

**GIS-ASSISTED SUITABILITY MAPPING AND
ASSESSMENT OF ONION AND GARLIC
IN CONCEPCION, TARLAC**

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ABSTRACT

BRUTAS, ANA REA P., Department of Agricultural and Biosystems Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2023, GIS-ASSISTED SUITABILITY MAPPING AND ASSESSMENT OF ONION AND GARLIC IN CONCEPCION, TARLAC**

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Geographic Information System (GIS) technique is a powerful tool that can provide in terms of agricultural planning of an area for land use suitability. Land suitability analysis is an assessment of an area to determine how proper or appropriate it is for a particular use of the land in a particular location. The factors considered during land suitability assessment are slope, temperature, rainfall, soil texture, and landcover. Based on the suitability map of onion and garlic in Concepcion, Tarlac which was overlay and generated from five (5) criteria/factors layers; slope, soil texture, rainfall, temperature, landcover and partitioned into four (4) classes namely, not suitable, moderately suitable, suitable, and highly suitable. The result from the different factors shows that the site suitability analysis for onion production revealed that 88.00 ha of land area is highly suitable, 2, 209.00 ha of agricultural land is suitable, 18, 644.00 ha of the land area is moderately suitable, and 88.00 ha of the land area is not suitable (buildups). For garlic production, the site suitability analysis shows that 2, 297.36 ha of the land area is highly suitable, 18, 378.88 ha of agricultural land is suitable, 265.08 ha of the land area is moderately suitable, and 88.36 ha of the land area is not suitable (buildups).

Keywords: Geographic Information System, land use, model builder, crop suitability, suitability map

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