



Satellite tool to strengthen capacities for monitoring

URUGUAY, PANAMÁ, PERÚ, COLOMBIA, COSTA RICA, ESTADOS UNIDOS, NUEVA ZELANDA

i Webstory



Technological solution

The technological solution consists of a satellite-based tool and an open-access web platform to estimate, monitor, report, and verify methane emissions in rice ecosystems. This tool will provide frequent, reliable, and free estimates to support decision-making by the rice-producing community, governments, and other stakeholders involved in climate management within the sector.



Technological description

The project will strengthen regional capacities for monitoring, reporting, and verification of methane emissions through the design of satellite-based models to estimate emissions in rice production systems. These models will be validated using field samples collected in rice-growing regions with contrasting ecosystems. The data, results, and knowledge generated will be integrated into a web platform to democratize access to key information and support sustainability, mitigation, and climate adaptation strategies in the rice sector.



Impacts and results

Design of satellite-based models to estimate methane emissions in rice ecosystems using artificial intelligence (AI) algorithms with the objective of emulating the physicochemical processes encoded in atmospheric gas transport models. Meteorological data, land cover and atmospheric CH4 concentrations are expected to be used to predict emission fluxes from rice ecosystems using satellite data. This will allow the characterization of different rice regions using novel methane sensors. Field data acquired will be correlated with satellite data and the results of this validation will be included in a web platform, making them available to the entire rice community and governments. This is expected to provide a novel information system that will contribute to policy-making aimed at mitigating GHG emissions and improving the welfare of rice producers in the project countries.



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