

A conceptual framework approach on mapping multiple ecosystem services in tropical wetland areas on a local scale

Abstract

Ecosystem services are notably seen as an important factor in decisions regarding the use and management of wetlands and their benefits to society. Understanding changes in wetland ecosystem service supply is the key issue for an effective tool in conservation management. However, there is a lack of holistic non-monetary approaches to assessing relevant and specific ecosystem service on a local scale. This study proposes a conceptual framework of wetland potential ecosystem services and sub-services supply by examining literature and studying the historical land cover change of the specified study area. This approach used different land cover/land use types as complex indicators. Multitemporal medium resolution satellite images (1985-2014) were classified to identify historical land cover changes in the area. Qualitative expert assessment of ecological integrity and ecosystem services supply, combined with land cover types and ecosystem categories and subtypes were conducted to identify their respective capacities. With the ecosystem services as its core, the framework took into account the influence of both forest and human interrelations to assess wetland ecosystem services. It is hoped that the proposed conceptual framework will provide a more complete understanding of the characterised ecosystem function and potential service supplies of multiple land covers pertaining to wetland conservation effectiveness.