Identifying and quantifying emission hotspots from the AFOLU sector (2000-2005)
Independent monitoring to assist establishing baselines and track emission trends

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Theme 2: Science to take stock and assess progress on mitigation

(a) How can we take stock and assess progress on the Paris Agreement long-term mitigation goal (Article 4.1), including by using indicators?

(b) How can science information support the facilitative dialogue 2018?

(c) What are the emerging information, opportunities and cost estimates in addressing climate change in line with sustainable development?

(d) How do we consider the role of other short-lived climate forcers in reducing temperature?

Roman-Cuesta et al. statements

1. Spatially explicit data on the location of emission hotspots for the land use sector (AFOLU) is an example of how new independent emission datasets can **help build trust and improve the transparency, comparability and completeness** of country emission reports by covering country data gaps, help contrasting current estimates, and offering much needed uncertainty estimates.

2. Information about the location and intensity of key emission sources supports the development of **mitigation activities** and helps track emission drivers.

3. Emission hotspots can help the stocktake process by offering a benchmark (2000-2005) against which countries can contrast their present and future emission performances (**stocktaking processes**), navigate and prioritize mitigation actions at subnational scale, and support policy makers and donors on their decision making processes of where and why to take action.

4. Our research offers disaggregated emissions of CO2 versus non-CO2 (N2O, CH4) that could be used as **mitigation indicators**, Moreover**, n**ew global data on agriculture and livestock are helping move the focus of land use emissions out of the CO_2 domain and into the CO_2e domain (CO2, N2O, CH4). Due to their lower uncertainties, non-forest (non-CO2 emissions) play an interesting part in the discussion of mitigation potentials: biophysical versus economic and technologic, as well as on climate efficiency and effectiveness.

5. **Next steps**: There still are large uncertainties in the AFOLU emissions, with a clear bias towards the forest sector (i.e. forest degradation and deforestation), with new research suggesting even larger uncertainties for afforestation emissions (i.e. restauration challenges). More dynamic, multitemporal emission estimates at a global scale will help to support the independent tracking of emission trends and associated stock-taking processes.