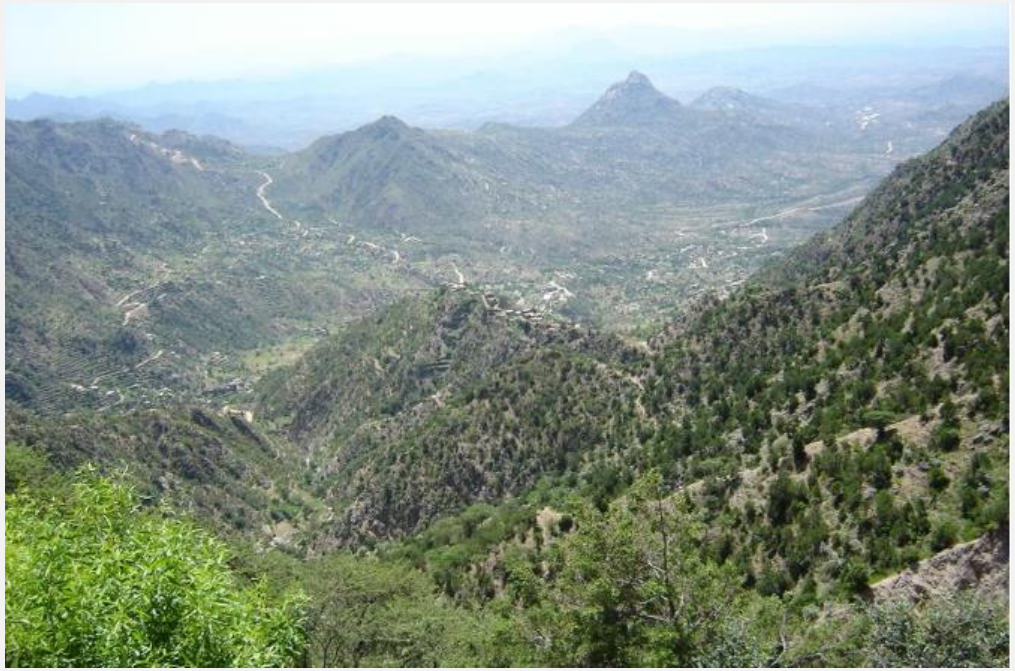
Forestry

MITIGATION

- Carbon sequestration potential

ADAPTATION

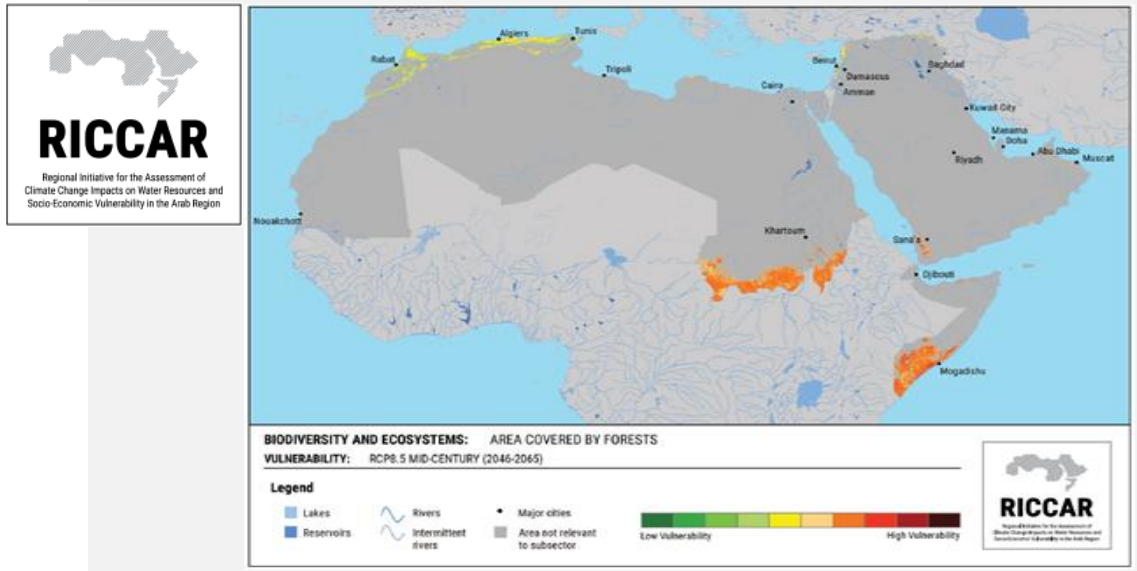
- Attenuate risk of soil erosion, flooding, and land degradation
- Air purifying functions
- Provisioning, touristic and cultural services.



Forestry (cont'd)

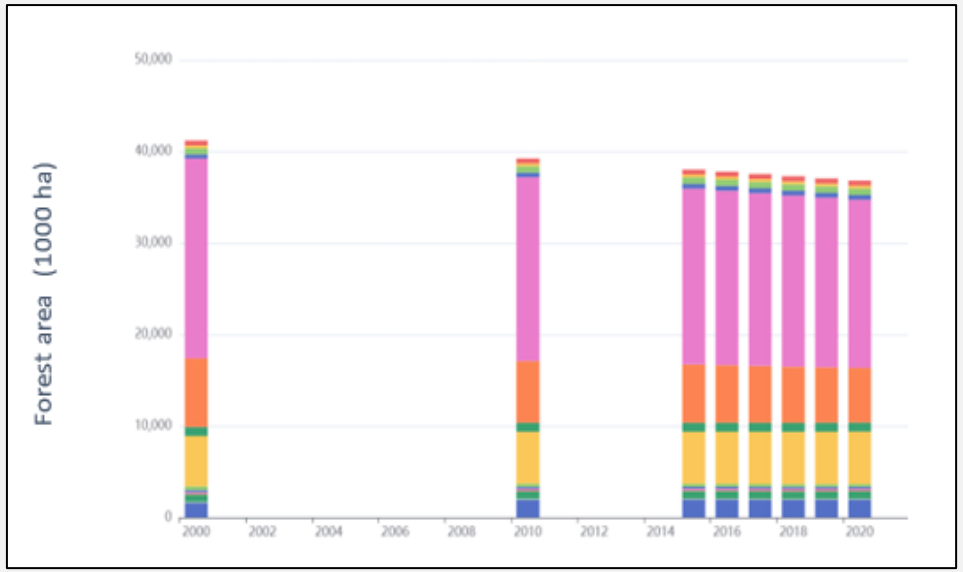
VULNERABILITY

- Mainly anthropogenic activities: deforestation, land use change…etc
- Further exacerbated by the Impacts of Climate change



STATUS IN THE ARAB REGION

- Efforts needed to generate continuous data on forest coverage
- Decreasing trends in forested areas



Forestry for climate action

Forests are increasingly recognised in NDCs:

- **Sudan**: 40% of GHG reductions (2021-2030) is planned through forests;
- **Morocco, Tunisia, and Jordan:** Amounts of GHG reductions targeted through forested ecosystems provided;

National initiative for climate actions through forestry:

- *Example*: **Saudi Green Initiative (SGI)** launched in 2021 to plant 10 billion trees.

→ Land-based pathways are still **not** exploited to their full potential.

Mangroves

MITIGATION

- Unit area carbon sequestration (up to 4 times that of Forests)

ADAPTATION

- Wave attenuation and shore stabilization
- Food security and economic resilience of dependent communities
- Tourism, recreation and education activities, aesthetics and cultural heritage of the region

Mangroves (cont'd)

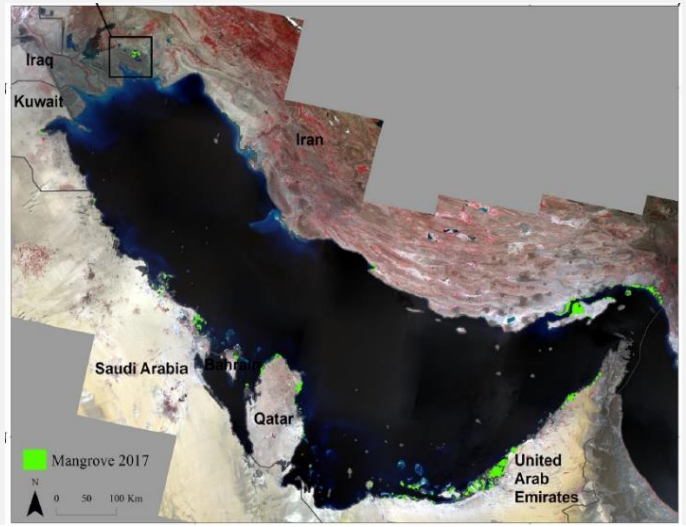
VULNERABILITY

- Population density (Arabian peninsula)
- Overgrazing and logging (Red sea coast)
- Environmental and climate stressors: hyper salinity, harsh climate conditions climate

STATUS IN THE ARAB REGION

Gains in mangrove (Arab region) > losses

- Along the red seacoast
- Coastal areas of the Arabian Gulf and Gulf of Oman
- Greatest mangrove expansion was noted in the United Arab Emirates



Mangroves for climate action

- **Integrated coastal zones management** (ICZM)

  - **Egypt:** Launched a 2-years project in 2020 to enhance coastal resilience against sea level rise through rehabilitation of mangrove plantation

  - **KSA:** Planting of mangrove seedlings to reduce coastal erosion, increase the sinks for blue carbon, and enhance resilience of marine livelihoods

Wetlands

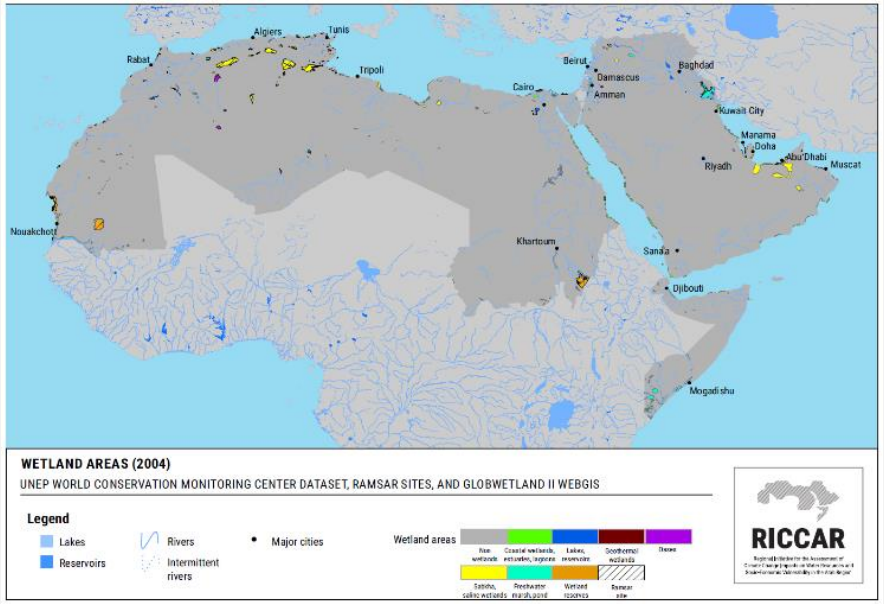
VULNERABILITY

- Overexploitation/ overgrazing
- Drainage and burning for agriculture conversion and urbanization
- Logging for fuel
- Climate change

STATUS ACROSS THE ARAB REGION ARAB REGION

➢ **Sustained losses across the region**

- Around 50% of wetlands lost (20th century)
- Consistent with global trends
- Greatest losses were reported in Mesopotamian marshland- Iraq (79%, 1986-2000)



Wetlands (ctn'd)

MITIGATION

- Peatland carbon storage potential exceeds all (2 times entire world's forests)

ADAPTATION

- Water purification
- Shoreline stabilisation
- Fish and wildlife habitat
- Groundwater recharge
- Cultural and recreational significance

Source: Qahtan Abid, Iraqi Marshlands.

Wetlands for climate action

Avoided peatland degradation (priority climate action)

- **Iraq:** Prevented emissions of 33 million tons CO_2eq/yr (90 million tons of CO_2eq/yr targeted by 2030).

Peatland restoration

- **Sudan**: peatland restoration can result in 0.58 million tons CO_2eq/year by 2030.

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Challenges

NBS potential not fully exploited

Definition: Ambiguity in defining NBS

From Concept to Practice: translation into standardized practices remains at an early stage

Deficiencies

Political and Regulatory frameworks

- Lack of comprehensive framework to integrate NBS knowledge into policies
- lack the metrics for monitoring and follow-up

Financing gaps

Ill-defined objectives; Tradeoff between short term/ long term expectations; existing funding silos across local government departments

Lessons learned and experience

Results in lacking Evidence on NBS tangible and measurable outcomes/ Cost effectiveness

Sufficient science and knowledge

Economic assessments for the ecosystem services and functions to support decision-making on trade-offs

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Opportunities for action

Policy and governance

Greater synergies across environmental agreements for simultaneous mitigation of biodiversity loss and climate change impact

- UN Framework Convention on Climate Change (UNFCCC),
- Convention on Biological Diversity (CBD)
- Sustainable Development Goals (SDGs)

Nature-based pathways for climate actions

- Political willingness for the implementation of existing biodiversity conservation and restoration policies
- Funding opportunities
- Frame NBS concepts/increases chances for their uptake

Science, innovation and technology

- Important variability in global ecosystem assessment values
- More accurate studies have shown greater outcomes than originally estimated
- Arab ecosystem assessment studies for decision-making on tradeoffs:

  - The ***Abu Dhabi Blue Carbon Demonstration Project***
    - Greater investments in mangrove: 30 to 100 million mangroves (NDCs)

  - ***Lebanon Reforestation Initiative (LRI)***
    - Tangible evidence supporting forest protection and conservation policies

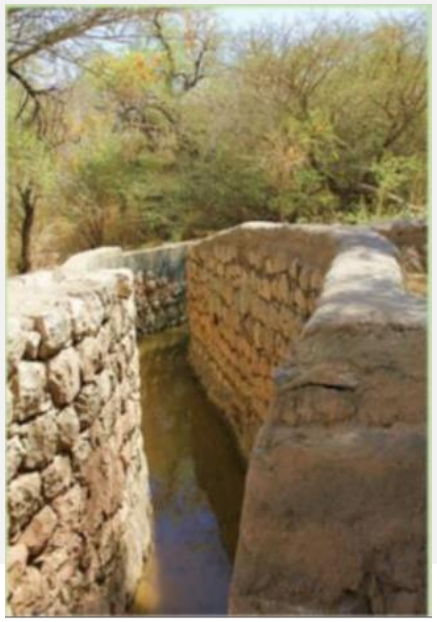
Capacity building: needs, opportunities, beneficiaries

Indigenous knowledge

Hima: Participatory land governance approach encourages land regeneration and biodiversity restoration with high efficiency and cost-effectiveness in the Arab region.

- Practices being revived in Jordan, Egypt and KSA.

Aflaj: Groundwater irrigation system to preserve water from evaporation and maintaining water dependent ecosystems in Oman.



Capacity building: needs, opportunities, beneficiaries

Improved skills through piloting Green Infrastructure

Bio-remediation through the use of reed (phragmites australis) beds

- Produced water in Oman
- Wastewater in Lebanon.

Green stormwater management

- Bioswales in Amman for flash floods management.

Funding mechanisms, investment opportunities

- ***Effective prioritization*** of the societal challenges
- *Better analysis of* ***NBS alternatives*** and their short and longer-term impacts;
- ***Environmental, Sustainability and Governance indicator*** **frameworks** (ESG) support the integration of nature-based solutions into investment decisions;
- Governments and private companies pledging ***net zero emission targets***;
- Expansion in ***green/grey infrastructure projects*** investments;
- NDCs can also contribute to the prioritization of investments in climate resilient and sustainable infrastructure projects.

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Thank you