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Climate change impacts and vulnerability assessment of selected municipalities and agroecosystems to support development of resilient communities and livelihoods in Nueva Ecija, Philippines

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In the last decade, the Philippines has been hit severely by natural disasters brought about by climate change which caused great damages to agriculture. The objectives of the study were to assess climate change impacts and vulnerability of Bongabon, Gabaldon and Cabanatuan city, Nueva Ecija; to assess the vulnerability and suitability of growing various crops, goats and chicken; to generate vulnerability and suitability maps; and to validate the maps produced. A comprehensive scoping, profiling, vulnerability assessment of crop, chicken and goat suitability assessment of the municipalities and agroecosystems of the study sites were done. Generation and validation of the vulnerability and suitability maps were also conducted. Results revealed that Bongabon obtained moderate vulnerability to floods and typhoon while low vulnerability to drought and soil erosion. Gabaldon had moderate vulnerability to floods, soil erosion and drought while low vulnerability to typhoon. Cabanatuan city attained moderate vulnerability to floods and drought while low vulnerability to typhoon. There were four crops suitable to grow in the current condition with flood and landslide hazards and in the two projected future scenarios (RCP 4.5 with good conditions and RCP 8.5 with the worst conditions). Only three crops are highly suitable to grow in Gabaldon for the future conditions, while in Cabanatuan city, four crops are very suitable for the three situations. Native chicken and goats are highly suitable to raise in the three study sites for the three conditions. There were 16 vulnerability maps developed and generated in Bongabon, 16 in Gabaldon and only 12 in Cabanatuan city. Furthermore, 21 crops, chicken and goat suitability maps were produced in Bongabon, 27 maps in Gabaldon and 21 maps in Cabanatuan city. Overall, validation of the maps in the study sites had high accuracy.

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