

## Key Messages

### FOLU Report

#### Modelling greenhouse gas fluxes from China's agriculture, forestry and land use sector

24<sup>th</sup> of May 2023

- A new assessment by FOLU examines greenhouse gas (GHG) projections and models utilized in China's agriculture, forestry, and land use sector. The study assesses eight models, comparing their sector coverage, carbon pools, and land use categories. It highlights the importance of enhancing consistency among models to improve certainty.
- For the agricultural sector, the models have some similarities in terms of structure and scope. Models cover the most relevant land use categories for China, such as forests, grasslands, and crops.
- The study finds that there are big uncertainties in current models when it comes to estimating the amount of greenhouse gas emissions and removals in China's past and future. The models differ greatly in their estimates, with a difference of 1,119 million tons of carbon dioxide equivalent (MtCO<sub>2</sub>eq.) per year, which is roughly the same as China's estimated greenhouse gas absorption in 2014.
- Most models predict that China's agricultural sector's non-CO<sub>2</sub> emissions will peak between 2045 and 2060, and also that it has a strong mitigation potential.
  - Agriculture has the potential to reduce emissions by an estimated range of 200 to 800 million metric tons of carbon dioxide equivalents (MtCO<sub>2</sub>eq) by 2050.
- As the models differ considerably in their representations of the Chinese food and land use sector, caution is needed when comparing projections and when using them to formulate policy targets.
- More work is needed to make the models better aligned with the Chinese National GHG Inventory by improving their consistency and effectiveness. The study suggests that collaboration between model developers and national GHG inventory compilers\* is essential for refining the data used in projecting future human-caused greenhouse gas emissions.
- By comparing models, validating their results, and working together, we can reduce uncertainty and enhance the accuracy of these projections.
- Researchers, research institutes, companies, NGOs and others must collaborate and exchange their data sources. This will lead to improvements in both models and national GHG Inventories.

\*These are the group of people that compile the historical GHG data for China and provide this to the UNFCCC