

Monitoring anthropogenic and natural sources and sinks of GHGs: Challenges in Asia and Oceania

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The Paris Agreement established a long-term goal of keeping the global average temperature well below 2 degrees Celsius above the pre-industrial level by achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases (GHGs) in the second half of this century. To monitor and evaluate the impacts of climate change measures for implementing the Paris Agreement, accurate knowledge of emission trends and reliable GHG inventories are essential. Emission reporting from developing countries is particularly important.

Asia, as one of the world's largest GHG emitters, has a responsibility to play an important role to turn the goals of Paris Agreement into reality. Urgent needs in Earth observations for GHGs are to reduce uncertainties in their source and sink estimations and to identify current knowledge gaps and requirement for further international collaboration. The reliability of evaluations of natural and anthropogenic sources and sinks has been improved in recent years, however, due to uncertainties in modelling tools, and limited observational data coverage, high uncertainty still remains, particularly for CO₂. Discussions will be focused on current status and challenges from NIES's relevant GHG observation and analysis to improve up-to-date analysis systems and data coverage particularly in Asia–Oceania for better estimation of the distribution of anthropogenic and natural sinks and sources with sufficient accuracy in time with such activities as the Global Stocktake Process under the Paris Agreement.

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