WETLAND CONVERSION AND ITS IMPACTS ON REGIONAL LAND USE PATTERN IN WEST JAVA PROVINCE, INDONESIA

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Introduction

The transformation of natural resources allocation is one of the main processes in the transformation of Indonesian Economic Structure, besides the transformation of GNP relative share, labor absorption, etc. However, land is the basic natural resorce. The land conversion from agricultural use to others which leads to many problems is common.

West Java Province, being the second biggest province on population in Indonesia, has so many development problems. One of them is land use problem.

Historically, this region especially grew on the base of agricultural sector. In the northern part of this region, there are wide aluvial plain, the prime agricultural land in Indonesia, known as the most productive area for wetland rice. Recently, this area has been growing to settlement, industrial, and services areas, converting the agricultural uses. The population growth cause of the migration from other province and natality, and the economic growth have improved the land demand for settlement, and services areas. In the period of 1982-1986, more than 11,800 ha per year wetland ricefield areas are converted to other uses. On the other hand, the wetland rice area increased only 5,900 ha per year in the same time.

On other parts of the region, especially on the southern area, the phenomena in general are different significantly. Since the land capability of the areas is not so high and the availibility of water is low, the areas do not well develop. The differences in infrastructures and sociostructures between northern and southern regions develop gap in social welfare.

The impact of land conversion from agricultural uses (especially from wetland use) to other uses (such as settlement and industry) evolve many development problems. First, it decreases the regional rice production while the demand for rice increase fastly. Second, it pushes labor from agricultural sector, while the demand of labor in industrial sector grow slowly. Third, the land conversion usually do not take into account the optimal use of land. Fourth, it often does not consider the impacts on environment impact.

The objective of this study is to analyze the wetland use conversion and its impact on regional land use pattern and development in West Java province, Indonesia.

Methodology

Analysis unit of this study is **subregion**. Subregion defined as geographic unit of specific physic condition, land use, land status and administration.

Evaluation of physical characteristics of land are based on 1 : 250,000 scale of West Java land system (RePPProt, 1987) and soil map. Those maps are used to develop Land Suitability and land capability maps. The method of land suitability classifications that will be employed in this study is the modification method of CSR/FAO (1983), "Biro Perencanaan Departemen Transmigrasi Team" (1984) and "IPB Team" (1980). The land capability classification that will be used in this study is based on the method developed by Klingebiel and Montgomery (1973).

Several subregions are chosen as representative model of land conversion pattern. It is determined by (1) land capability and land suitability, (2) the use of the converted wetland, (3) the changes of subregions center hierarchy, (4) the trend of relative share of sectors in Regional Product and labour absorption, and (5) relative intensity of land use change (hectares per year). Land conversion pattern is predicted by employing several models. First, it will be evaluated by comparing 1:250,000 scale land use map recorded on 1970, 1980 and 1990. Second, the growth of population and thr development several main infrastructure of each subregion in the same period (1970, 1980 and 1990); will be analyzed by scalogram method (Roy and Patil, 1977) and Treshold Population Centrality Score Method (TPCS Method). Scalogram and TPCS Method will be employed to predict the hierarchy of subregion. Third, it employs a model which predict the trend of relative share changes of each sectors in regional economy. Location Quotient (LQ) method will be used to predict structural changes. The economic structure changes to some extent, implies land conversion pattern. Fourth, Shift Share Analysis Method will be used for each subregion. The land conversion on each subregion is classified as fast, moderate, or slow.

Primary data will be collected from several subregions which have specific wetland conversion processes. The data will be used for Simultanuous Regression Model and Critical Path Analysis. The analysis will be used to predict the significant variables and cause-effect mechanisms among the variables which influence land conversion process and agricultural land rent. From the models, the trend of land conversion and its impacts to regional development can be predicted.

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