

Integration of climate and land use scenarios in ecosystem service assessment

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Provisioning of services to human and environment is one of the crucial roles of ecosystem. Ecosystem gives a variety of services such as providing for food, habitat, recreation and conservation options. The capacity of delivering essential ecosystem services to social well-being is impeded by climate and land use change, causing a significant change in quality of functions and services of many ecosystems. A focus on how to estimate future ecosystem services by integration of climate and land use change scenarios would be fruitful for collaborative planning and decision support system. Integration framework is being applied to coastal ecosystem in Thailand. The 2050 climate scenario is projected by using WorldClim at 30 seconds resolution. Projection of land use change scenario in 2050 using land allocation model is simulated by framing of three scenarios; economic, business as usual and sustainability driven. Preliminary result reveals that increase in sea level rise, temperature and extreme weather events, while decrease in mangrove forest area and increase in urban expansion will impact function and service of coastal ecosystem and community resilience. There is thus an urgent need on scaling up plan and policy related to integration of climate and land use change to sustain ecosystem services.

Key words: Climate, Land use, Ecosystem services, Coastal