

JAMTANI Good practice note for climate-resilient agriculture

Note 1 Organic rice farming

Farmers affected by climate change and/or environmental degradation need to develop strategies to adapt to these changes. Thus, they take part in innovation networks with other farmers, farmer organisations and academics to merge different knowledge systems and to generate appropriate solutions. One such solution is organic rice farming as presented here.

Climate change matters for us, as it impacts agriculture negatively. The temperature is higher than 15 years ago. It becomes difficult to decide on the right time of land preparation, as the onset of the rainy season is unpredictable. There are more pests and diseases and also a higher resistance to pesticides. Lower yields, high chemical inputs and soil with low fertility and water holding capacity are common.

Story of change

"My wife Hera and I decided to plant rice organically on part of our farm three years ago. Our motivation for growing organic was the health of our children. We didn't want to feed them with food that has been produced with chemical pesticides. When I look around, I see that the environment is deteriorating day by day. We should go back to nature and give organic fertilizer to the soil as much as we can, stop the use of chemical pesticides and develop natural enemies. We have converted 100 bata (equals 0.14 hectare) to organic rice. We sell the organic produce directly to relatives and friends. We sell some of the organic rice in promotion bags of 1600 g. We produce several varieties of organic rice including the aromatic red and black rice. Red and black rice fetch higher prices as they contain less sugar and are good for people suffering from diabetes. In the first year, after converting to organic, we gave a special boost of compost of 10t/ha, but we experienced yield losses of more than 50%. In the second year, the yield reached 75% of the conventional yield. Finally, we have almost the same yield as before. We produce our own compost and apply it at a rate of 4 t/ha. We also experiment with varieties. In a course in Ramaya I learned how to cross-breed rice plants. Back home, I crossbred the varieties Ciherang and Rojolele. I expect to gain the good traits from each: the long panicle from Ciherang and the tillers, good taste and texture from Rojolele."



Pak Endi, JAMTANI member of Campenik group, rice farmer, breeder and trader from village Padaherang, Pangandaran, Java Barat.

Dissemination of practice

Indonesia is the third largest rice producer in the world, and farmers in Western and Central Java harvest 60% of the Indonesian rice production. Even though organic food is a growing trend in Indonesia, little rice is produced under organic systems. In fact, only 11% of JAMTANI members in Pangandaran/Cilacap produce rice by using non-chemical fertilizer and pesticides. The system of rice intensification (SRI) is practiced by 30% of the JAMTANI members in the region.

Benefits

Rice consumers: Red and black rice varieties have a lower glycaemic index (GI) with less glucose content but more fibre than white rice. They are high in vitamins, minerals, amino acids and antioxidants and rich in flavour.

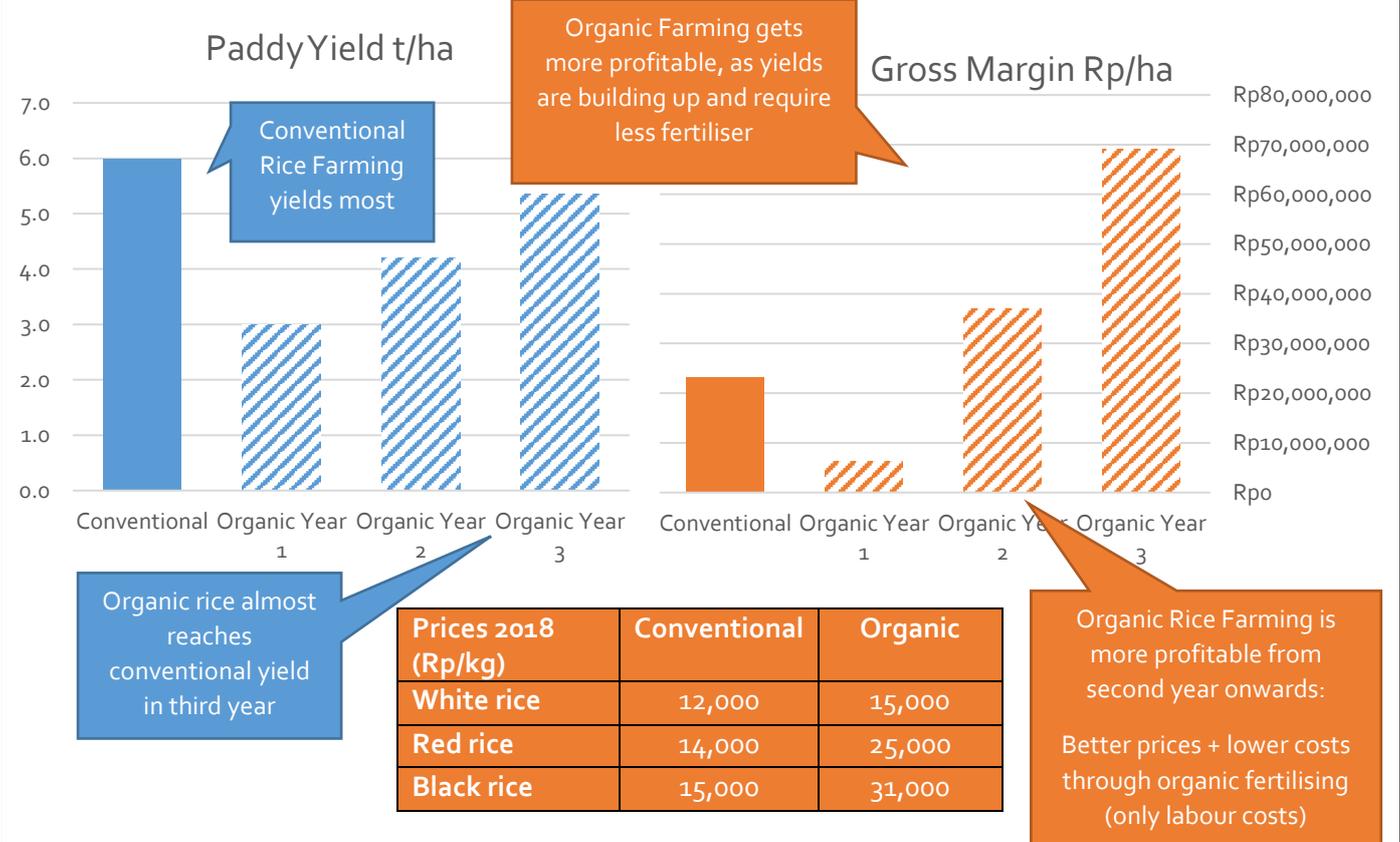
Rice Producers: Organic rice has a potential to yield premium prices for farmers. An estimated one third of urban dwellers are starting to opt for organic food, as it is free from residues from synthetic pesticides.

Environment: The use of synthetic pesticides is on the rise globally and in Indonesia. More than 200 various pests and diseases are found in rice systems, of which Brown Plant Hoppers, stem borers and rats are widespread. In organic rice production, agrobiodiversity including fish and aquatic animals are reintegrated into paddy land.

Challenges

Organic Rice Farming is only a remunerative option if yield losses are absorbed by higher prices. Thus, marketing is essential to raise consumer awareness on the benefits of organic rice and hence fetch higher market prices. Further, a functioning certification mechanism is necessary to give consumers certainty about the organic quality of the product.

Economics of Organic Rice Farming + System of Rice Intensification (SRI)



JAMTANI recommendation:

Enrich the local compost by the use of liquid azolla vermi-hormone to...

... Fortify your soil...

... Increase plant growth and yields...

... Suppress diseases...

Liquid azolla recipe:

1. Fill a clay pot with cattle manure and earthworms and azolla.
2. Add treated rice waste water through coco peat filter system.
3. Harvest liquid worm leachate every day through the outlet (tap).
4. Dilute it with 10 parts of water (vermi-hormone).
5. Fill a 14 liter spray tank with 3.5 l of vermi-hormone and add it three times during vegetative and two times during generative growth period.



More information:

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Azolla is an aquatic fern and rich in nitrogen (4-5%), phosphorous (0.5-0.9%) and potassium (2-4.5%).



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