

Enhancing Climate Resilient Agriculture using Decision Support Tools in Vegetable Production in Leyte, Philippines (e-CRISP)

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Abstract

With the geographical location of the Philippines, agriculture in the country, especially in Leyte Island, is extremely vulnerable to climate change. To address the negative impacts of climate change, one of the feasible approaches is the adoption of climate-resilient agricultural practices. This study used two-step approach to address its objectives. First, we gather data about vegetable farmers' practices, evaluate whether they can be considered climate resilient, and assess its potential for scaling up. Second, co-development of climate decision support tools such as crop climate calendar, Verbal Decision Analysis (VDA), and Rapid Climate Decision Analysis (RCDA) was introduced to farmers to integrate weather and climate information into different stages of vegetable production through a series of workshops. Results suggest that adoption of climate resilient agricultural practices generates higher farm productivity, contributes to reduction in carbon emissions, and enhance the achievement of year-round supply of vegetables despite changing climate conditions. Results of the verbal decision analysis and rapid climate decision analysis highlighted different events, decisions, and consequences per crop at various growth stages. These tools presented different possible outcomes per scenario. Farmers would then be able to make a decision depending on the results of the matrix. However, when the results from the VDA matrix are not yet clear and farmers will then proceed to the RCDA simulation. From the RCDA results, the farmers would have an idea of how much profit is estimated to be generated at different decision levels and climate events. Using the abovementioned tools provided options for decision makers to change the optimal decision from planting various crops resulting in a positive outcome. Results of study can provide essential inputs to policy making in prioritizing agricultural practices and harnessing decisions support tools that can contribute to the improvement of food security and livelihood of small-scale vegetable farmers.