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## Climate Resilient Farming for Enhancing Farmers Capacity, Soil Health and Rice Productivity in Adapting to Climate Change on Coastline

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### Abstract

Climate change is real and hits Indonesia severely and threatens the food security. The drought and flooding occur more frequently and erratic. The change of rainfall intensity, rainfall pattern and the shifting of planting season influence the crop growth or causes yield losses and effects the livelihood of smallholder farmers along coastline of southern Java. Climate resilient farming (CRF) as demoplots has been conducted in two planting season (PS) for improving the farmer's adaptive capacity and to become researcher, restoring the soil health or soil quality and increasing the rice productivity in Ciganjeng and Rawaapu along the coastline of southern Java. Two Demoplots were established using the participatory and interdisciplinary research approach by involving 14 of selected famers for each location. Demoplot in Ciganjeng was aimed to investigate organic manure and to select the adapted rice varieties for flooding. While the Demoplot in Rawaapu was aimed and focused to select rice variety which is adaptive to flooding and high salinity. The observed parameters were collected by the farmers. Results revealed that the application of organic manure combined with green manure was able to improve the soil health or soil quality significantly as indicated by the increasing of soil organic carbon, nitrogen and rice grain yield. The better and adaptive variety in Ciganjeng were Mendawak (PS<sup>-1</sup> and PS<sup>-2</sup>) and Ciherang (PS<sup>-1</sup>). While in Rawaapu were Mendawak (PS<sup>-1</sup>), Muncul and Inpari 41 (PS<sup>-2</sup>). The gain factor indicator for famer's capacity improvement were increased moderately. This results confirms that CRF can be promoted to improve the adaptive capacity and enhance the sustainability of the rice productivity in changing climate.

**Keywords:** Climate change, CRF , resilient farming, rice, smallholder farmer, soil health