

The Agroecosystem of Thai Rice: a Review

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ABSTRACT

*The production, distribution and consumption of Thai rice is characterized by diversity at many levels, from rice farmers with different access to resource endowment and modern technology, the world of rice eaters who demand different types of rice, to a vast and genetically diverse rice gene pool. This paper examines the complexity that has contributed to shaping the unique development of Thai rice, which should have significant implications for its future. Continuing growth of production and export since the 1960s has given the lie to an erroneous yet common belief that rice farming in Thailand is non-viable as an economic enterprise and that rice farmers are increasingly impoverished. Irrigation and modern rice technology combined with larger farm size, which drove production and export growth, have also enabled many to make a decent living from rice farming. The payout from the government's rice pledging scheme, which went mostly to rich farmers instead of the poor farmers it professed to help, is highlighted to illustrate the need for agricultural policies to be more precisely targeted. Thai rice, exported to some 160 countries and territories, now feeds more people globally than within Thailand. Far from being a simple outflow of surplus, the international trade of Thai rice has contributed to shaping its production in major ways, as exemplified by the case of parboiled rice, which is almost unknown in Thailand, yet accounts for one third of the country's rice export. With the aid of machinery powered by fossil energy, modern rice technology and chemical inputs, a farm laborer today produces 12 times as much rice as when rice farming relied solely on human and animal power. In addition to labor cost savings, mechanization has also increased the efficiency of rice production with timely completion of crop management operations, increased the value of the harvest with improved grain quality and brought economies of scale by increasing the farm size individual farmers can manage. In common with other rice growing countries, Thailand has benefited from the genetic improvement embodied in modern, high-yielding rice varieties, but only when deployed together with traits from the Thai rice germplasm to satisfy stringent local requirements. The primary gene pool of Thai rice includes not only cultivated rice (*Oryza sativa*), but also common wild rice (*O. rufipogon*). Emergence of weedy rice (*O. sativa* f. *spontanea*), a hybrid progeny of the cultivated and wild species, as a serious weed in rice fields serves as a reminder that introduction of novel technology and genes, such as*