Paddy Rice Research Group of Global Research Alliance on Agricultural Greenhouse Gases: Working Together to Reduce Emissions and Improve Production Efficiency

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Poster presentation

EXTENDED ABSTRACT

The Global Research Alliance on Agricultural Greenhouse Gases – GRA (http://globalresearchalliance.org) brings 46 countries together to find ways to grow more food without growing greenhouse gas emissions. The Paddy Rice Research Group (PRRG) of GRA joins scientists from rice countries to identify ways to reduce the emissions intensity, while improving overall production efficiency of paddy rice.

The Group's work is focused on providing knowledge of source/sink extents and mitigation options to paddy rice farmers, land managers and policy makers by looking at the impacts of water and crop management, organic matter and fertilizers and cultivar selection. It will also help improving countries' national inventories of greenhouse gas emissions from paddy rice cultivation systems.

Thirty-three of the 46 Alliance countries are currently members of the PRRG, which work in collaboration with partners (IRRI, CIAT, FLAR, AfricaRice, CCAFS) and other international networks (MARCO, PROCISUR, FluxNet).

PRRG works in two Sub-Groups: America and Asia with annual scientific meetings. Last ones were held in Nanjing, China in November 2015 and Stuttgart, Arkansas – USA in July 2016. It also co-organizes international symposia on mitigating GHG emissions from paddy fields.

The Group is making a comparison of the measurement protocols at different countries, and experts are analyzing automated measurement data for the closed chamber technique.

From these exercises, the Group helped to prepare the first version of "Guidelines for Measuring CH4 and N2O Emissions from Rice Paddies by a Manually Operated Closed Chamber Method" published by NIAES in 2015 (Minamikawa, K., et al.). It is also working on identification of "good practice" options for each region and climate.

A five-years research project, MIRSA (Greenhouse Gas Mitigation in Irrigated Rice Paddies in Southeast Asia), is underway, funded by the MAFF, Japan (http://climatechange.irri.org/projects/mitigation/mirsa). The project aims at assessing the feasibility of GHG mitigation through water saving techniques in irrigated rice fields. Japan, Indonesia, Philippines (together with IRRI), Thailand, and Vietnam are participating.

A new Flagship Project named "Multi-country on-farm assessment of multi-beneficial management techniques in the rice sector" was approved at the last GRA Council Meeting (October 2016), and it is under preparation (http://globalresearchalliance.org/wp-content/uploads/2016/12/Mexico-City_Council-Meeting-Report_October-2016.pdf). The project will use the collaborative strength of the GRA to identify rice production techniques

that can reduce production costs, water demand and net GHG emissions without yield penalties in different systems and climate zones. Results will be co-validated and co-promoted with local farmers. Lessons learnt and acquired knowledge will be shared with PRRG members and partners to facilitate massive adoption.

References

Minamikawa, K., Tokida, T., Sudo, S., Padre, A., Yagi, K. (2015) Guidelines for measuring CH_4 and N_2O emissions from rice paddies by a manually operated closed chamber method. National Institute for Agro-Environmental Sciences, Tsukuba, Japan.