

DR+10 from Policies into Action – Geneva 30th Sep 2024

Drought Monitoring and Forecasting, Aridity Management and Afforestation Programs in Saudi Arabia

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The Kingdom of Saudi Arabia (KSA), characterized by its arid climate, faces significant challenges related to drought and water scarcity. In response, the nation has embarked on ambitious initiatives under Vision 2030, aiming to transform its environmental landscape and enhance sustainability. Central to these efforts is the Saudi Green Initiative (SGI), which seeks to combat desertification, promote afforestation, and reduce carbon emissions.

A pivotal element of KSA's environmental efforts is the establishment of the Climate Change Center (CCC), which spearheads activities related to drought monitoring and management. The CCC collaborates with national and international institutes to establish best practices.

These initiatives signify Saudi Arabia's commitment to addressing climate change and environmental degradation, positioning the Kingdom at the forefront in aridity management and sustainable development. <u>ibrahim.hoteit@kaust.edu.sa</u> – <u>matteo.zampieri@kaust.edu.sa</u>



مـركـز التغيـر المنــاخـي Climate Change Center



The CCC will be the focal point for climate change science in the Kingdom of Saudi Arabia (KSA).

The Center will provide tools and information to help the KSA cope with a changing climate, now and in the future.





MISSION

Center will The the lead development climate of information services nationally and regionally, with the aim of mitigating the impact of climate phenomenon and contributing to development sustainable by delivering sound climate information and advising decisionmakers within the Kingdom and regionally.

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Regional Modeling



Drought Monitoring



The CCC supports afforestation efforts under the SGI through

The CCC employs advanced methodologies for drought monitoring and predictions ranging from seasonal forecasts to climate change scenarios. The results of these activities include an operational drought monitoring system, seasonal forecasts highlighting anticipated climatic anomalies, and downscaling of climate scenarios for the Arabian Peninsula. These forecasts offer invaluable insights that are critical for mitigating the adverse impacts of drought on agriculture and water resources.

Climate Scenarios



comprehensive studies on vegetation's role in climate modulation and the effectiveness of various afforestation strategies. Scientific research based on observations and numerical simulations finds positive impacts of vegetation on local and regional climates.

Greening Scenarios



References:

Supercomputing

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