IRRI

Rice and SLCP Mitigation in the Philippines

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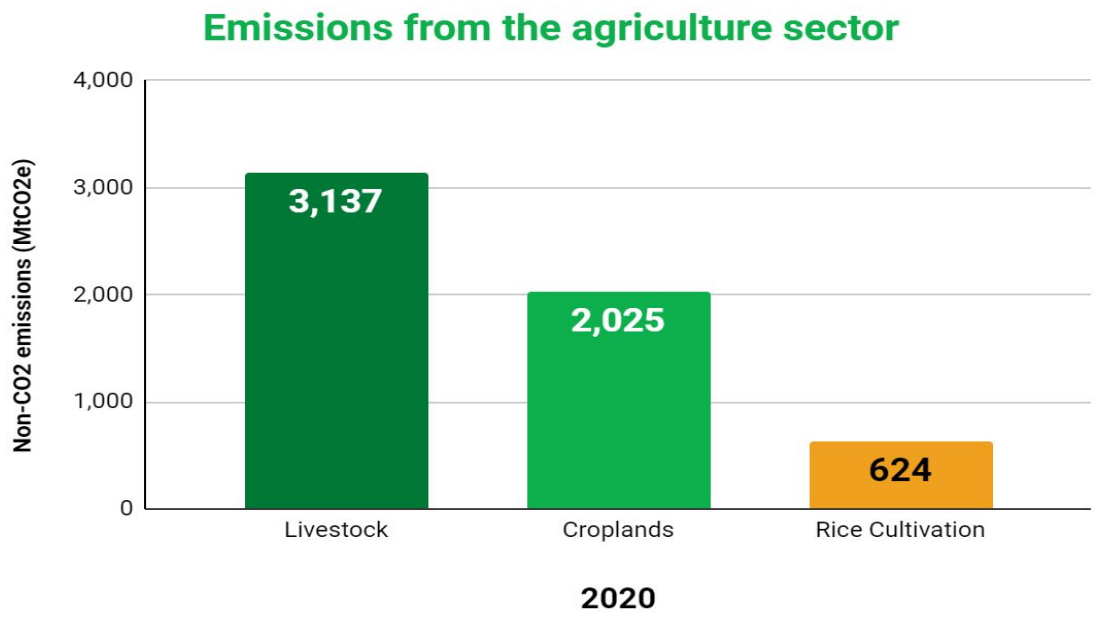
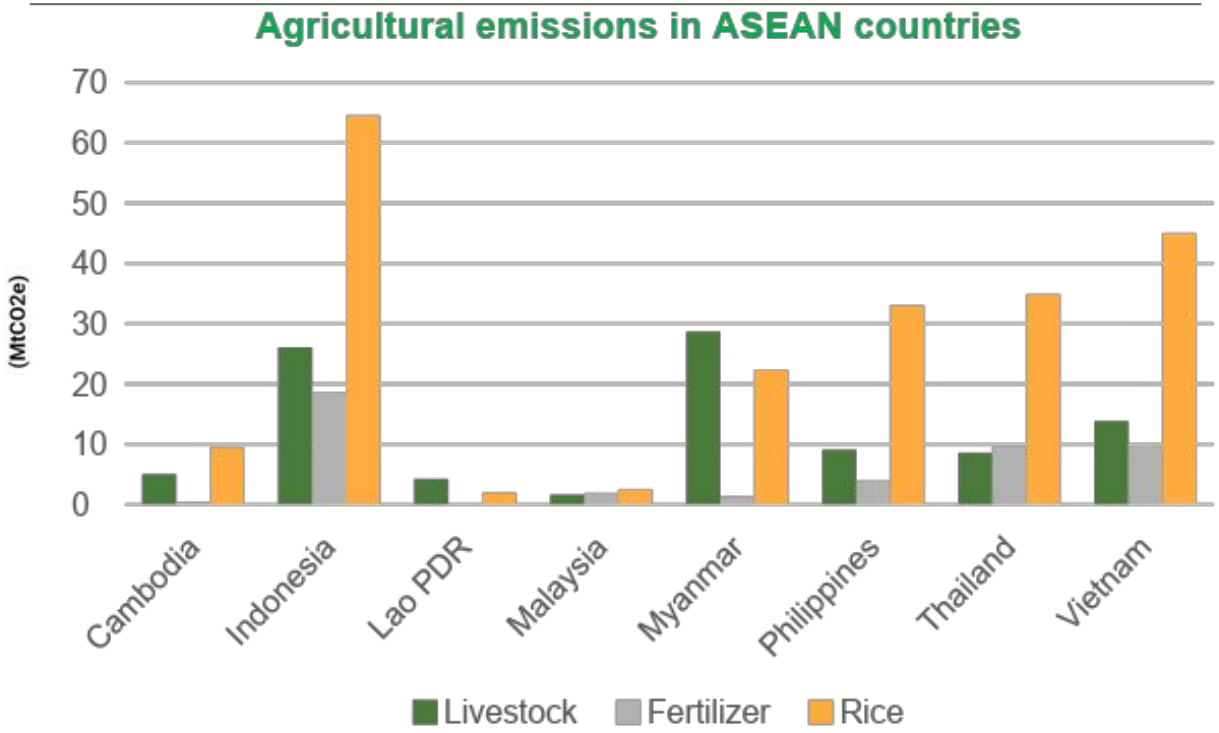
Rice production and greenhouse gas emissions

- Globally rice cultivation contributes around 6-8% to food system emissions while livestock contributes 40-50%.
- In SEA countries, emissions from rice are higher than livestock or other crops.
- Rice methane emissions are mostly due to the traditional method of paddy farming, where flooded fields release methane and other greenhouse gases through anaerobic decomposition





We can reduce methane across the rice production cycle

can reduce as much as 65% - mostly methane

UP TO 10%	UP TO 30%	UP TO 33-55%	UP TO 15%
Timing **of residue incorporation in field**	**Shifting from transplanted to Direct Seeded Rice**	**Alternate Wetting & Drying, Efficient use of fertilizer**	**Amount of residue left after harvest, no straw burning**
Pre-season	*Crop Establishment*	*Growing Season*	*Post-harvest*

Shift from **Puddled Transplanting** to **Direct Seeded Rice**

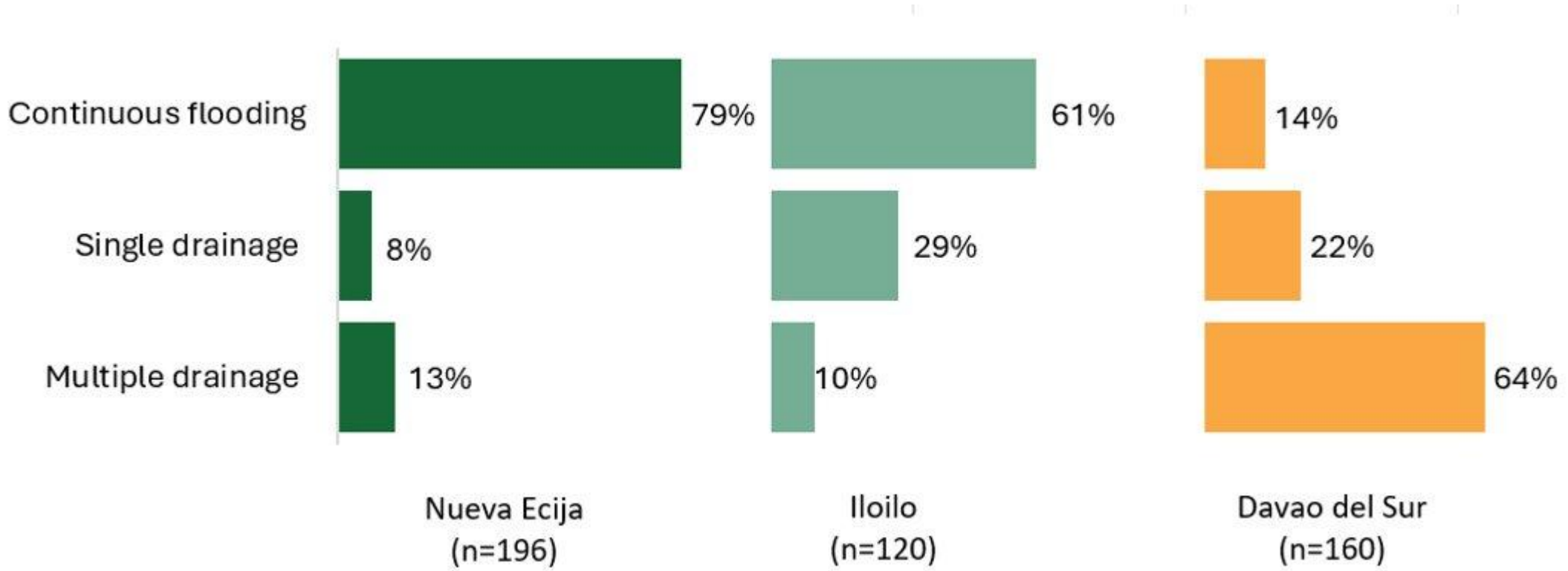
Changing of water regime from continuous flooding to **single drainage, or AWD**

a) Mushroom production for a nutritious, profitable product

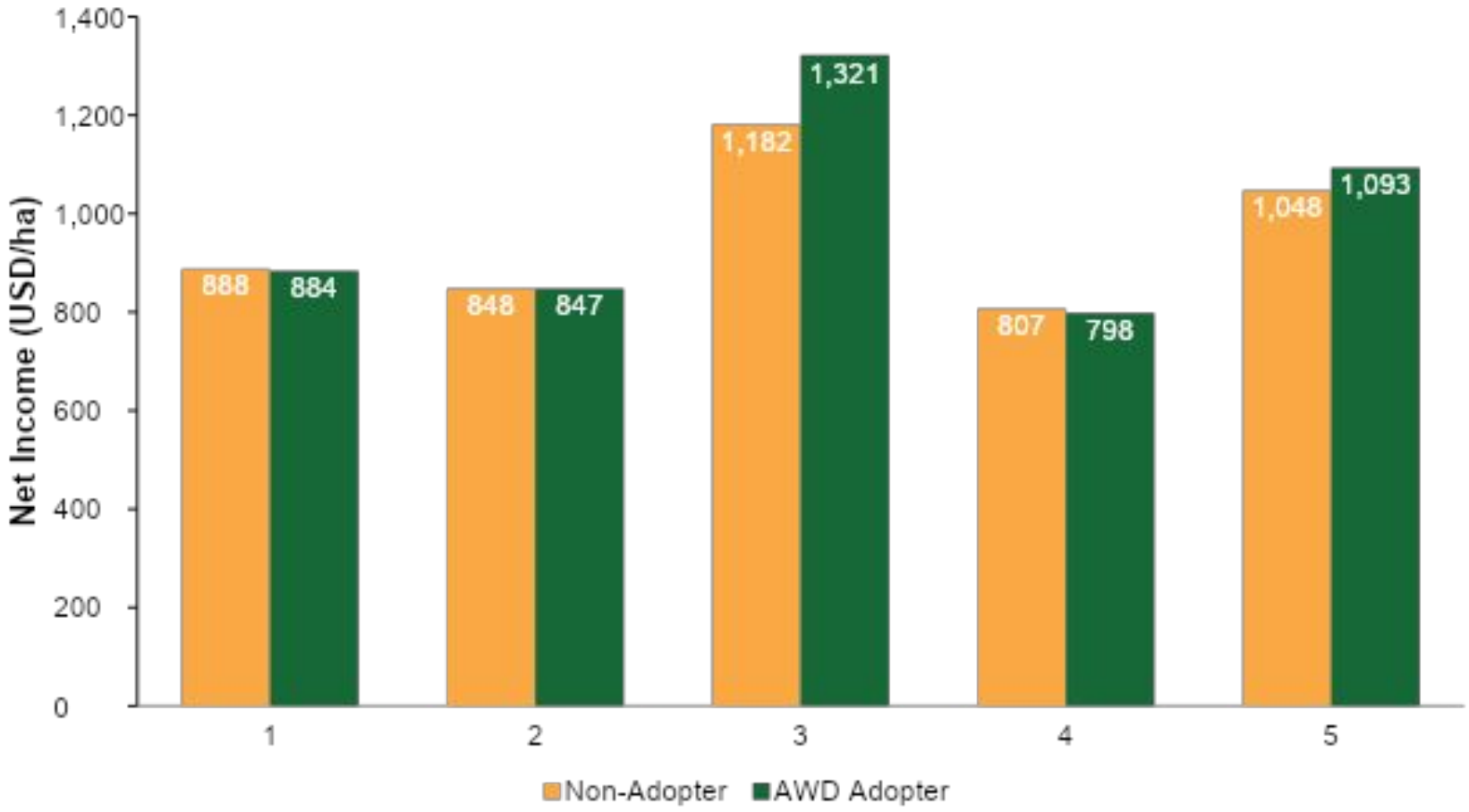
b) Mechanized composting to produce organic fertilizer

Current irrigation practices

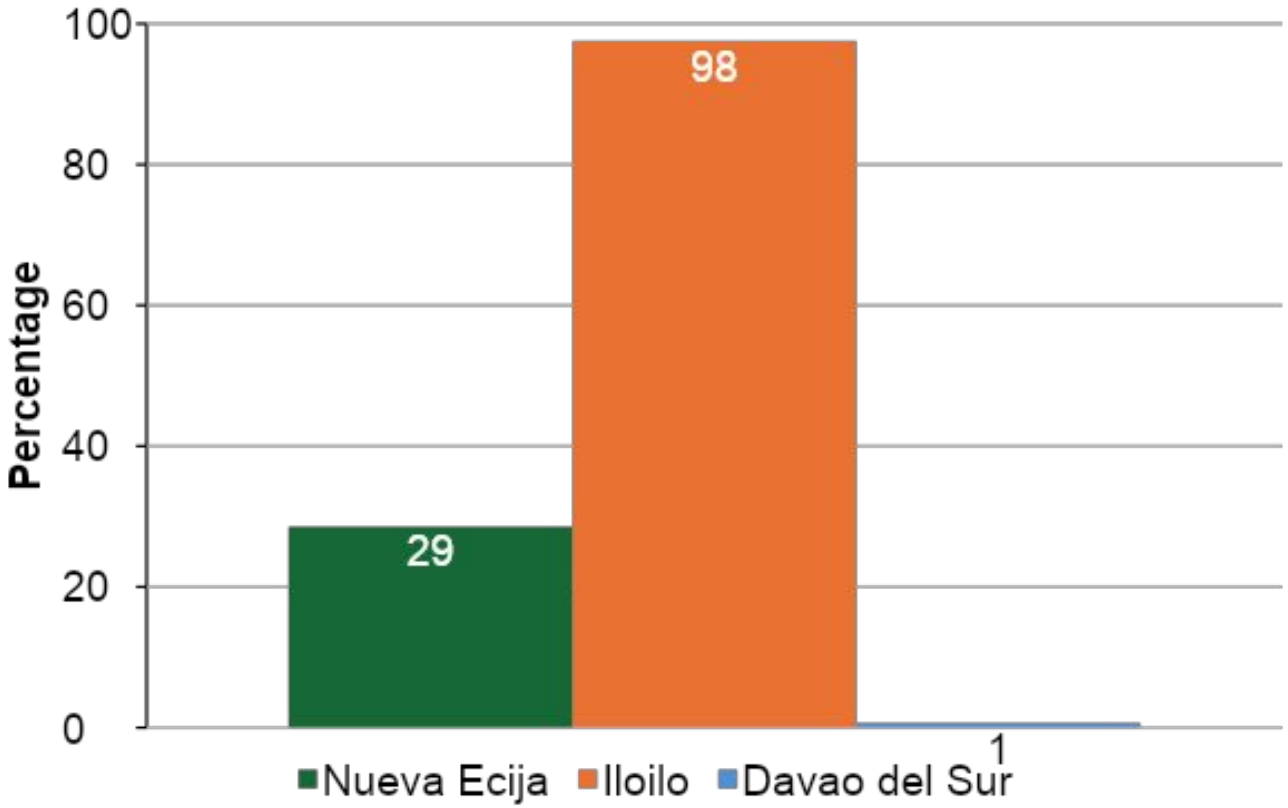
Water regime in the past 12 months

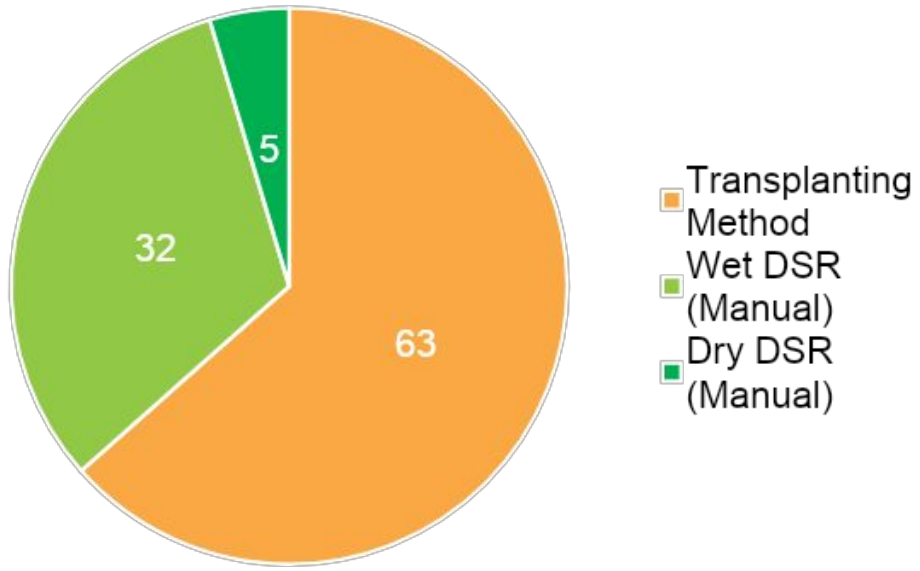


Causal identification of AWD impact: Propensity score matching



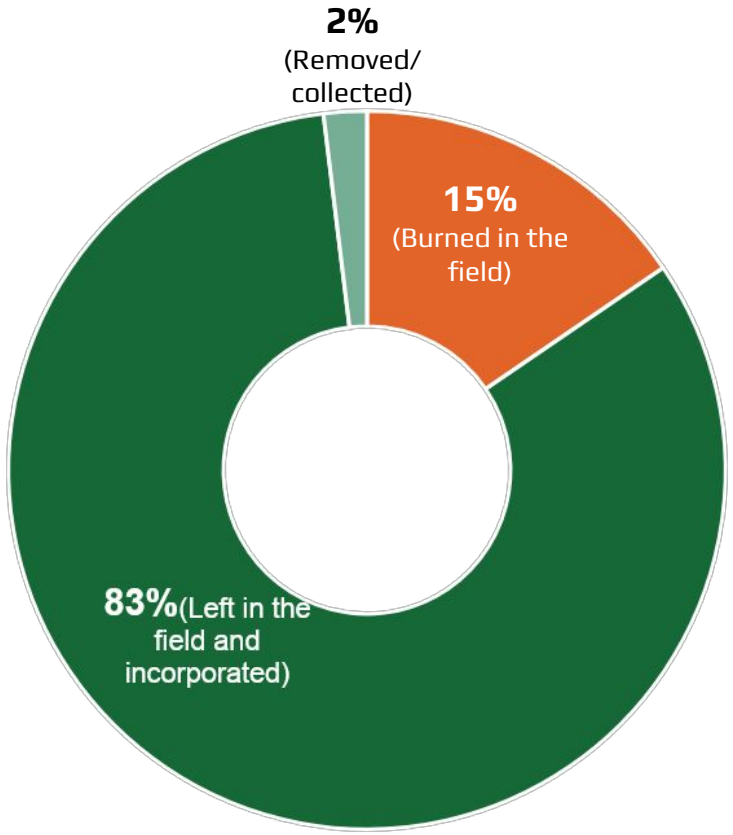
Adoption of Direct-Seeded Rice (DSR)

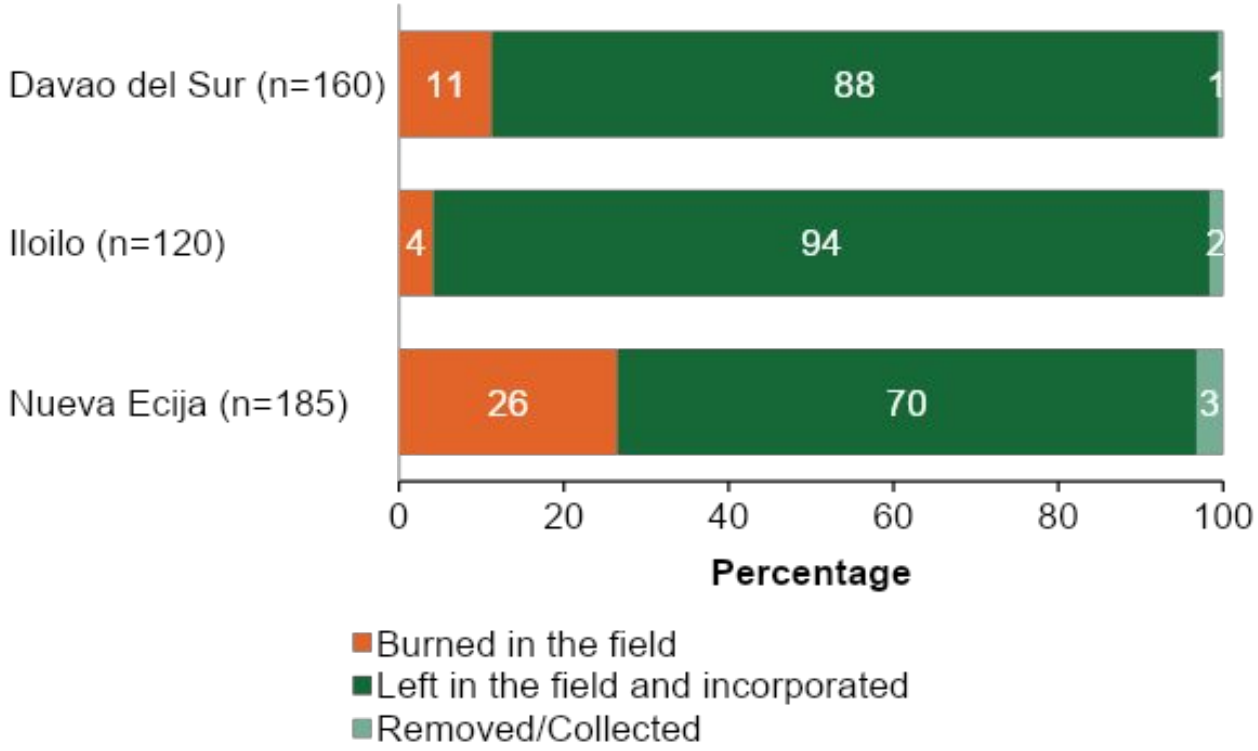




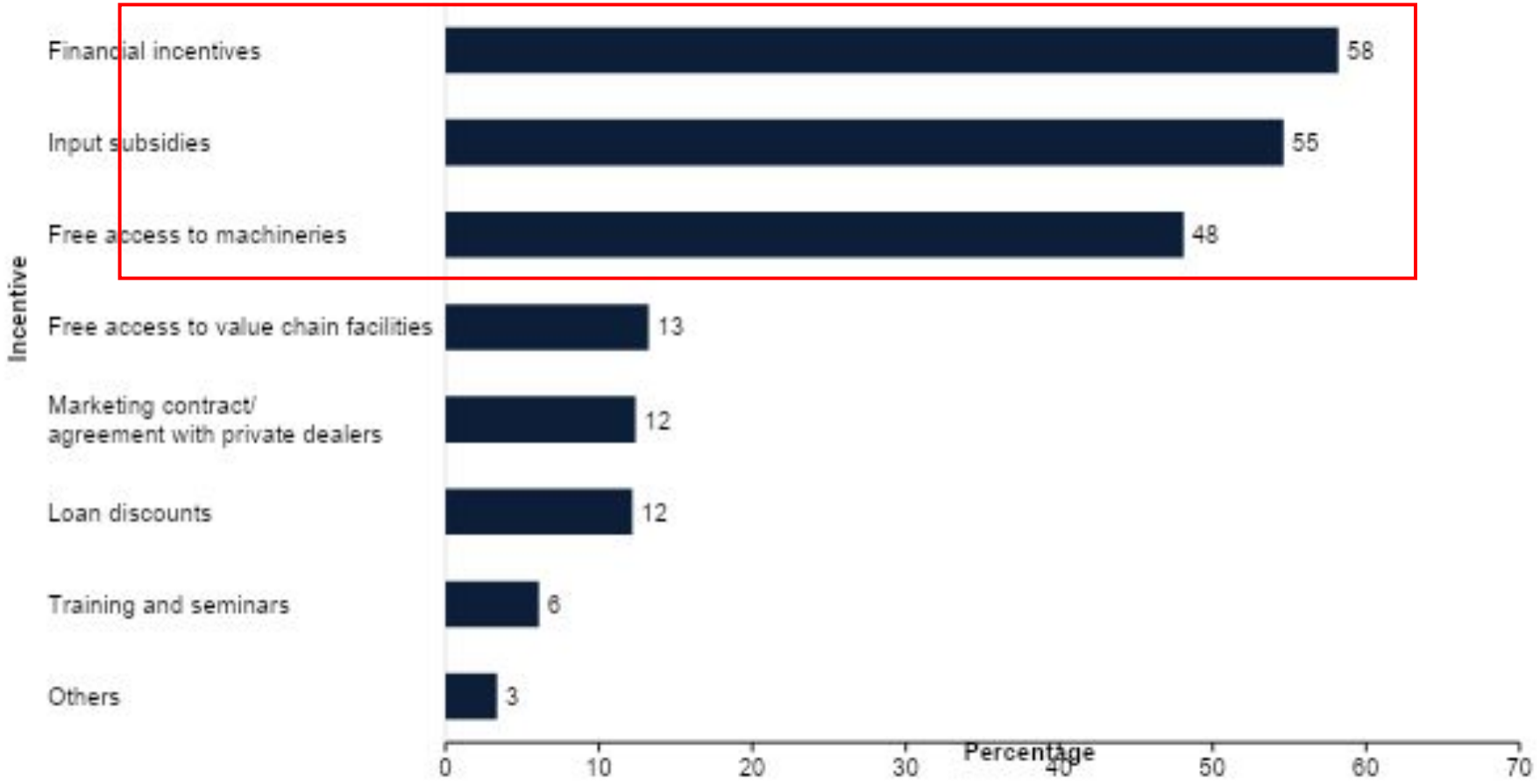
N = 476

Rice straw management (RSM) practices

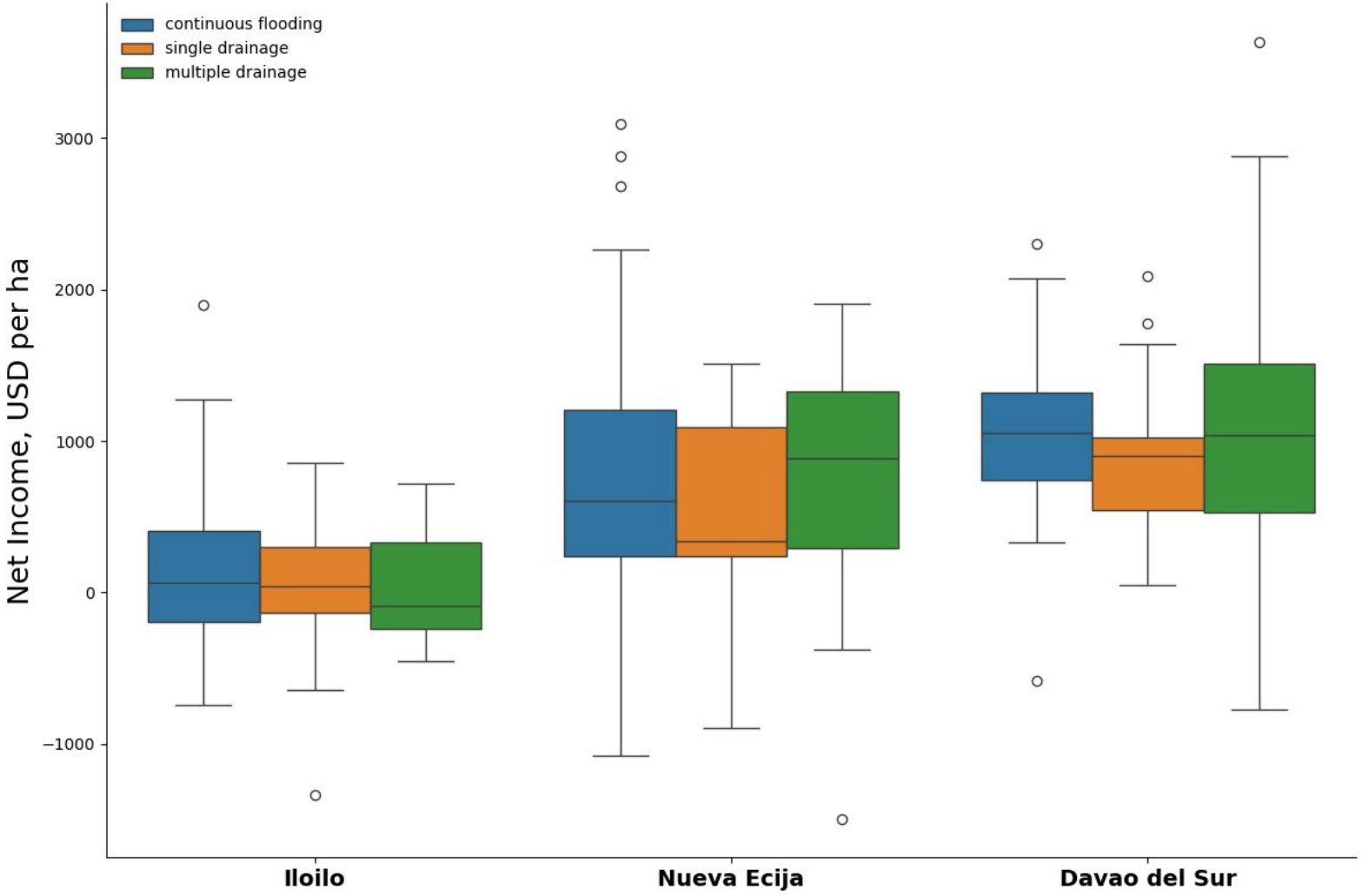




What incentives needed for adopting/shifting to a CSA practice?



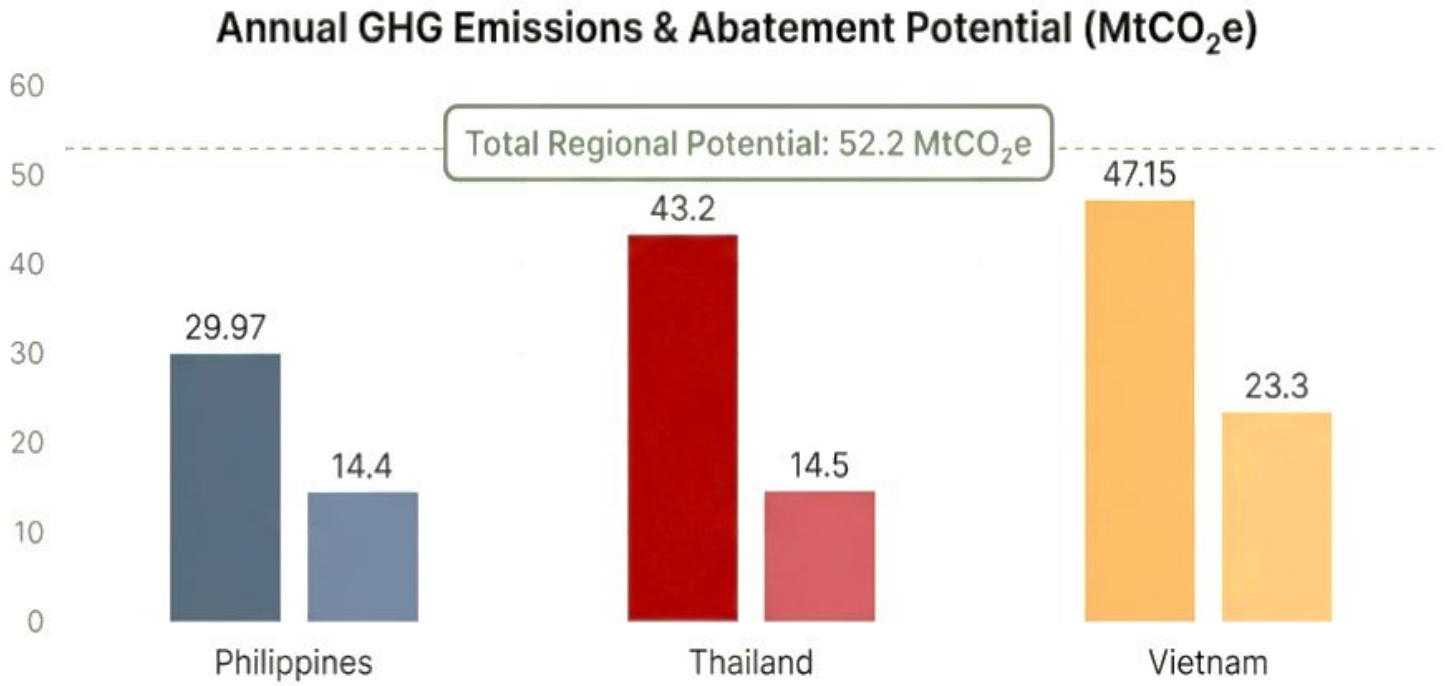
Net income by irrigation regimes, Philippines



Differences are not statistically significant.

Source: AMR surveys 2024-2025

AWD and straw removal has important technical mitigation potential – but it would not be easy to realize fully



AWD potential

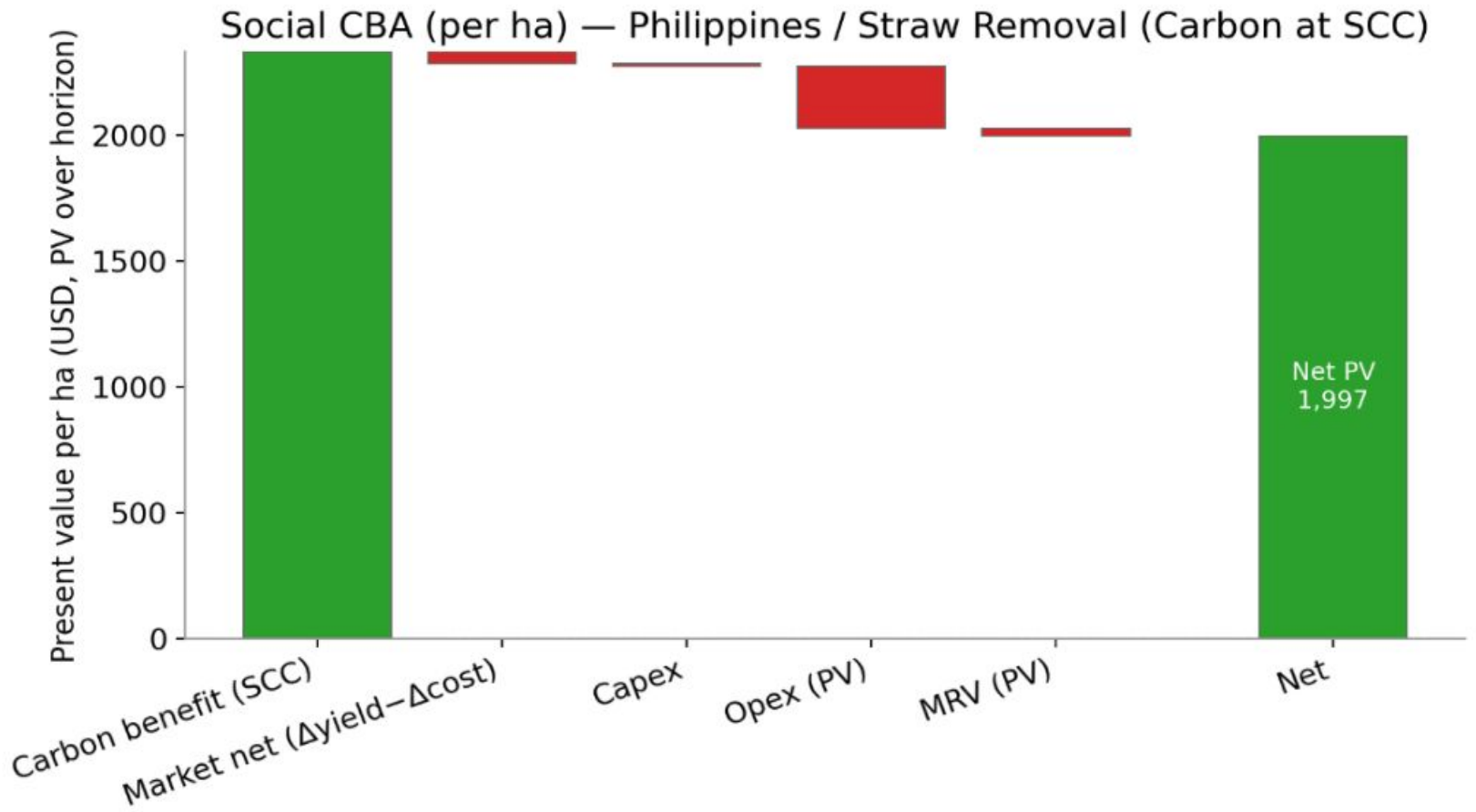
- Much of the potential succesfully realized in Thailand and Viet Nam, Philippines making rapid progress
- Irrigation infrastructure investments required.

Straw Managament Potential:

- On-field reduction, does not mean NDC level reduction
- Requires massive investments in Infrastructure and off-field uses
- Soil carbon effects not fully clear

Sustainable shift to low-emission rice requires incentives to farmers

Social cost-benefit analysis (10-year horizon)



Source: Mirzabaev et al (2025)

Key Takeaways

- Climate-Smart Agriculture (CSA) practices show significant potential to improve farm profitability while strengthening environmental sustainability and rice production.

- Filipino farmers demonstrate willingness to adopt CSA technologies, suggesting that broader uptake is achievable with the right support mechanisms and incentives in place.

- Successful scaling of CSA depends on focused capacity-building efforts, program designs tailored to farmers' actual conditions, and leveraging carbon market opportunities to provide additional incentives.

For the complete results of the surveys

ACCELERATING METHANE REDUCTIONS IN RICE PRODUCTION SYSTEMS THROUGH MARKET-BASED MECHANISMS

Results of Farmer Surveys and Choice Experiments in Thailand

ACCELERATING METHANE REDUCTIONS IN RICE PRODUCTION SYSTEMS THROUGH MARKET-BASED MECHANISMS

Results of Farmer Surveys and Choice Experiments in Vietnam

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Results of Farmer Surveys and Choice Experiments in the Philippines

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