Natural Climate Solutions (NCS) are a necessary component of any strategy to meet state, national and international climate goals due to their potential for negative emissions. But such solutions – ranging from avoiding deforestation to improved land management – are not sufficient by themselves to address the magnitude of the challenge. Global decarbonization across all sectors will be necessary to meet the Paris Agreement target of limiting temperature increase to below 2 degrees Celsius. Because of the scale and urgency with which the world needs to reduce greenhouse gas (GHG) emissions, any and all actions to reduce excess GHG emissions must be part of the solution equation. Rapid reduction of emissions from the energy and industry sectors is critical and nature-based approaches like reforestation, wetlands restoration, and improved land use practices can make substantial contributions to meeting the Paris goal.

This brief is based on a perspective co-authored by a team of experts, including Stanford University researchers, who note that climate portfolio strategies should not consider “either” NCS “or” energy and industry mitigation but rather “yes” NCS, “and” other mitigation efforts.

Key Points for Policymakers

As policymakers seek to take action to address climate change, two important considerations for a “yes” NCS “and” energy and industry mitigation approach are the risks associated with delayed action and a desire to avoid tipping points.

- **Burden of delay:**
  1. *Delaying energy and industry emissions reductions, even for a few years, dramatically increases the challenge of meeting the Paris goal of limiting warming to 2°C.* Each year that we delay reducing energy and industry emissions adds to the cumulative emissions that need to be reduced in future years. Thus, as we deploy NCS, negative emissions from NCS should not be used as a reason to delay progress on reducing energy and industry emissions. If we delay, those negative emissions will have to help compensate for the extra emissions accumulated during the delay instead of offsetting hard-to-reduce emissions sources such as the aviation and manufacturing sectors.
  2. *Delay also means “locked-in” emissions from existing sources and technologies.* Every new car, factory, or power plant designed to run on fossil fuels comes with an expectation of lifetime emissions extending over many years or, especially in the case of power plants, decades. Early retirement increases
financial and political costs, reinforcing pressure to continue using the product or facility and accepting additional emissions. Avoiding lock-in by transitioning rapidly from fossil fuels also ensures certain co-benefits such as improved air quality and human health.

Avoiding tipping points:

1. **Cumulative emissions will be higher if we delay decarbonization of the economy and substitute NCS mitigation, which increases peak warming.** Increased peak warming in turn increases the risks to human systems and ecosystems, including the risk of major and potentially irreversible land-based carbon releases from wildfire, forest die-off, and permafrost thaw.

2. **To maximize benefits of NCS, we must remove institutional, technological, political, and cultural barriers.** This includes continued work on policy levers to manage risks of leakage (shifting emissions outside of project areas) and later carbon releases, and to account for additionality (ensuring that emissions reductions are additional to what would have happened anyway in the absence of a particular policy). In addition, further efforts on robust institutions and governance are required to maximize NCS mitigation.

**Background**

According to the International Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C, we cannot expect to limit global warming to 1.5 degrees Celsius without some form of negative emissions. The longer we wait to decarbonize the economy, the more negative emissions will be necessary.

We should avoid framing the potential percentage of mitigation that can come from NCS such that emissions reduction can be interpreted as a zero sum game, in which more reductions in one sector leads to less reductions effort required in another sector. While comparing mitigation potential by sector in percentage terms provides context, it tends to downplay the critical fact that, in every analysis to date, getting the required cuts from energy and industry still entails a major increase in the level of ambition and the rate of progress. Dramatically increased mitigation effort across all sectors is imperative, if we are to keep the Paris Agreement goal within the realm of possibility.

**About the Authors**

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