THE ROLE OF GEOLOGY IN REGIONAL PLANNING AND DEVELOPMENT

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ABSTRACT

Geology is the study of the earth crust, dealing with the material in term of rocks, the process regarding the running activity from time to time that changes the characteristics of rocks (such as mineral composition, structure, deformation stage, etc), the product as the result of process, and time or history. Geology possesses two groups of disciplines that play important roles for the support of land, energy and mineral resource as the figure of Geological Wheel. Branches of geology dealing with land resources development are grouped into Geological Engineering discipline that consist of hydrogeology, engineering geology-geotechnics-geomechanics, coastal geomorphology, marine geology, urban geology, environmental geology. These disciplines play important role in areal development and infrastructure design and construction. For supporting the successful regional design urban geology, hydrogeology, and environmental geology are of most importance. Since the condition of the all aspects occurring in a map unit are of geological origin, it is understood that the map unit is of land genetic unit, abbreviated as LGU. This LGU can be delineated or mapped, in which all the seven aspects can be rated to present their stage of potency of the map unit in one side and/or their constraint in the other side. This kind of map of a region, for example under regional planning program, presenting LGU(s) of different characteristics, potency, and constraint is very helpful for the support of successful goal of the program. Every LGU is determined by the following three parameters: 1) the lithologic composition that construct the unit; 2) stage of deformation by tectonic activity; and 3) the morphologic feature of the land surface. This LGU is identifiable and can be mapped through engineering geological mapping resulting in delineated map units in the Land Genetic Map.

Keywords: Geology, Engineering, Regional Planning, Land Genetic Unit (LGU)