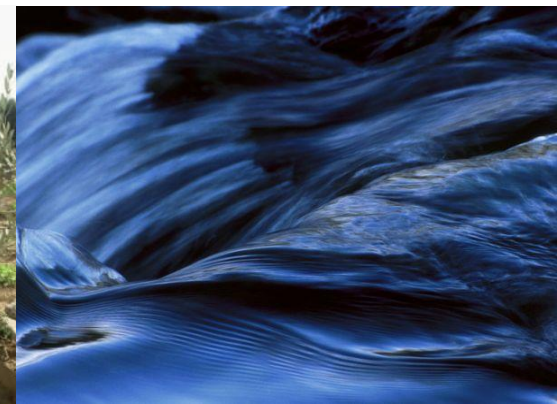




Climate Change and the Environment



*Empowered lives.
Resilient nations.*



Dr. Kishan Khoday
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Sustainable Energy and the Environment



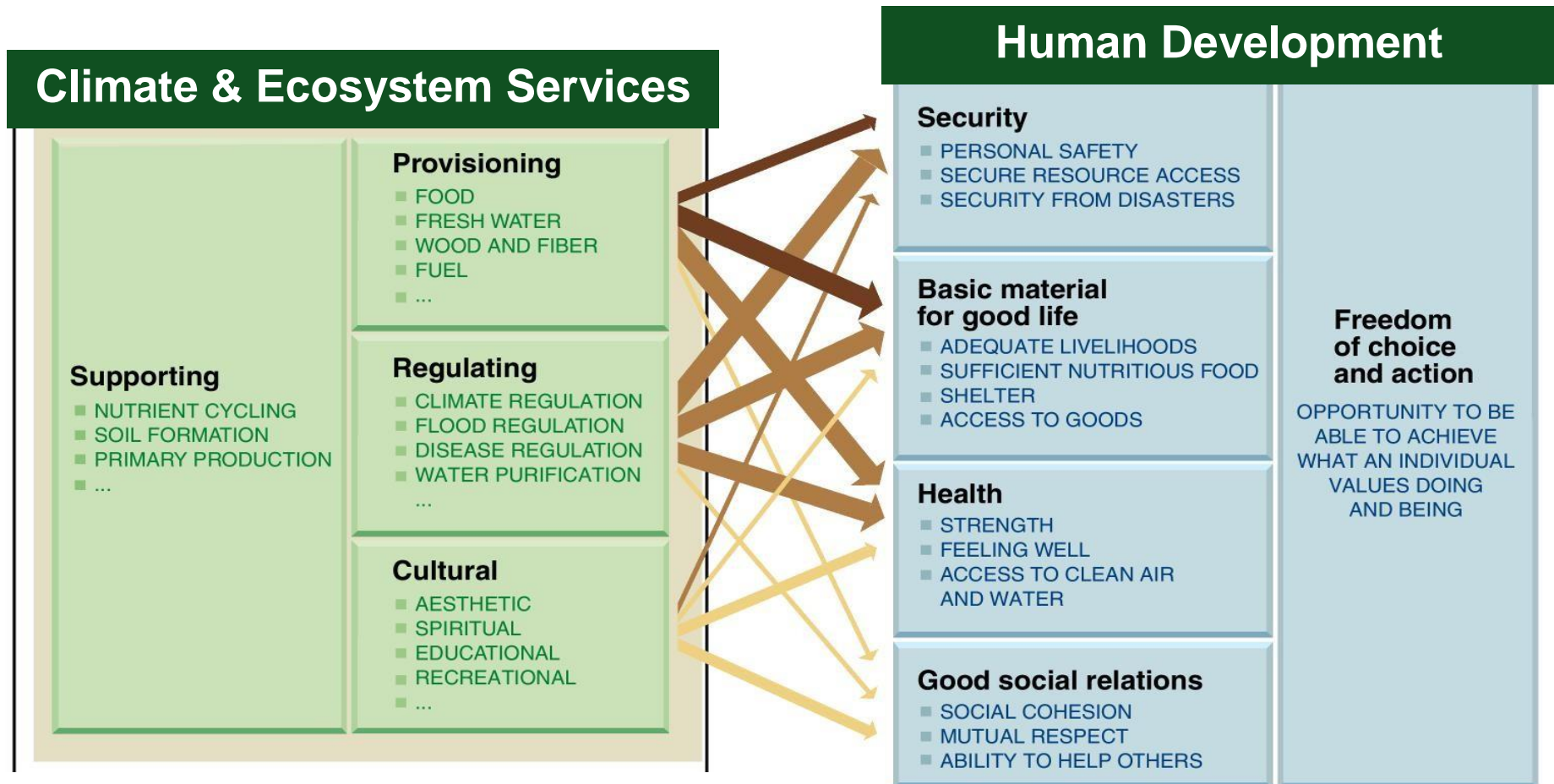
1) *Overview*



As leaders in the region strive **to achieve stability and put the region back on a development trajectory**, they do so in the face of risks from climate change, mounting resource insecurity and growing fragility of ecosystems. These trends pose risks for achieving the Sustainable Development Goals, and for achieving long-term recovery in fragile contexts. There are a number of **SDGs that together form a scaled-up agenda for making development and recovery more *ecologically risk-informed***.



Environmental Risks to the SDGs



Source: Millennium Ecosystem Assessment

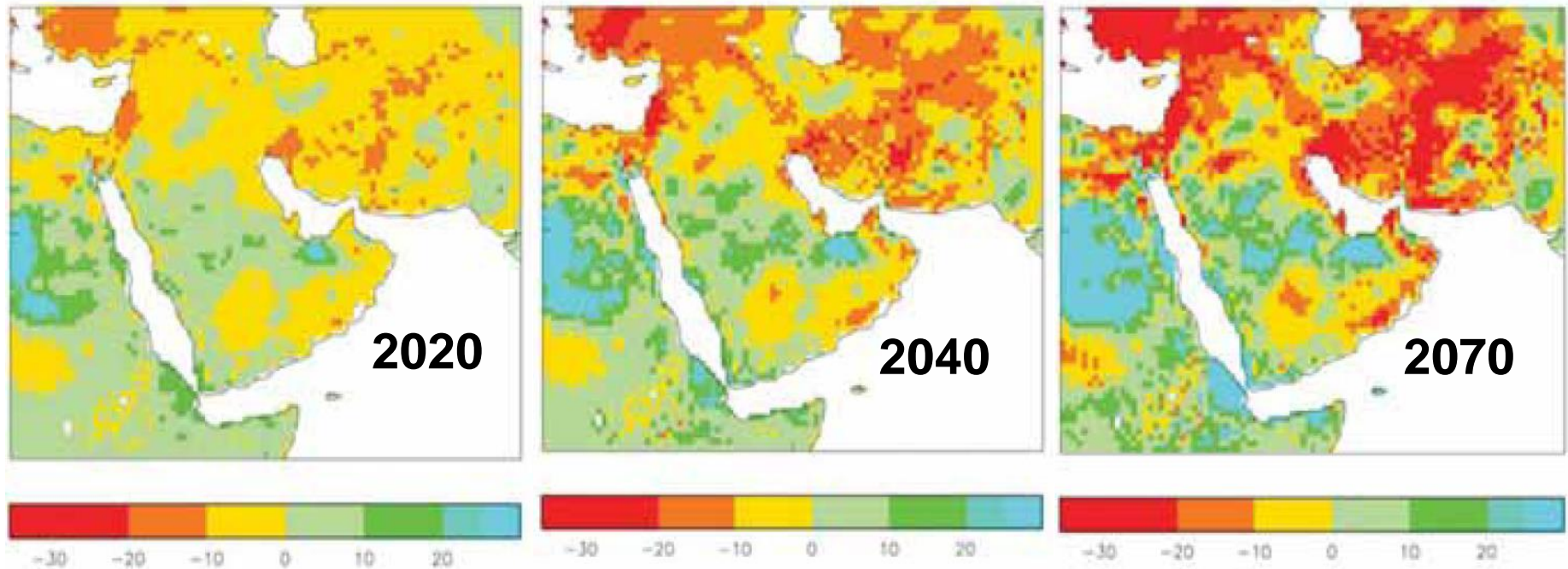
SDGs call for a more integrated approach to manage the inter-connected social, economic and environmental risks to the 2030 agenda, and to develop new *resilience-based approaches to development and crisis recovery.*



2) Regional Trends



Climate Change and Disasters



- Temperatures rising **faster than global** average
- Scaled-up in the future...**risk of mega-droughts**...parts of region become uninhabitable by second half of 21st century

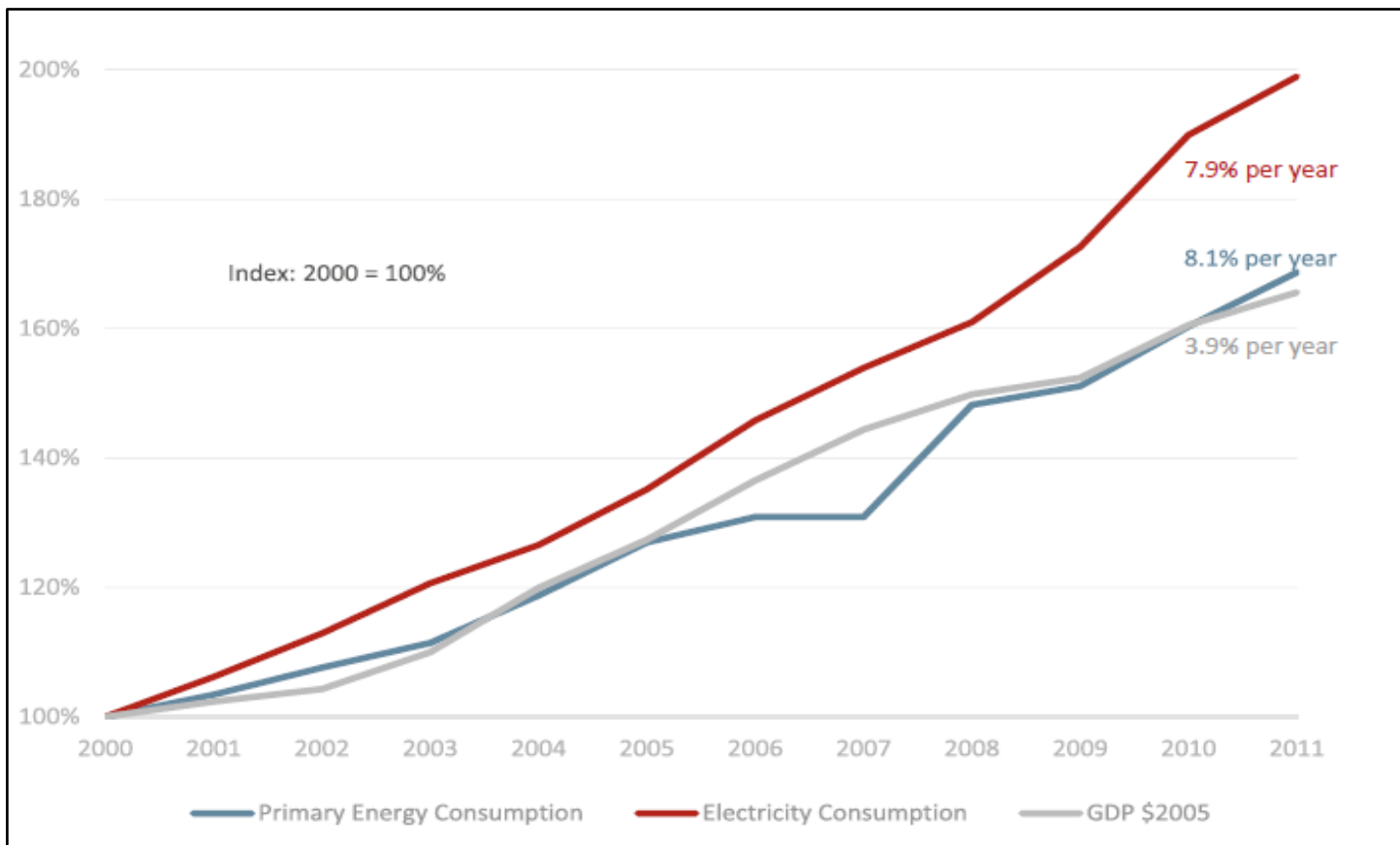


Climate Change and Disasters

- Many parts of the Arab region (Horn of Africa, Levant, Maghreb) now among the world's top **climate risk hotspots**
- Temperatures in region to rise 2°C by 2030 and 4°C by 2100; **major social disruption** from fragile land, water, food systems. By 2030 climate change will reduce water availability and agricultural output by 20% on average; 40% in some areas.
- More **frequent/severe disasters such as droughts** with affiliated displacement/conflict risks. 2006-10 saw 300,000 deaths from famine and 2m drought-displaced. Sea-level rise displacement risks for tens of millions in coastal cities/towns
- Climate change emerging as critical part **of crisis prevention and recovery** agenda; threatens all SDGs and crisis recovery



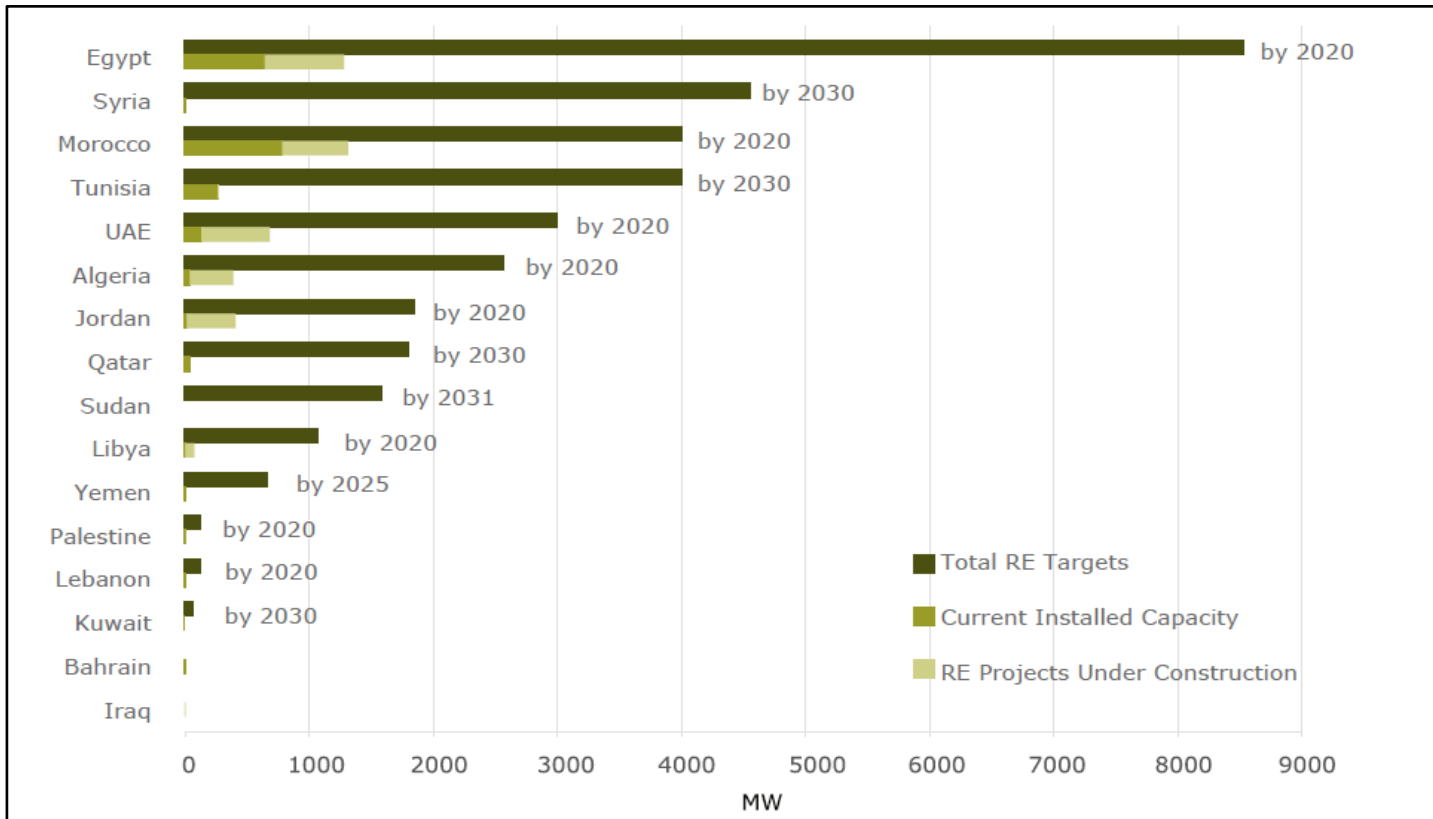
Energizing the SDGs



- **Energy consumption** rising faster (7.9%/yr) than most of the world
- Electricity often from oil/gas burning; thus draining energy export revenues; triggers **shift to post-oil development era** in coming yrs



Energizing the SDGs



- Arab region hosts **world's largest reserves** of solar radiation, but makes up less than 7% of power in the region today
- Most countries have put in place **renewable energy plans**, alongside energy efficiency plans to reduce intensity of growth

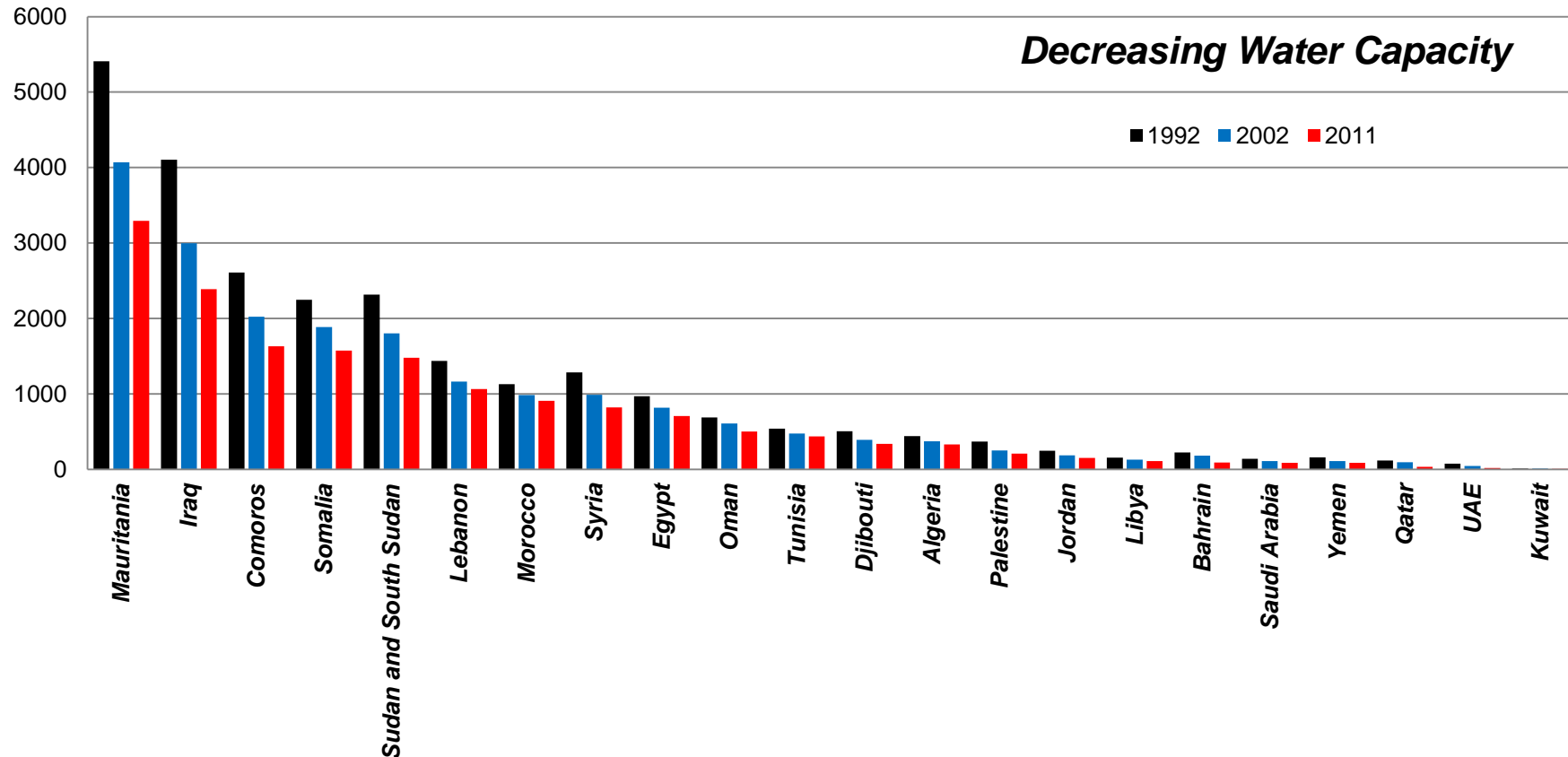


Energizing the SDGs

- Achieving all SDGs and recovering from crisis will need major new energy investments. Solar energy could help, moving potentially from just 7% of the energy mix today across the region, to **25% of the region's mix by 2030** if ambitious national action plans achieved.
- Some countries have even **greater ambition**, with 50% by 2050 in UAE, 42% by 2020 in Morocco, 40% by 2030 in Algeria, while 20% by 2030 in Egypt, 11% in Sudan by 2030, 10% in Palestine by 2020
- Solar expansion, together with energy subsidy reforms and increased energy efficiency in key urban sectors like buildings, AC, transport and industry, could together results in large cost savings and **fiscal space to accelerate other SDGs**
- But new capacity may not **translate into equity**. Millions of poor and displaced in the region, with energy a key barrier to recovery. Decentralized solar an underutilized solution



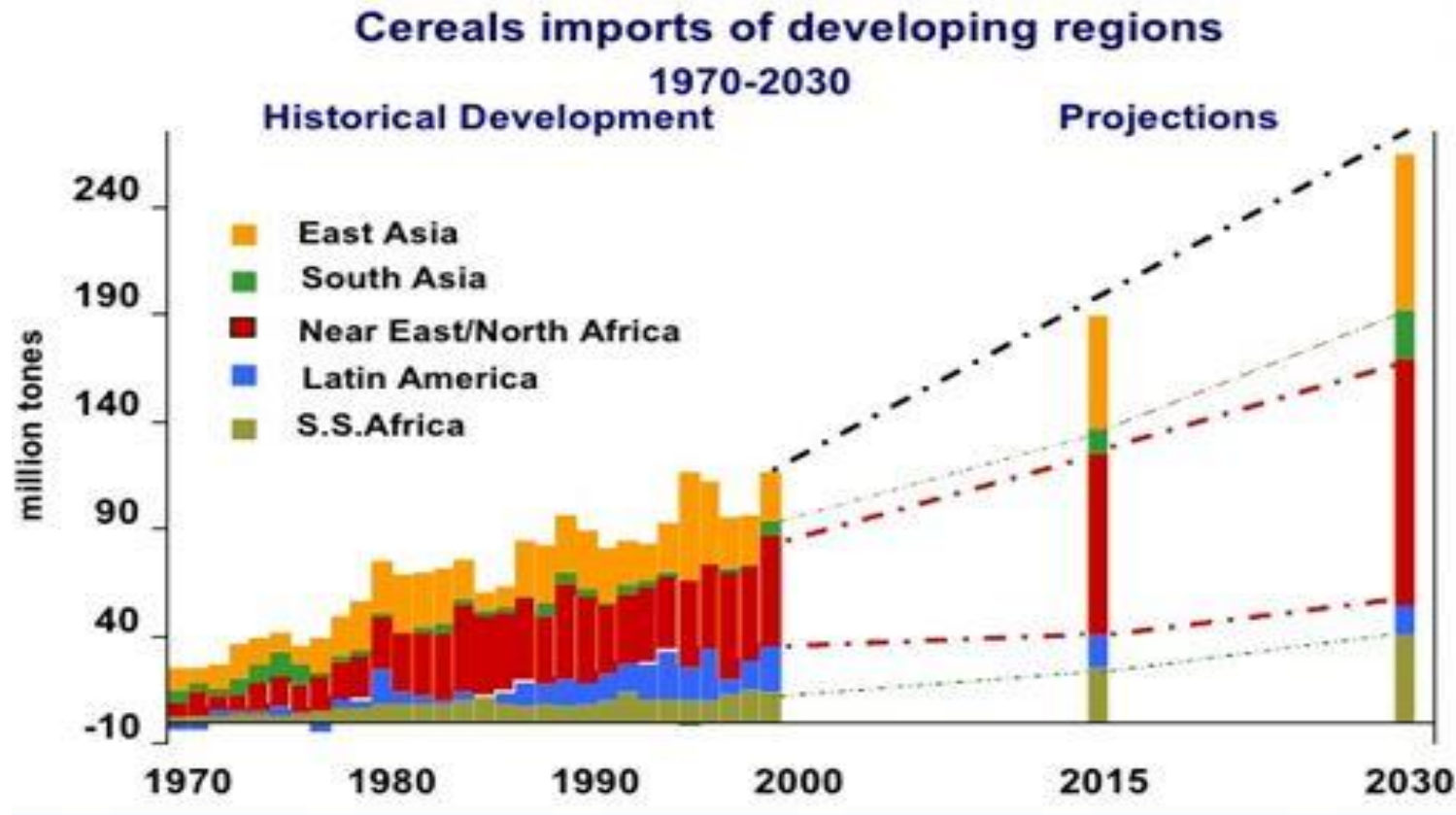
Securing Natural Assets



- Arab region is the **world's most water-insecure region**
- Rising development footprint means some countries will surpass their **'peak water'** capacity in coming years; more externally-dependent



Securing Natural Assets



- Arab region is the **most food-import dependent** in the world
- Continued rise of demand, **low productivity gains and systemic barriers** from climate change, land degradation, rising water scarcity



Securing Natural Assets

- The Arab region is first region where **food production** has peaked and is the most food import-dependent region. From 1990-2015 yields increased only 15%; import dependence may increase 64% by 2030. Land degradation is a major challenge, with 75% of the region desert, arid or semi-arid and the pace of land degradation is a barrier to productivity gain. Green economy investments in drought-resistant crops, water conservation, agricultural waste reuse options to reduce risks and build resilience.
- The Arab region has 14 of world's 20 most **water-stressed** countries; with 57% of the region's water originating outside the region. Only 1,110 m³ of renewable water/person/year (6,617 m³ world average) and 37-53% water use efficiency rate. Water demand to increase 47% by 2030 relative to 2005 while water deficit to grow from 28.3 Bcm in 2000 to 75.4 Bcm in 2030
- There are over **1000 threatened species** in the region, most critically endangered. Of this 24% fish, 22% birds, 20% mammals. Protected areas grew from 3.21% in 1990 to 9.28% in 2012. New off-shore oil-gas exploration and rising coastal pollution pose risks to marine ecosystems.



Challenges





1) Managing Climate & Disaster Risks

a) *Mainstream Climate/Disaster Risks in Development and Recovery Policy*

- Capacities of regional bodies to implement the Arab Action Plan on Climate Change, Paris Agreement, monitor/track SDG 13 trends and progress
- National capacities to implement NDC climate plans in a way that brings SDGs dividends and generates integrated solutions.
- Local capacities to integrate climate/drought risks into long-term crisis recovery plans and reconstruction projects for resilient recovery goals

b) *Strengthen Local Adaptive Capacities*

- Enhanced use of science, tools and data for risk-informed decision making; early warning systems, management of displacement and conflict risks
- Capacities of cities for front line action on climate change through improved decision-making, role of authorities, civil society, private sector

c) *Catalyzing Innovative Climate Finance*

- Generating scaled-up finance including via the Green Climate Fund, domestic resources and private partnerships
- Capacities for innovative finance, green sukuk, climate-indexed insurance.



2) Sustainable Energy Solutions

a) De-Risking Sustainable Energy Investments

- Capacities of regional bodies to implement the Arab Strategy for Renewable Energy, monitor SDG 7 trends/progress
- National capacities to implement national sustainable energy plans and overcome policy barriers to scaled-up finance
- Lack of effective national centers of excellence for sustainable energy solutions to promote innovation, partnership, investment

b) Energy Access for the Poor and Displaced

- Needs for an 'energy-plus approach' to bring energy dividends for poverty reduction, health/education, food/water security
- Growing needs for decentralized solar for access to energy in communities hosting refugees/IDPs, achieving basic needs of those in need and broader resilience of host communities



3) Resilient Ecosystems

a) *The Water Nexus*

- Capacities of regional bodies to implement Arab Water Strategy, address shared management of transboundary resources, monitor/track SDG 6 trends and progress
- National capacities for water governance including nexus of water with food and land management, sectoral coordination, rights-based approaches, water conservation technologies

b) *Ecosystems for Crisis Recovery*

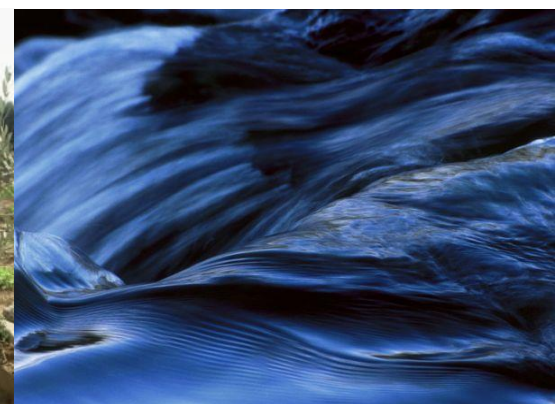
- Capacities needed to assess impacts of conflict and protracted displacement on land, water ecosystems; and toxicity risks
- Support needed for ecosystem rehabilitation in conflict affected areas; preventing ecosystem risks during recovery investments



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