

## Natural Climate Solutions Carbon Mapper FAQ

### **What are natural climate solutions**

- Natural climate solutions (or NCS) are approaches used to limit global warming by working with natural and managed forests, grasslands and agriculture, as well as wetlands systems to lower concentrations of greenhouse gasses in the atmosphere. This is accomplished by employing land use and management strategies that avoid greenhouse gas emissions and enhance carbon sequestration.

### **What are mitigation pathways?**

- Pathways are activities that involve specific conservation, restoration, and/or improved land management actions that practitioners may take to avoid emissions and/or enhance sequestration
- Country level pathway estimates are approximations, based on global datasets, and we encourage regional/national assessments to improve estimates.
- Pathway estimates do not use official national datasets and/or baseline setting procedures, nor do we use national definitions of accounting pools, therefore our NCS estimates cannot be directly compared with NDCs or results available from national accounting systems.

### **What is the Paris Agreement?**

- The [Paris Agreement](#), drafted at the 2015 Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change ([UNFCCC](#)), brought together more than 190 countries to draft an agreement to reduce greenhouse gas emissions and respond to the threat of climate change by keeping the global temperature rise below 2°C this century.

### **What are NDCs?**

- NDCs, or Nationally Determined Contributions, are pledges countries developed for the 2015 Paris COP describing methods and targets they will undertake after 2020 to reduce greenhouse gas emissions. Efforts outlined in NDCs are meant to keep the global temperature rise below 2°C this century in as stated in the Paris Agreement.
- If a country submitted both an unconditional and a conditional target the number shown represents the unconditional target.
- All NDC data presented here relies on a range of assumptions due to the different ways countries have expressed their official NDCs. For official information on each country's NDC, please refer to our sources below.

### **What is the source of the NDC reduction targets?**

- All NDC data presented here relies on a range of assumptions due to the different ways countries have expressed their official NDCs. For official information on each country's NDC, please refer to our sources below.
  - <http://climate-energy-college.org/ndc-indc-factsheets>
  - <http://www4.unfccc.int/ndcregistry/Pages/Home.aspx>
  - <https://www.climatewatchdata.org/>

### **How did you calculate the emission reduction target?**

- The relative emission reduction value, expressed in metric tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e), was calculated by applying the country's emissions reduction target percentage to the reported emissions of the country's specified target date. Most target dates are reported as 2030 business as usual (BAU contained in individual country's NDC submissions) but some targets are relative to historic emission rates as those of the European Union (1990) and the United States (2005)

### **How did you calculate the NCS mitigation potential?**

- The NCS analysis is based on original [research](#) and a synthesis of 300 studies conducted over two years involving 32 researchers from 18 organizations. Combining factors of land conversion rates, stored terrestrial carbon, greenhouse gas emissions, carbon sequestration rates, and extent of habitat or land use in the case of agriculture management, researchers quantified the total amount of carbon and carbon dioxide equivalent (CO<sub>2</sub>e) that would be absorbed by natural systems if conversion was halted, as well as the amount that would be absorbed from the atmosphere under various restoration and improved management activities for each of the 20 mitigation pathways.

### **What does the term mitigation refer to in this context?**

- In this context, mitigation refers to the ability of natural and managed terrestrial and wetland systems to contribute to diminishing the global temperature rise by reducing or stopping greenhouse gas emissions or by absorbing carbon from the atmosphere.

### **What is maximum mitigation potential?**

- Maximum mitigation potential is the total amount of climate mitigation possible through the implementation of pathway activities from a natural or managed system, considering nature's full ability to store or absorb carbon based on its total global extent. Under this scenario, implementation of pathway activities is not limited by cost but it is constrained by maintaining land area to meet society's requirements for food and fiber by no reduction in cropland.

### **What is cost-effective mitigation potential?**

- The calculation of cost-effective (\$100USD/ton CO<sub>2</sub> in 2030) is based on a globally derived marginal abatement costs (MAC) and do not directly reflect country specific economics. Therefore, we advise the viewer to interpret the cost-effective designation as an approximation.
- Scientists project that climate change will cost society more than \$100 per tonne of CO<sub>2</sub> emitted if we do nothing. Therefore, spending up to \$100 per tonne should be considered cost-effective. This proportion of the maximum potential mitigation total is the best measure for understanding society's ability to employ natural climate solutions as a response to climate change.

### **Why are there only ten pathways shown in the dashboard?**

- The scientific analysis underlying the mitigation data presented in the Nature 4 Climate Carbon Mapper considered 20 pathways, however due to data limitations, only 10 climate mitigation

pathways area available to view. The data for the pathways *not included* in the Carbon Mapper are either not spatially explicit or only exist at a global scale and cannot be disaggregated to the country level. For example, there may be opportunities for NCS within large agricultural sectors that are not presented in the Carbon Mapper due to inadequate global data, but exist within localized country data. The 10 spatially explicit pathways presented in the Carbon Mapper are pre-eminent in terms of their climate mitigation potential representing 75% of the total global NCS cost effective mitigation.

**What are the limitations of the data presented in the Carbon Mapper and how should I use the information presented to understand the mitigation potential from land use in relation to our Nationally Determined Contributions?**

- The aim of the Carbon Mapper is to serve as an initial engagement tool to make countries aware of NCS potential in their countries; to serve as a starting point for deeper dives to more accurately assess their real NCS mitigation for inclusion in future revisions of their NDCs.
- The country level pathway estimates presented in the Carbon Mapper are approximations based on global datasets and do not use official national datasets and/or baseline setting procedures. These pathway estimates also do not use national definitions of carbon accounting pool and therefore, the NCS estimates presented in the Carbon Mapper cannot be directly compared with NDCs or results available from national carbon accounting systems.
- We fully recognize the gaps in in-depth country level pathway analysis, and therefore encourage regional/national assessments of NCS potential to improve estimates for individual countries.

**Where can I find more information on the pathways?**

- To find more information on the individual pathways click on the pathway name and follow the “Learn More” link in the popup window.

**Where can I find information on the science behind this dashboard?**

- <http://www.pnas.org/content/early/2017/10/11/1710465114>