

インドネシアにおける SRI 導入の課題  
Assessing the Adoption Problems of System of Rice Intensification (SRI)  
~Case Study in Pagelaran, Malang, Indonesia~

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### 1. Introduction

Rice is Indonesian staple food. Indonesian population has grown near two hundred million people, rank number four in the world. Country has to supply more food with the growing population. To increase rice productivity, farmers need to be introduced a new paddy planting method which is called by SRI (System of Rice Intensification). It is a method that not using chemical fertilizer which will give a positive effect to soil continuously. Being farmer-centered, SRI is always being modified, improved, and extended. It was empirically developed and continually improving the scientific understanding of SRI concepts. SRI was introduced first to Indonesia in October 1997 by Professor Norman Uphoff presentation. In 1999, SRI method had been tested in Research Institute for rice (RIR), Sukamandi, West Java. It had been proved that increasing rice productivity. According to Gani et al (2002), on average, the rice yield obtained from plots practicing Integrated Crop and Resource Management (modified SRI) principles in the dry season of 1999 was 6.2 ton/ha, or 51% higher than on plots with farmers' standard management practices (4.1 ton/ha).

Research objectives of this study are to identify the affecting factors of unsuccessful SRI farmers and to suggest strategies for overcoming SRI adoption problems.

### 2. Study area and Methodology

Field survey with semi-structured questionnaire, key informant interview, focus group discussion are conducted. This study uses qualitative data analysis and information.

### 3. Results and Discussion

Farmers are from two villages called by Clumprit and Karangsono. SRI farmers plant 9-12 days nursery. They do not control water strictly as SRI recommendation. They are unwilling to do intermittent irrigation because it means weeds will grow faster in every 10-14 days. Most of farmers plant 2-3 seedlings per hill because they afraid what if the seed dead if they just put one seed. They use 25-28 cm for plant spacing. As they adopt SRI method, they try to use organic fertilizer as much as possible. The ratio of organic and chemical fertilizer is 3:2. They are still unwilling to use 100% organic fertilizer because the market for organic grain is just a few. They will get difficulties in selling organic grain unless they already secured a market. Most of conventional method farmers unwilling to adopt SRI method because they find it inconvenient to adopt the practices such as controlling water, paying attention to plant spacing, and putting only one seedling per hill. Most of conventional paddy farmers are using chemical fertilizer.

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Keywords: SRI, rice, adoption, paddy planting

Table 1 SRI practices adoption

	Variable	Adoption	SRI recommendation	Conventional method	Farmers adoption
a.	Plant age	○	7-14 days	more than 20 days	9-12 days
b.	Plant single seedling per hill	△	1 seedling	Countless	2-3 seedlings
c.	Space plants farther apart	△	30 x 30 cm	20 x 20 cm	25-28 cm
d.	Maintain moist soil without flooding (intermittent irrigation)	X	Intermittent irrigation	Flooded	<i>Macak-macak</i> (the term in Indonesian to irrigate the plot but not to dry)
e.	Control weeds	△	Frequent	2 times per season	4 times per season
f.	Enhance soil organic	△	Using only organic fertilizer	Using only chemical fertilizer	3:2 (organic to chemical fertilizer ratio)

○ : Full adoption

△ : Partial adoption

X : Disadoption

Most of farmers have other job besides agriculture. But the household main income is still from planting paddy. Land ownership rate in the area is not too high. Only 83% farmers have their own plot. The rest of them are just labors for landlord. It is considered as one of the hampered factors on adopting SRI method. They do not have the right to decide which method will be used. Even if farmers have their own plot, the average plot ownership is just about 0.4 ha per family. The biggest affecting factor is farmers willingness not to try the SRI method because the risk. They think that the plot is their life to get money, make living and send children to school. Almost all of farmers plant paddy in their plot. Only a few of them plant other crop beside paddy for self-consumption such as chili pepper, cabbage, eggplant.

#### 4. Conclusion

In fact, most of farmers partially adopt five out of six SRI practices. They do transplant young seedlings but water is uncontrollable. Plot ownership and farmers' willingness are the most affecting factors of SRI adoption problems. Farmers should be given a proper training to raise their understanding in paddy planting.

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