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**Agricultural Zoning Based on Biophysical Land Properties in  
Southeast Sulawesi, Indonesia**

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**Abstract**

On Muna Island, Southeast Sulawesi, agricultural land becomes increasingly a limited resource. In Kusambi district (282 km<sup>2</sup> = 6 % of Muna Island), slash-and-burn agriculture is still predominating and is one of the main factors for deforestation, land degradation and biodiversity losses due to increasing population density and resettlement programs. Also, agricultural land is increasingly being transformed into non-agricultural land. The main objective of this study was to assess the potential areas in Kusambi district which are suitable for the locally most important annual and permanent crops. The assessment is based on biophysical land properties, such as climate, soil, and vegetation cover, and envisages to establish a land-use zoning. Ninety-three land units were identified and then classified according to their suitability for the 23 most important annual and plantation crops as well as fruit and forest trees of the study region. The land suitability was classified into five groups: very suitable, moderately suitable, marginally suitable, currently not suitable and permanently not suitable. The information was analysed and visualized with a GIS and revealed that the major part of Kusambi district is suitable for field crops, while forest trees, except teak, are suitable only for the minor part of the district. Sixty-eight to 79 % of the district are suitable for the cultivation of irrigated rice, upland rice, maize, soybeans, peanuts, cassava, mung beans, and sweet potatoes, 52–80 % for fruit trees, but only 33–53 % for forest trees. The results show that drainage problems, slopes, nutrient deficiencies, and water shortage are the principal limiting factors for agricultural land-use in the study region. The results will be discussed with regard to regional land-use planning.

**Keywords:** Agriculture production, annual crops, forest trees, land suitability, land use planning, tree crops