Tropentag, September 20-22, 2023, hybrid conference

"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Emerging pathways in changing rice-based production systems in Luzon, Philippines

Richelyn Rose Clavero[1], Manuel José C. Regalado[2], Mathias Becker[1], Shyam Pariyar[1]

[1] *University of Bonn, Inst. Crop Sci. and Res. Conserv. (INRES) - Plant Nutrition, Germany*
[2] *Philippine Rice Research Inst., Rice Engineering & Mechanization Div., Philippines*

Abstract

External pressures and internal drivers are shaping processes of change in rice-based production systems. We studied to what extent and in which ways rice-based production systems are impacted by the recently implemented Rice Trade Liberalisation Law (RTLL) in the Philippines, a policy aimed at lowering rice prices for urban consumers.

Through a diachronic analysis (comparing the years 2018 and 2022), we assessed changes in production practices and performance attributes in four main rice producing provinces in Luzon, representing either rainfed (Pangasinan and Bulacan) or irrigated (Aurora and Nueva Ecija) systems, and in both the dry (DS) and the wet seasons (WS). Structured surveys administered to 600 farmers complemented focus group discussions.

In 2022, the Philippines has increased the amount of cheap imported rice by 48 % (2,975,310 metric tons in 2021 vs. 2,006,350 metric tons in 2018), thereby halving the price of paddy rice for farmers and increasing uncertainties on the outcome of farmers' investments. Three years after implementing the RTLL, we observed major changes in land use and in agronomic practices. Across sites, the paddy rice area decreased by 2 – 20 %, with largest changes in Nueva Ecija in both seasons. Crop establishment of dry season rice shifted from transplanting to direct seeding in 81 % of all observed cases in Bulacan, and in 13–20 % in Nueva Ecija and Pangasinan. In Aurora and Pangasinan, 69 and 52 % of farmers respectively, also shifted to direct seeding their wet-season rice. Adoption of these labor-saving practices entailed a significant increase in the use of herbicides. Due to recently massively increased costs, N fertiliser application rates decreased in the DS in Aurora and in Nueva Ecija as well as in the WS in Bulacan and Pangasinan, significantly and negatively affecting grain yields at these sites and seasons. Another emerging trend associated with the RTLL concerns a shift from DS rice to high-value upland crops, especially in rainfed environments and on light-textured soils.

The combined effects of these RTLL-related changes point towards a future trend of uncertainties in rice supply with decreasing domestic production and food sovereignty and an increased import dependency for rice in the Philippines.

Keywords: Cropping system shift, diachronic analysis, food security, *Oryza sativa*, rice tariffication

Contact Address: Richelyn Rose Clavero, University of Bonn, Inst. Crop Sci. and Res. Conserv. (INRES) - Plant Nutrition, 53115 Bonn, Germany, e-mail: richelyn.clavero@yahoo.com