



Rice post-harvest system: an efficient approach

Total rice post-harvest losses for Asia are estimated to have been about 14 percent in 1997, which represented about 77 million tonnes and US\$7.7 billion. Most of these losses occurred as a result of inadequate storage and drying operations.

Efficient storage is critical for rice, and between 4 and 6 percent of total rice crops are lost during storage. FAO recommends use of the small metal silo as a feasible and valuable option for reducing small- and medium-scale rice farmers' food losses. This technology is already improving the socio-economic conditions of agricultural communities.

The rice post-harvest system focuses on both preventing food losses and improving the efficiency of the technologies that are used to add value to rice and its by-products. The aim is to generate more employment and income and, consequently, to improve food security, which is one of FAO's most important mandates.

Rice farmers are willing to invest in post-harvest technologies that are affordable and add quality and commercial value to rice products.



THE SITUATION

In developing countries, post-harvest losses destroy about 15 to 16 percent of the rice crop. This figure is even greater (as much as 40 to 50 percent) in countries where there are challenging natural events and climatic conditions, such as regular heavy monsoons. The rice post-harvest system concept is an efficient, modern approach that focuses on preventing post-harvest losses and ensuring the quality and safety of the rice crop during its processing and storage. The system also includes procedures that add value to both primary and secondary rice products, as well as by-products.

Some stages in the rice post-harvest system are more critical than others, particularly in tropical and subtropical areas where rice is more vulnerable to damage and more likely to suffer qualitative and quantitative losses. Among these critical stages, drying and storage are especially important. Some technological advances have been made in the area of rice storage techniques and equipment, and FAO is playing an important role by contributing to the transfer of new post-harvest technologies for storage, which include small metal silos for storing grains at the household level (see photos). The metal silo for household use varies in capacity from 100 to 4 000 kg. For a family of five people, a silo of 1 tonne capacity can maintain the quality and safety of rice for up to a year, thereby contributing significantly to household food security. A silo of this size costs about US\$55 and lasts for between 15 and 20 years.

Regarding the other critical post-harvest operation for rice – drying – efforts are being made to improve small rice driers. For example, small portable electric fan driers have been developed by IRRI, and are becoming an important ally to small- and medium-scale rice farmers in terms of increasing their food security and ensuring the safety of their rice crops. Rice farmers are beginning to understand and accept the need to invest in post-harvest technologies because not only are these technologies affordable, but they also offer the potential to increase profits by adding quality and commercial value to the final products.

FROM THE FIELD TO THE CONSUMER

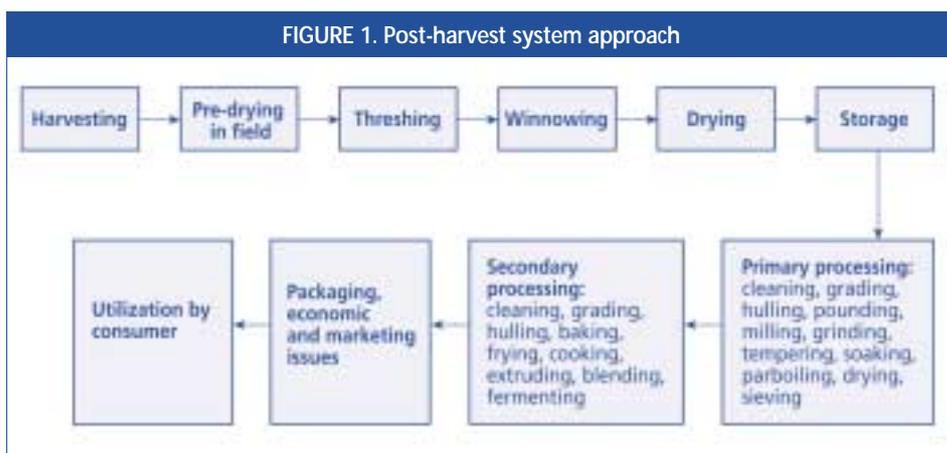
The rice post-harvest system provides a full and comprehensive approach that can be applied to paddy and its derivatives (i.e. husks, bran, and polished rice grain,

both broken and whole). Its main concerns should be to: a) improve the capacity in implementing the main rice post-harvest operations so that they





become more efficient and ensure a valuable final primary product; b) develop and use processing technology that adds value to secondary and by-products, as well as to primary ones; c) consolidate development of the rice post-harvest agro-industry, not only technically but also commercially, economically, politically, socially and environmentally (see Figure).



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GETTING THE MOST FROM RICE

The rice post-harvest system also includes ways of processing and using rice by-products at the domestic level. For example, rice husks can be used first as fuel and then, after they have been burned, as fertilizer. Households can also produce rice pellets for feeding their own fish (see photo) or selling to aquaculturists. These pellets are made out of flour, which is ground from broken grains and mixed with rice bran. Post-harvest technology plays an important role in such small-scale agro-industries, which generate extra income and improve the well-being and food security of households and communities.



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FAO/Mejia/Friedrich



CONTACT

DANILO J. MEJÍA L. PH.D.
Agricultural Industries Officer
Agricultural and Food Engineering Technologies Service (AGST)
Room B619bis Tel.: (+39) 57055027 Fax: (+39) 57054960
E-mail: danilo.mejia@fao.org

Food and Agriculture Organization
of the United Nations
Viale delle Terme di Caracalla
Rome 00100
Italy