

Landscape change of *kabuyutan* sacred natural sites in Indonesia

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Thousands of sacred natural sites still remain throughout the world and many of them are little known and ignored. These places have been considerably important role to maintain and enhance the quality of environment through their function as a safeguard of the existence of biocultural diversity. In the last two decades, the topic about sacred natural sites has been widely discussed by scholars. However, few case studies have been conducted in Indonesia although Indonesia has more than 1300 ethnicities in 31 ethnic groups. To expand the geographical range of studies and enrich the repertoire of knowledge, we conducted a study on *kabuyutan* sacred natural sites. The objectives of study were to identify the structure and dynamics of *kabuyutan* landscape and to analysis its socioecological consequences. This study was conducted in *kabuyutan* located in Ciomas Village, Panjalu District, Ciamis Regency, West Java Province, Indonesia (latitude 07°07'00" to 07°12'00" S, longitude 108°15'00" to 108°19'00" E). Observation participant through in-depth interviews (four key informants were selected by snowball sampling method), three focus group discussions (5 to 8 participants per session), and participatory survey methods were conducted in February 2015 to provide a snapshot of *kabuyutan* landscape. In parallel, GIS-based analysis method with a high resolution image derived from Google Earth (year 2014) and two topographic maps (year 2000 and 2014) was used to provide scientific spatial information such as land-use classification maps and its changes. The results were analyzed qualitatively to elaborate the phenomena. Findings revealed that local people's knowledge has provided significant information in identifying *kabuyutan* landscape as well as the changes and its particular reasons. At least 26 *kabuyutan* were found and identified having a unique structure compare to surrounding landscape which symbolized by springs (38.5%), specific plant species (34.6%), graves (11.5%), stones (3.8%), and tributary of rivers (11.5%). Most *kabuyutan* were recognized in the average elevation of 718 m above sea level, average approximate distance to river of 69.26 m and to road of 111.32 m, slope ranges from 0% to 5% with 57.7% of lands toward east direction (aspect), 61.5% of them located in non-natural woody area, 76.9% of lands were owned by individual resident (private), and more than half of *kabuyutan* recognized to be protected around radius 35 m as their buffer zone. Local people perceived these land variables were important to maintain the existence of *kabuyutan*, especially to ensure the sustainability of socioecological system. Land-use changes in micro scale need to be considered due to the land ownership status. *Kabuyutan* located in private lands were more vulnerable because of the landowner's interest. This led to concern about a reduction or even loss of *kabuyutan*'s structure and function. We suggested that providing and transferring knowledge related to the important role of *kabuyutan* as well as empowering the significant role of local leader (custodian) are necessary to prevent the negative impact of changes.

Keywords: *kabuyutan*, biocultural diversity, socioecological system