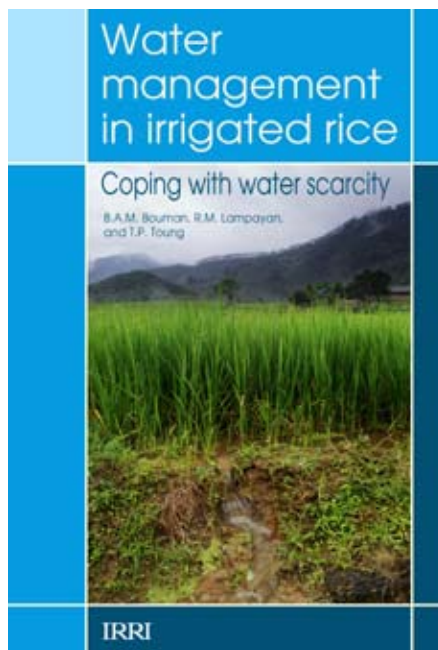


**Water management in irrigated rice: coping with water scarcity** (by B.A.M. Bouman, R.M. Lampayan, and T.P. Tuong; 54 pages; developed countries US\$6, developing countries \$2; Philippines 100 pesos).

Worldwide, about 79 million ha of irrigated lowlands provide 75% of the total rice production. Lowland rice is traditionally grown in bunded fields that are continuously flooded from crop establishment to close to harvest. It is estimated that irrigated lowland rice receives some 34–43% of the total world’s irrigation water, or 24–30% of the total world’s freshwater withdrawals. With increasing water scarcity, the sustainability, food production, and ecosystem services of rice fields are threatened. Therefore, there is a need to develop and disseminate water management practices that can help farmers to cope with water scarcity in irrigated environments.

This book provides an overview of technical response options to water scarcity. It focuses on what



individual farmers can do at the field level, with a brief discussion on response options at the irrigation system level. The manual is intended as a support document for training on water management in rice production. It combines scientific background information—including

many literature references for further reading—with practical suggestions for implementation.

Introductory chapters analyze the water use and water balance of rice fields, and water movement in the plant-soil system, and discuss the concepts of water scarcity and water savings. Consequences of water scarcity for sustainability, environmental impacts, and ecosystem services of irrigated rice fields are discussed later. An appendix introduces two simple instruments to characterize the water status of rice fields that can help farmers in applying water-saving technologies.

The target audience includes people involved in agricultural extension or training who have an advanced education in agriculture or water management, and who wish to introduce sound water management practices to rice farmers. For example, the book offers useful information to staff of agricultural colleges and universities, scientists, irrigation operators, and extension officers. 🍴

## RECIPE

### Sticky rice, prawn, and water chestnut dumplings



Source: *Gourmet Traveller*, modified by Melissa Fitzgerald, head of IRRI’s Grain Quality, Nutrition, and Postharvest Center.

Makes about 20 dumplings

#### Ingredients

250 g white glutinous rice, soaked in cold water for 4 hours  
 300 g medium green prawns, peeled and cleaned  
 200 g pork mince  
 220 g can water chestnuts, drained  
 3 cm piece ginger, peeled and chopped  
 ½ cup coriander (cilantro) leaves  
 4 spring onions, chopped  
 2 teaspoons kecap manis (a sweetened Indonesian soy sauce)  
 1 pinch each of ground cloves and cinnamon  
 1 tablespoon rice flour combined with 1½ tablespoons water  
 1 small egg, lightly beaten  
 Sweet chili sauce or plum sauce to serve

#### Preparation

Drain rice, spread out on absorbent paper, and let stand for 1 hour or until dry. Meanwhile, coarsely chop prawns with a knife or in a food processor, then transfer them to a large bowl, add pork, and combine well. Using a mortar and pestle or food processor, make a coarse paste from the water chestnuts, ginger, coriander, and green onions. Transfer this paste to the prawn and pork mixture, add chilies, kecap manis, spices, and 1 teaspoon salt, and stir until well combined. Next, add rice flour mixture and egg to bind. Cover and refrigerate for 1 hour.

After refrigeration, use damp hands to roll prawn and pork mixture into 20 balls of 2 cm diameter, then roll each ball in glutinous rice to coat. Transfer dumplings to large baking paper-lined bamboo steamers and steam over boiling water for 15 minutes or until rice is tender, then serve immediately with sweet chili sauce.