GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

GRA PRRG Asia Sub-Group meeting, Bali

•12 October 2019

Country Report – Japan & MIRSA-3 Project in general

Yasukazu Hosen

Paddy Rice Research Group: Recent achievements (1)

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MAFF[1)] of Japan: Project Overseer

JATAFF[2)]: General administrative supporter

NARO[3)]: Administrative supporter from scientific points of view, including the role of convener for two sessions of the workshop, using the GRA network

*1) MAFF: Ministry of Agriculture, Forestry and Fisheries
*2) JATAFF: Japan Association for Techno-innovation in Agriculture, Forestry and Fisheries
*3) NARO: National Agriculture and Food Research Organization

- An APEC Project *"**Capacity Building** on management Technologies for Climate Smart Rice Cultivation in the South-East Asian and Latin America Rice Sector"*
  - Overseen by **Japan**
  - Propose by **Japan**, **Mexico**, **New Zealand**
  - Co-sponsored by **Chile**, **Malaysia**, **Philippines**, **Thailand**, **Vietnam**
  - Workshop *"Rice Landscapes and Climate Change – Options for mitigation in rice-based agroecosystems and scaling-up of climate-smart rice cultivation technologies in Asia"*
    - By FAORAP, APEC, JGSEE/KMUTT, AEGIS, ASEAN Climate Resilience Network, NARO, GRA, GIZ, SRP, IRRI, MAFF of Japan, WBCSD
    - 10-12 October 2018, Bangkok, **Thailand**
    - ≈120 attendees including those from **Chile**, **China**, **Indonesia**, **Malaysia**, **Japan**, **Philippines**, **Thailand**, **Vietnam** (with the APEC project funds, 4 speakers and 15 attendees were invited.)
  - Capacity building on 15-16 November in Parral, **Chile**
    - > 30 attendees (with the APEC project funds, x speakers and xx attendees were invited.)

Paddy Rice Research Group: Recent achievements (2) Flagship

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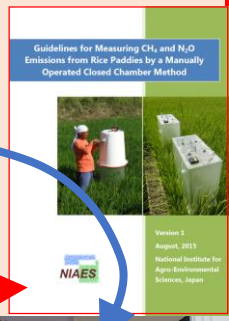
- MIRSA-3 Project (27 Nov 2018 – 31 Mar 2023)
  - Develop multi-beneficial integrated rice cropping techniques that improve rice cultivation of Southeast Asia for low emissions, paddy soil conservation, and stable productivity.
  - Fund contributor: MAFF of Japan
  - GRA Council Champions: **Indonesia**, **Japan**, **Philippines**, **Vietnam**, CGIAR (IRRI)
  - Kick-off meeting on 16 January 2019 in Hue, **Vietnam** (>36 participants)
  - 2nd general meeting on 12-13 October 2019 in Bali, **Indonesia** (≈19 participants)
  - A product of the former project: "Minamikawa et al. (2015) Guidelines for measuring CH_4 and N_2O emissions from rice paddies…" was introduced in the "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories".



- FONTAGRO Project (2018 - 2021)
  - Improve adoption of AWD by farmers, validating appropriate AWD in farmers' fields in South America.
  - Fund contributor: FONTAGRO
  - GRA Council Champions: **Colombia**, **Perú**, **Chile**, CGIAR (CIAT, CCAFS), FONTAGRO + FLAR
- CLIFF – GRADS Scholarship (2019)
  - Identify high yielding rice cultivars that reduce methane emissions.
  - GRA Council Champions: CGIAR (IRRI, CIAT, CCAFS) + FLAR
- UIUC Project (2019 - 2020)
  - Benchmark the economic and environmental sustainability of rice production in Latin America using the recently developed SRP platform.
  - Fund contributor: University of Illinois International Joint Research Program
  - GRA Council Champions: **USA**, CGIAR (CIAT, AfricaRice, IRRI, CCAFS) + FLAR

MIRSA-3 Project

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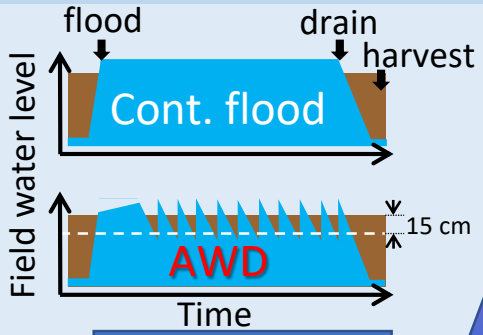
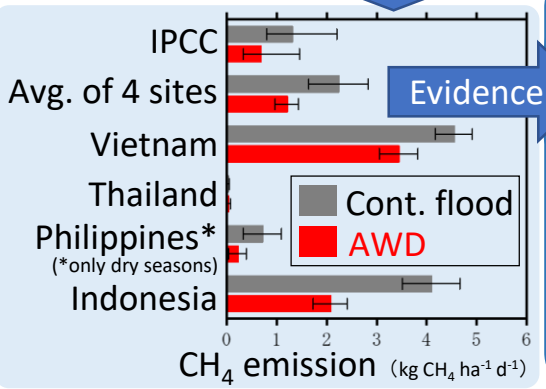
At the former MIRSA Project ("MIRSA-2"),

AWD (Alternate Wetting and Drying), a sort of water-saving intermittent irrigation technique



Introduced to paddies of SEA



Evidence

AWD significantly reduced GHG emission in Vietnam, Thailand, Philippines, & Indonesia

MIRSA-2 → MIRSA-3

At the newly launched MIRSA Project ("MIRSA-3"),

We manage/select not only Water (AWD)

but also Organic matters, Chem. Fertili-zers, Cultivars

to realize the following from long-term perspective:

1) GHG reduction by 30%
2) Maintenance of soil C & N conc.
3) Stable rice productivity

- Methods -

A) Verification at field plots in Vietnam, Philippines, and Indonesia

B) Long-term evaluation of

B-1) GHG, etc. with DNDC-Rice Model, widening target areas and management/selection options

B-2) soil C & N with RothC Model, using soil data including those of existing long-term experimental fields

HUAF: University of Agriculture and Forestry, Hue University
IAERI: Indonesian Agricultural Environment Research Institute
IRRI: International Rice Research Institute
JIRCAS: Japan International Research Center for Agricultural Sciences
NARO: National Agriculture and Food Research Organization
PhilRice: Philippine Rice Research Instutite

NARO

JIRCAS

HUAF

PhilRice

IRRI

IAERI