With funding from the:

Federal Ministry of Research, Technology and Space

OrganoRice

Socio-economic opportunities and challenges

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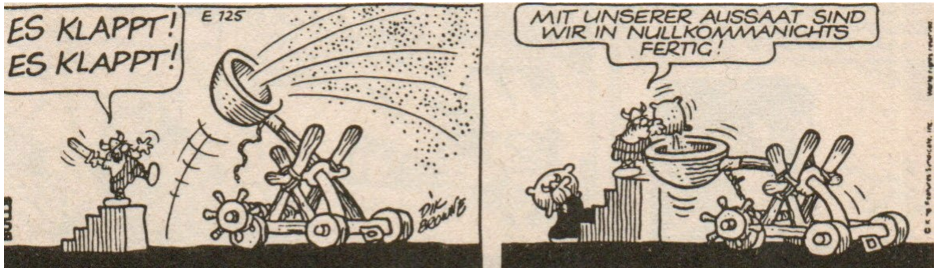
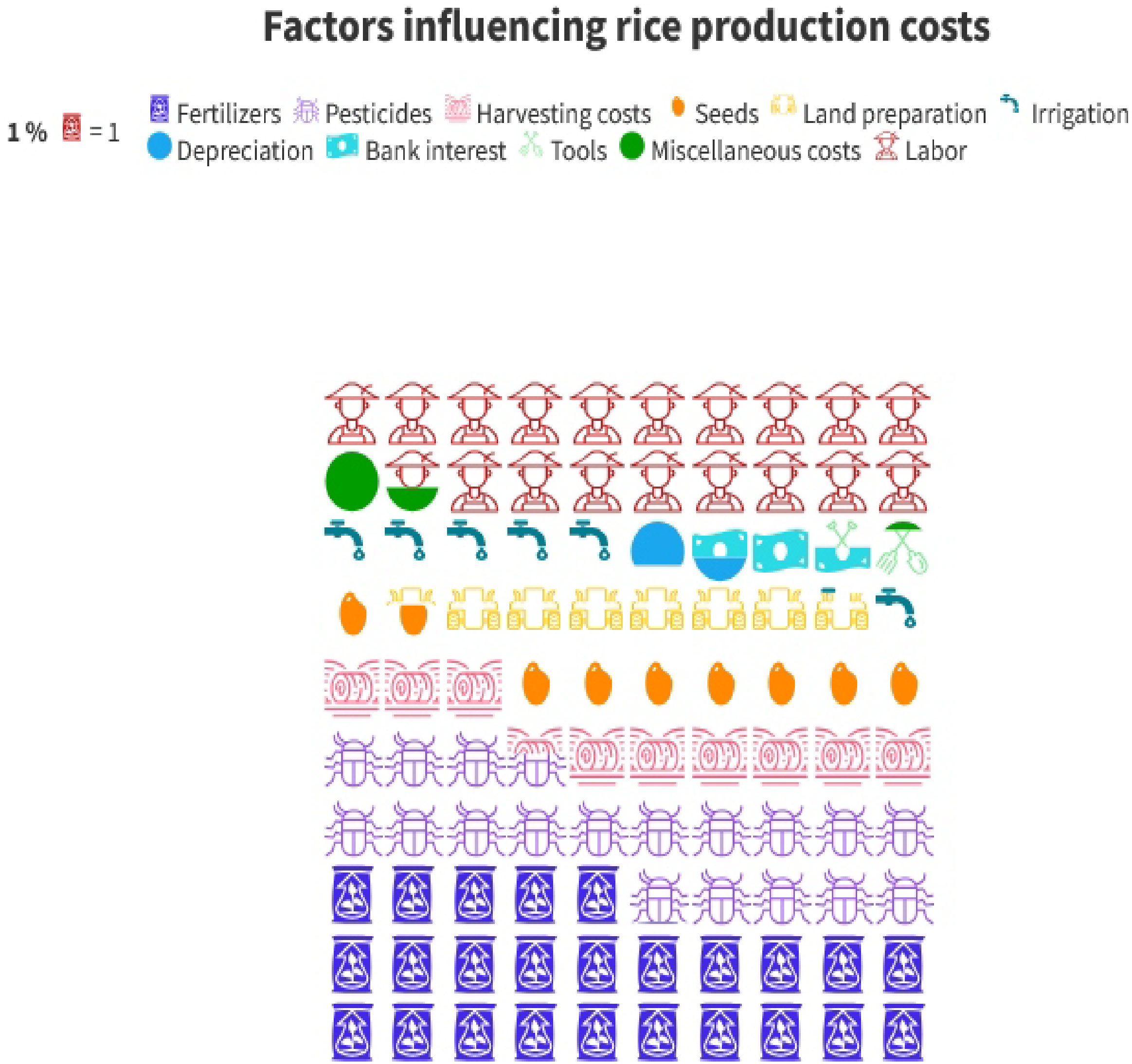
Farm Economics - Basics

Farms are private businesses, they invest in equipment, buy inputs, work to produce outputs and sell them. All these steps change when transitioning to organic rice:

- Few farmers reported buying new equipment, e.g. for better field levelling.
- OR farmers have to buy certified organic inputs instead of synthetic ones.
- The workload distribution over the seasons is changing, but not for harvesting, land preparation, seeding and irrigation.
- Selling output to a premium market is an opportunity, but can also be a challenge



Prehistoric seeding innovation



Fertiliser > Pesticides ≈ Labour > Harvesting > Seeds > Land Preparation > Irrigation > Tools, Bank Interest, Other

Conventional Rice,Data from An Giang province. Source: An Giang Department of Finance, 2021

Direct Income Benefits - Savings

Fertiliser

Fertiliser tends to be the most expensive input in MKD rice agriculture. In OR, it is completely phased out and replaced with organic fertiliser, providing the biggest single saving.

However, we found no domestic production of certified organic fertiliser in the MKD. As a result, farmers and their suppliers (often cooperatives) had to import foreign certified fertiliser at comparably high cost. In the case of imports from Italy, the climate balance is bad due to both the energy intensive production process in Italy, and the long shipping route.

Conclusion: Domestic provisioning of certified fertiliser is urgently needed and should receive government support

Organic fertiliser is produced in Vietnam, but is not certified

Improved levelling saves inputs and transplanting to fill the gaps

Direct Income Benefits - Savings

Pesticides

Transitioning leads to savings on pesticides in two ways:

- OR tends to require less input of, in particular, disease combatting and pest regulating inputs (organic fields tend to suffer from less pest infestations).
- Herbicides and molluscicides were usually reduced, and (partly) replaced by hand work (see labour impacts of OR)
- For rodenticides and fungicides no significant changes of demand were reported.

Synthetic pesticides were replaced by organic ones, probably certified as bought by the cooperatives. Traders assured us that they could provide certified organic pesticides when needed.

Interview with a trader in Vinh Long, March 2024. He moved here after working for a big pesticide producer to be closer to his home and family.

He sells pesticides. Organic is no market yet, but if demand was growing, he could deliver. Certification is a challenge.

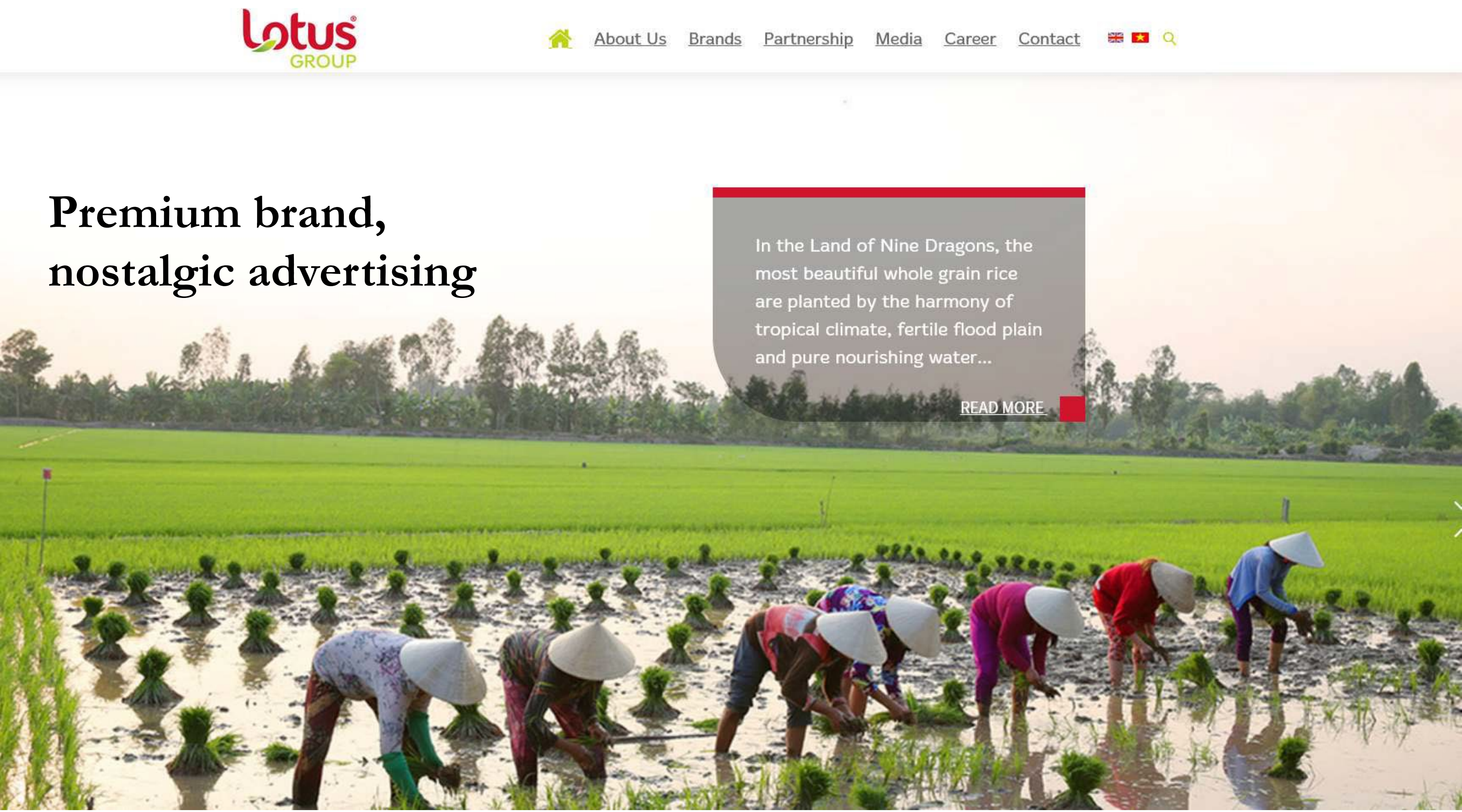
Direct Income Benefits - Revenues

Farm gate price

Increased revenue (income minus expenditure) is the most important factor prompting farmers to transition to organic rice farming, with health improvements a welcome second effect. The price premium is between 40–50% above CR; this figure from LotusRice was confirmed by the cooperatives in different provinces. In Tra Vinh, OR farmers reported a surplus price for organic rice of ~15,000,000 VND/ton*year above CR.

An additional benefit is that as the contracts tend to be between cooperative and trader, farmers are guaranteed that 100% ofc their harvest is bought at the premium price, with no further transaction cost incurred.

Premium brand, nostalgic advertising



Labour - Shifting Work Loads

How has the transition affected your work load an

- (selected) more work
- unchanged
- less work

Please specify workload for the following areas:

Name	Workload
Land Preparation	unchanged
Seeding	less
Fertilization	more
Weed managing	more
Pest & Disease management	less
Harvesting	unchanged

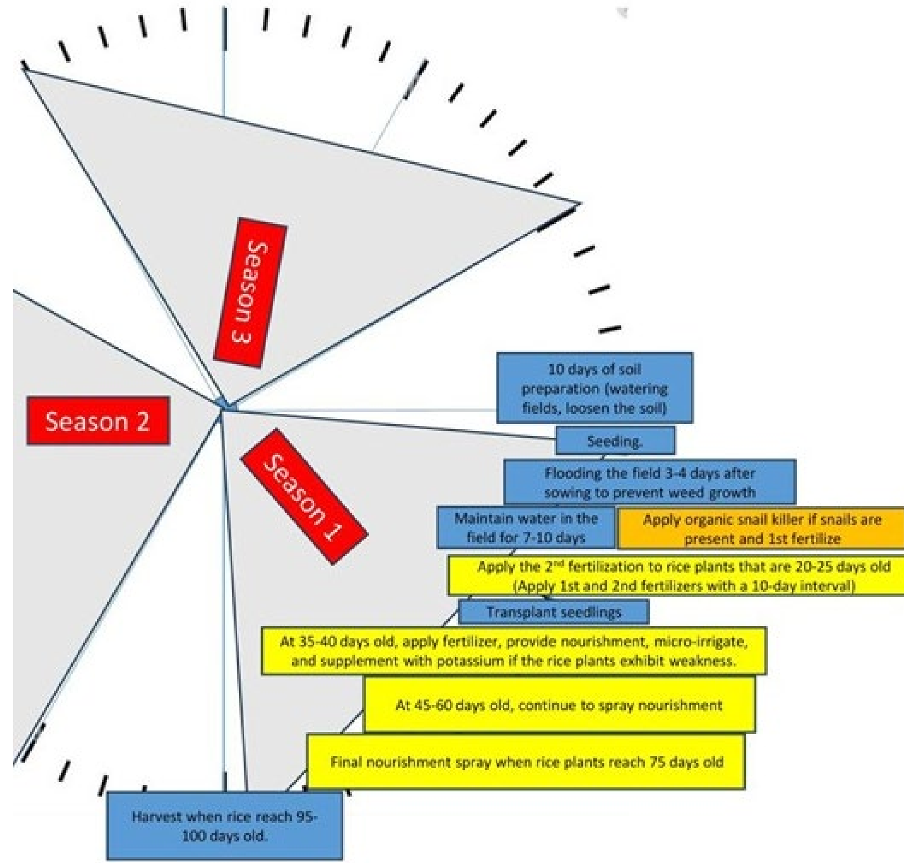
More work
hand-picking
GAS

Less seed used

Working fertiliser into the ground

Hand weeding

Less infestations



The Golden Apple Snail is a nightmare in all provinces, but…

Farmers agree that hand-picking GAS is no fun either. Ducks as biocontrol are considered insufficient.

Harvesting – No Big Changes

Working in a cooperative and under a contract with a trader saves work, if the trader buys the wet rice and dries it himself.

Seeds – Getting more from Less

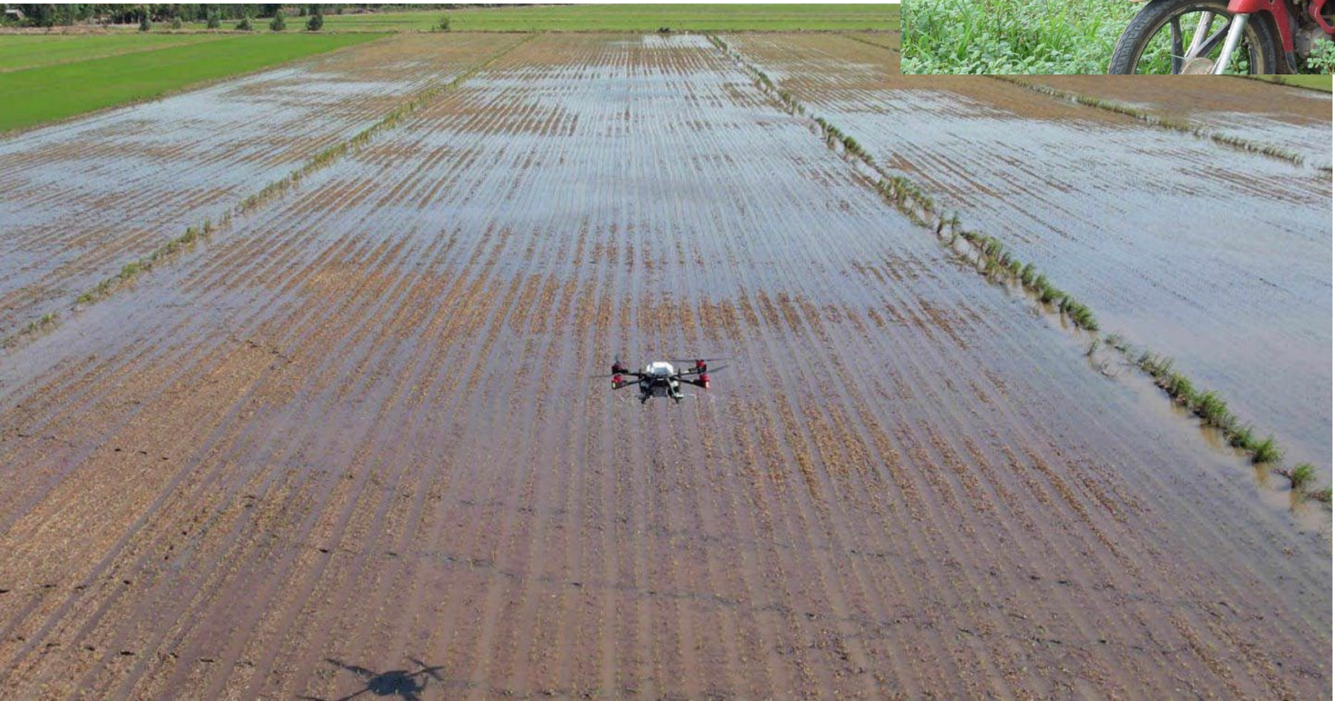
Variety

Although some farmers change varieties between seasons, many use SR25 or ST25 all year long. The plants are robust, the rice is tasty, the yield is stable, and the farm gate price paid by the trader is good.

Volume

The shift to organic farming implies reducing the amount of seed used, from 200-240 ka/ha to 120-160 kg/ha (different provinces give different reduction rates as condition for subsidies, for OR and SR alike). Farmers are sceptical, but more distance between the rice stands leads to more panicles per plant, and hence no reduction of yield.

Seeding with drones saves a lot of work. Cooperatives provide them for members, and rent them to customers.



Drones are easy to transport and rather easy to use. They can also contribute to seed use efficiency.

Indirect economic co-benefits

The most monetizable co-benefit is the **economic loss avoided** by OR. Framers report a significant decrease, often to zero, of insect infestations and plant diseases in OR. Previous losses, varying but up to 30% and more, are avoided, and so is one risk factor causing permanent concern.

Less measurable, and usually not accounted for in cost-benefit analyses of the transition to organic rice farming are the health benefits. In particular in countries without a comprehensive system of free health care and sick leave payments, OR provides economic co-benefits (also for cooperatives):

- less household spending on medical treatments,
- health-induced higher working capability,
- decreasing days of (usually uncompensated) sick leave.

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Flooding & Salinity Risks

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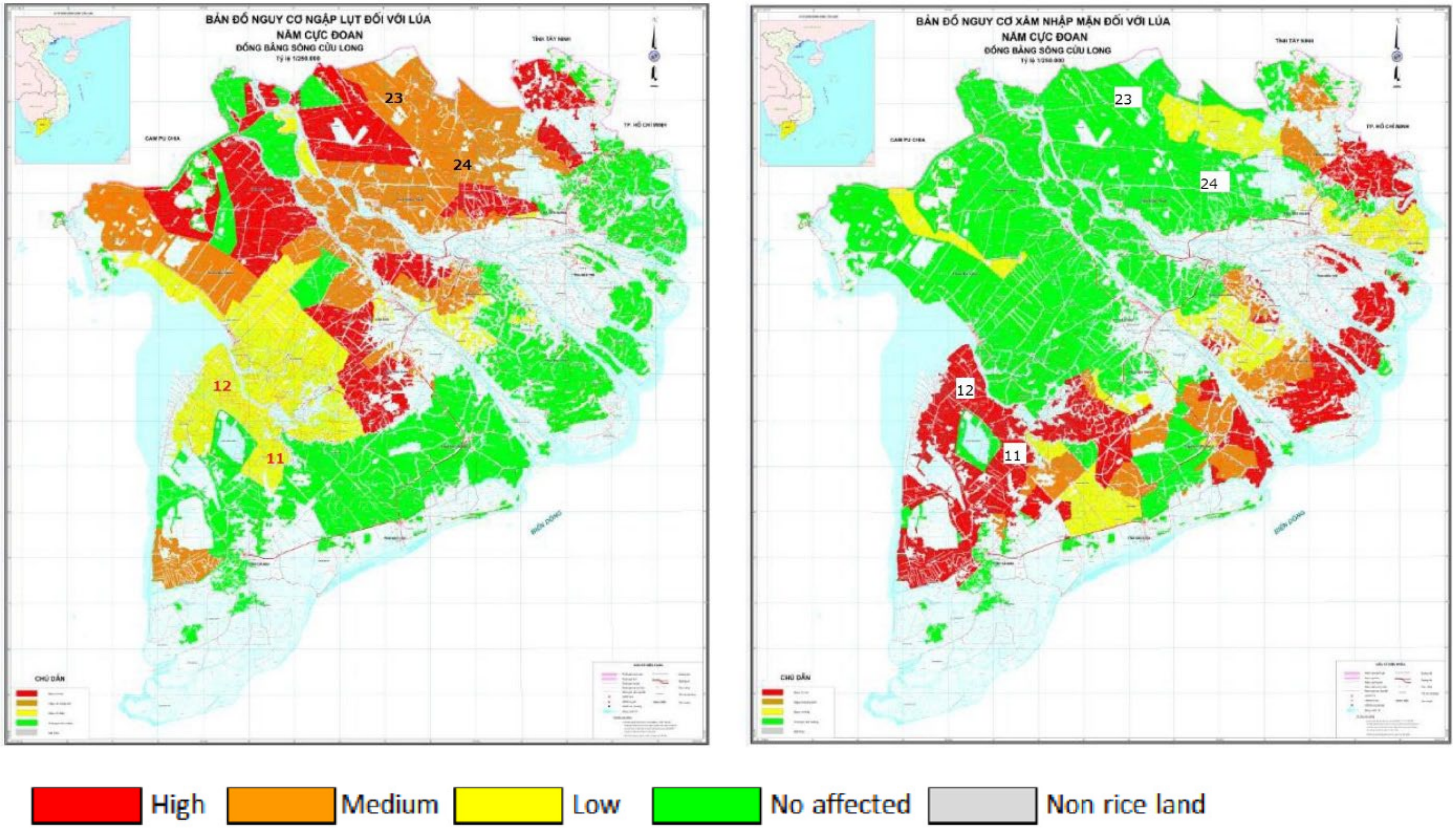

Looking not only at past experience, but at risk development under a Representative Concentration Pathway (RCP) 4.5 and RCP8.5 scenario, Dong Thap faces no, An Giang low and Vinh Long moderate drought and salinity intrusion risks (Trinh, Munro 2023).

Fig. A.1 Map of flooding (a) and salinity intrusion (b) risks for rice production in severe years of the VMD. Source: Yen, B. T., et al. 2019. Development of a participatory approach for mapping climate risks and adaptive interventions (CS-MAP) in Vietnam's Mekong River Delta. Climate Risk Management, 24: 59-70

Field and Water Pollution Cause Health Hazards

Indirect economic co-benefits

These benefits, providing market income or contributing to the household diet, were reported in our interviews, but not quantified.

- Poultry, sick or even dying in and around conventionally managed fields, are healthy and good food
- Molluscs, previously dead or indigestible, are now fit for consumption
- honey bees survive and produce good honey.

Finally, in some cooperatives, organic agriculture is applied out of necessity, to counteract collapsing soil fertility and reduce the significant losses of yield experienced (as in An Giang). When OR helps avoiding further deterioration and revitalising the soils to first stabilise and then increase harvests again, **the avoided damage is an economic benefit** (and the investment in it an insurance premium).

In a nutshell

- In total, the transition to organic agriculture is not a system modification, but a system transformation to rely on different regulation mechanisms other than anthropogenic control.
- Informational and material support is needed to bridge the gap between current practice and future sustainable rice agriculture.
- Farmers report 3-5 million VND/ha *season in additional income, but much of this can also be achieved in SR.
- The price of certified inputs is a reason for concern, for fertilisers, pesticides and seeds alike. Domestic certification according to international standards would be helpful.
- Information flow from authorities to farmers is weak, most information comes from the cooperatives. Extended extension worker capacity and hands-on work with farmers would be helpful.

We are at the end…

…of this presentation

Thank you for your attention

I am now looking foreward
to an interesting discussion

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