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Now is the time to make nature-based solutions integral to net zero strategies

Over the past two years, various GCC countries have announced net zero pledges. In November 2023, GCC and other global leaders will convene at COP28 in Expo City Dubai to discuss how to reduce greenhouse gas emissions in the coming decades. Nature-based solutions (NbS), using natural ecosystems to remove CO_2 from the atmosphere, should be an integral part of these discussions, along with the national net zero strategies in the GCC.

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Successful journeys to net zero will require NbS. Take Germany for example. To reach carbon neutrality by 2045 and become carbon negative after 2050, the German government will actively incorporate NbS, particularly aimed at inland reforestation, coastal and seagrass restoration, and agricultural and urban interventions. In 2021, for the first time, Germany set a specific target for terrestrial ecosystems of removing 35 million tons of CO_2 equivalent in net emissions by 2040.

Indeed, the UN Environment Program estimates that if applied globally, NbS could potentially remove 11 to12 gigatons of CO_2 equivalent per year—almost one-third of current global CO_2 emissions. Moreover, these solutions offer a means of simultaneously addressing biodiversity conservation crisis and climate change.

NbS is especially relevant to the GCC, where climate change impacts such as coastal erosion and desertification threaten livelihoods, ecosystems, and biodiversity. Among the spectrum of nature-based solutions, mangrove restoration, afforestation, marine ecosystem conservation, and urban interventions are well suited to regional needs. We estimate that these solutions can help natural ecosystems store 950 million to 1,200 million tons of CO_2 equivalent, equal to a year's CO_2 emissions from the entire GCC.

Mangrove restoration along the Gulf and the Red Sea can limit coastal erosion, without drawing on the region's scarce water resources. Moreover, as a study published by the U.S. Department of Agriculture in 2011 attests, mangroves offer a carbon sequestration potential that is about four times higher per square meter than tropical rainforests. This explains why the Saudi Green Initiative calls for the planting of over 100 million mangrove trees along the country's coastline.

Marine plants, such as seagrass and kelp, also can play an essential role in the natural sequestration of carbon, while providing natural habitats for myriad marine species and enhancing biodiversity. The Abu Dhabi Blue Carbon Demonstration Project found that blue ecosystems in the emirate alone store around 41 million tons of CO_2 equivalent and are likely the largest carbon stock of any natural ecosystem in the emirate. Thus, the conservation, restoration, and regeneration of ecosystems in the Gulf and Red Sea will be important contributors to GCC decarbonization efforts.

Urban afforestation can make the GCC's cities better places to live. The Green Riyadh project is one of the world's most ambitious urban afforestation projects. It is planting 7.5 million native shade plants, such as fast-growing, heat- and salt-tolerant Damas trees, in clusters across the city, and using recycled water to nourish them. Among other goals, the project aims to lower the ambient temperature in Riyadh by two degrees Celsius in the summer, significantly reduce dust concentration, and improve air quality by reducing CO_2 concentration by 3 to 6 percent.

What is needed to support the net zero journeys of GCC countries is a holistic approach to NbS. Such an approach has four main aspects, which will unleash the full potential of NbS:

Prioritize: Rather than using NbS to bridge shortfalls in their quest for net zero down the road, GCC members should plan their NbS agendas now, execute them soon, and start realizing benefits in the medium term.

Organize: To avoid the pitfalls inherent in fractured agendas and nebulous decision rights, GCC countries should establish dedicated organizations to own, plan, and drive their NbS agendas.

Customize: The GCC countries should search the globe for NbS ideas. However, when they assess NbS abatement potentials, define priorities, and identify locations, they should keep the geographical and ecological realities of the region front of mind.

Collaborate: To capture the synergies and breadth of NbS, GCC countries should work together to expedite research and development, develop regional seed banks and nurseries, and harness opportunities that offer crossborder benefits.

Often, NbS are incorporated as trailing components in energy transition strategies. However, because NbS align climate action with nature conservation, they can deliver much higher returns. If the GCC countries prioritize and act on NbS in a consistent, coordinated manner, the entire region will reap the benefits.