



1. Title

Mitigating Greenhouse Gas Emissions from Rice Paddy Soils

2. Type

Working Groups Symposium

3. Organizer(s) & Convener

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4. Rationale

Paddy fields are recognized as an important source of atmospheric greenhouse gases (GHGs) mainly through the emissions of methane (CH₄) which is specific to flooded ecosystems. Globally, over the last 70 years there has been a rapid increase in the harvest area of rice to meet increasing demand for rice which has resulted in increased emissions of CH₄. In addition, it is suggested that by introducing high-yielding varieties, together with new cultivation technologies, it has brought about an additional increase in CH₄ emissions because of accelerating carbon turnover in the rice-soil system, caused by adding more organic matter to the soil in the form of crop residues. The rate of global CH₄ emissions from rice fields is also expected to increase further in the next decade in order to meet expected consumption rates.

Reducing CH₄ emissions from paddy fields is very important to stabilize atmospheric concentration of the greenhouse gas, which can contribute significantly to mitigate





global warming. Because of the possibility of controlling the emissions by agronomic practices, paddy field management must be one of the most likely means of mitigating CH₄ emissions. Actually, it is demonstrated that a number of traditional or improved management practices can mitigate CH₄ emissions, providing a “win-win” outcome rather than a conflict between different economic, environmental and social goals. Those studies also suggested that some mitigation options for CH₄ may promote an increase in the emissions of nitrous oxide (N₂O) or a curb of soil carbon sequestration. Therefore, it is necessary to consider those trade-offs with the fluxes of other GHGs.

5. Objectives

This symposium will address:

- (1) Overview of the issues related to paddy field management and GHG emissions,
- (2) Monitoring and measurements of GHG emissions from paddy fields,
- (3) Mitigation options for GHG emissions from paddy fields,
- (4) Compilation and analysis of databases for GHG emissions from paddy fields, and
- (5) Modeling GHG emissions from paddy fields.

This symposium aims;

- (1) To summarize the latest information of research activities in the world,
- (2) To identify gaps in knowledge, and
- (3) To discuss future research needs and possible forms of cooperation.

6. Description

This symposium will provide an opportunity to bring researchers and policy makers from different countries together to exchange the latest information on paddy field management and GHG emissions. The symposium will be jointly supported by the Global Research Alliance on Agricultural Greenhouse Gases (GRA) and the Monsoon Asia Agro-Environmental Research Consortium (MARCO)

