year	month	day
2012	06	25

Department	Environmental & Life Engineering	ID	089401
Name	INDRAWAN PERMANA		

Supervisor	Professor YUZURU MIYATA

Abstract

Title	Analysis of the Illegal Settlements in Palangkaraya City, Indonesia -Urban Economics Studies-

(800 words)

Illegal settlements, i.e. a formation of slum, as found in many urbanized cities of particularly developing countries have been widely recognized as an urban phenomenon as well as an urban problem. The settlements usually were constructed in marginal land such as flood prone areas along river bank sides, and any other vacant areas within urban areas. The term `illegal settlement` often refers to unsanctioned subdivisions of land where squatters constructed housing units without formal and legal permissions. This category also includes units built on land for which the property rights are not clear and/or are not sanctioned by law, and as well as housing units built without a building permit. Therefore, this kind of slum is also defined as a shanty, or a squatter settlement.

This study aimed at analyzing Palangkaraya city in Central Kalimantan province, Indonesia by constructing partial and general equilibrium models. The models employed the bid rent approach, taking into account flood damage rate to household`s assets. As flood occurrences are stochastic, and due to unreliability of data records of flood occurrences in the past time, hence the models introduced the expected flood damage rate on households' assets. This attempt never appears in traditional urban economics models being highlighted among others.

The models showed a new finding that the bid rent by representative low income households in the flood prone area could get higher than the bid rent by representative high income households. Hence as a result, the flood prone areas are occupied by the representative low income households, leading to a rise of illegal settlements. Meanwhile the normal land is occupied by the representative high income households. Arraying the results, then a residential land use pattern in the city is depicted showing that normal land are resided by high income households while flood prone areas are occupied by low income households.

Furthermore, the bid max lot size determining the optimal lot size afforded by both types of the households is derived when the bid rent slope given by the budget line is in tangent with the fixed utility level of the households. The numerical simulation showed that the optimal lot size of the representative households, who live in the flood prone areas where the expected flood damage rate on household`s assets takes value more than 0, is smaller than that in the normal land. The result implies that the density in the fixed flood prone areas is higher than that in the normal land.

Policy simulations of three cases showed that 50% increase in household`s supreme utility level by development of surrounding rural areas would significantly reduce density in the flood prone areas at changing rate 76%. Furthermore, by comparing slopes of density in case 1, case 2 and case 3 which take value 0.0006, 0.0003 and 0.000019, respectively, one can conclude that 50% increase in household`s supreme utility level would reduce the density in the flood prone areas at better changing rate than that by case 2 and case 3.

Finally to conclude, the two models have shown analytical studies on illegal settlement in flood prone areas. The models demonstrate a new attempt, as compared with others, in analyzing such a city in which flood prone areas exist by nature. The study derived a new finding in which that in the flood prone areas, the bid rent by the representative low income households could get higher than that by the representative high income households, thus providing a scientific explanation regarding the existence of the illegal settlements in the flood prone areas. Furthermore applying the models, one can assess supreme utility development policies leading to depletion of the occupied flood prone areas. Thus those can recover the flood prone areas to be more open space.