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Prosperity and Poverty in a Globalized World: Challenges for Agricultural Research

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ON CONSERVING THE INDIGENOUS-ORGANIC RICE FARMING SYSTEM OF COASTAL KERALA, INDIA



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1. Introduction

Conservation of genetic and ecosystem diversity is particularly important for resource-poor farmers in the economically marginal areas of the developing world. This study examines the *in situ* conservation alternatives for the indigenous-organic rice farming system of Coastal Kerala (India), known as Pokkali system. Pokkali cultivation is a world-acclaimed farming system which effectively complements the natural system, utilizing indigenous knowledge and ensuring efficient utilization of local resources. The proximity to sea and subsequent periodical seawater inundation ensure the uniqueness of the rice varieties cultivated, and contribute to the high degree of specialization in the cultural practices followed. The rice cultivation compliments the prawn culture which follows it, making a unique agro-ecological continuum which is traditionally organic.

2. Sustaining Pokkali System: Challenges

The unsustainable monoculture of prawn is catching up in the Pokkali lands and is observed to have gained momentum in the last decade. Though this provides higher net returns over the traditional rice-prawn culture in the short run, it is found to be unsustainable in the long run, both in the ecological and the social context. Based on the data collected from 50 rice farming households, the economics of Pokkali farming was calculated. The cost-benefit analysis indicated that short-run economic incentives form the primary reason for this shift to monoculture of prawn (Table 1).

Table 1. Economics of organic rice and subsequent prawn farming in Pokkali lands

	Organic rice farming	Prawn farming
Total cost (US\$/ha)	369	533
Total return (US\$/ha)	236	904
Benefit-cost ratio	0.64	1.70

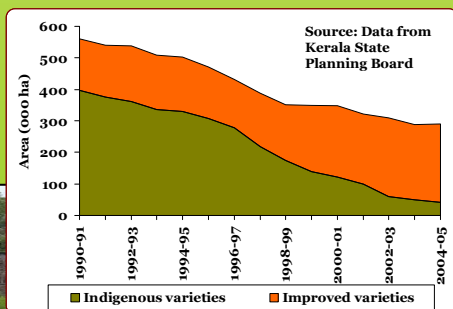
Source: Farm survey by the authors (2001)

3. State Government Regulations to Conserve Pokkali System

1. Kerala Land Utilization Order: All individual applications for conversion of paddy lands for other uses have been dealt with at the Government level.
2. 'Punja' Act: Low-lying brackish water wetlands are to be used for prawn culture only for a period of six months. The remaining six months are to be compulsorily used for paddy cultivation.

Although the Pokkali Land Development Agency is responsible for the monitoring of crop rotation, it is neither authorized nor does it have the machinery to take appropriate penal actions against offenders.

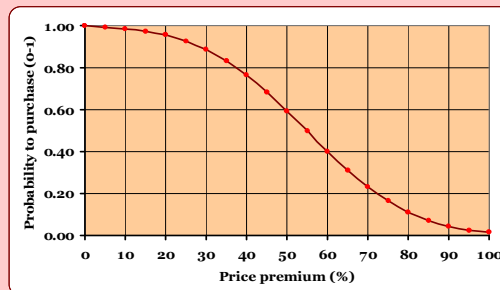
Figure 1. Area under indigenous and improved rice varieties in Kerala



4. Markets for Pokkali Rice

Developing a market for organic rice, where a higher price is ensured, is expected to make the Pokkali rice farming profitable in the long run. This will also ensure a reduction in the incidence of unsustainable fallow-prawn and prawn-prawn crop rotations. The Pokkali Land Development Agency and the Kerala Agricultural University are jointly applying for Geographical Indications Registration for Pokkali rice, which will ensure higher market access. To further examine the scope of developing domestic markets for organic rice, a survey was carried out among 120 consumer households of Bangalore city of South India. Due to the 'thin' organic markets, consumer's willingness to purchase organic rice was elicited using contingent valuation method. Single bounded dichotomous choice question was posed against the elicited bids ranging from 1-100% above the current market price. It was observed that half of the households are willing to pay a price premium of 60% for the organic attribute (Figure 2)

Figure 2. Price premium consumer households are willing to pay for organic rice



Source: Consumer survey by the authors (2006)

5. Conclusion

Despite the state government's direct intervention making the monoculture of prawn illegal, more area is being gradually brought under fallow-prawn and prawn-prawn systems, owing largely to the multitude of constraints associated with the labour-intensive rice cultivation in Pokkali lands. This poses a challenge to the *in situ* conservation of salinity-resistant indigenous rice varieties and cultivation practices. The market mechanism, involving a price premium for the branded Pokkali rice, can be seen as an efficient alternative for conservation, complementing the government regulations. State inventions favoring certification and creation of markets for branded Pokkali rice will be having a high impact in ensuring the conservation of this unique farming system.

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