FAO WS
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Trade-off between soil C sequestration and CH4 emission from rice paddies

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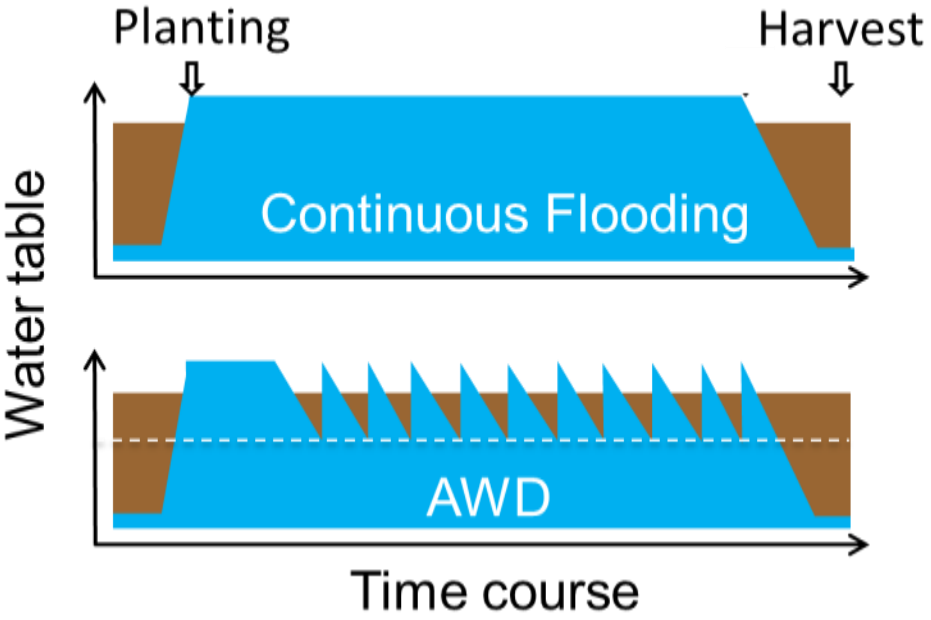
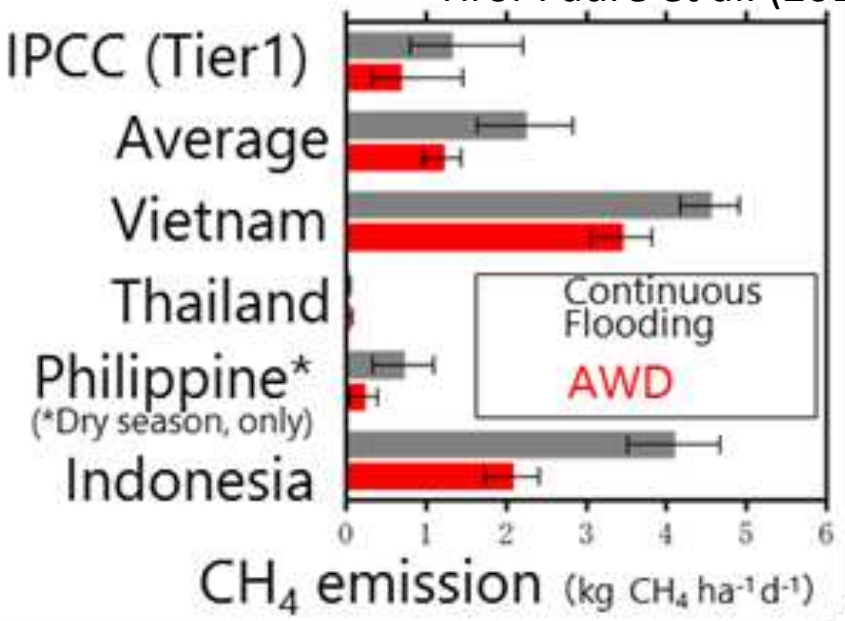
MIRSA (Greenhouse Gas Mitigation in Irrigated Rice Paddies in Southeast Asia) project



Tirol-Padre et al. (2018)



AWD (Alternate Wetting & Drying): water saving technology is effective for reducing CH_4 emission from paddy

AWD could reduce 30% of total CH_4 emission from paddy fields in four Asian countries

GLOBAL RESEARCH ALLIANCE ON AGRICULTURAL GREENHOUSE GASES

Supported by MAFF, Japan

Next phase still ongoing (2018~2022)

Insisting triple win: GHG mitigation, soil conservation and sustainable food production in Indonesia, the Philippines and Vietnam

- Field monitoring of GHG and rice growth
- Modelling soil carbon and GHG
- Soil organic matter mechanism study

Considering synergy and trade offs

Increase productivity, stability,
Adaptation to climate change

Synergy

Increase organic inputs → Increase soil C

Decrease soil C derived CO2 emission

Trade-off

Further changes in management needed to offset this negative effect (e.g. water management in paddy fields) → Increase CH4 and/or N2O

Japan uses soil C model for GHG inventory

- IPCC tier 3 method (modelling)
- Effective for taking more detailed environmental conditions into account
- Can be used for developing NDC (future projection)
- Models are effective also to consider trade-off