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Abstract

Agroforestry Suitability Mapping for the Northwest Provinces of Vietnam †

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Abstract: This study aims to assess the potential development of selected agroforestry options for three provinces in the Northwest of Vietnam. Available spatial data including Land use/land cover maps and forest inventory maps were used as the base maps in combination with supplementary data and field survey to determine the potential agroforestry areas. Soil types, soil depth, soil texture, elevation, slope, temperature and rainfall were used to evaluate the biophysical suitability of ten typical agroforestry options in the study region. For assessing the impact of climate change to agroforestry suitability in the future, temperature and precipitation data extracted from two climate changes scenarios (Representative Concentration Pathway 4.5 and 8.5 in 2046–2065) were used. The results showed that the suitable areas for agroforestry development in Dien Bien, Son La and Yen Bai provinces were 267.74.01 ha, 405,597.96 ha; and 297,995.55 ha, respectively. Changes in temperature and precipitation by 2 climate change scenarios affected significantly to the suitability of *Docynia indica + livestock grass*, *Teak + plum + coffee + grass* and *Plum + maize + livestock grass* options. The map of agroforestry suitability can be served as a useful source in developing and expanding the area of agroforestry in the target provinces, and can be applied for other provinces in the same region in Vietnam.

Keywords: agroforestry; climate changes; spatial; suitability; Vietnam

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