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Designing Ecosystem-based Adaptation projects – a case study of Tanna Island Vanuatu

KEY WORDS: Decision Support Systems, GIS, Ecosystem-based Adaptation

Abstract:

Ecosystem-based Adaptation (EbA) provides a significant opportunity for small island developing states across Oceania to simultaneously deal with climate change threats and progress towards Sustainable Development Goals. The significant potential for EbA and its distinctions from other adaptation approaches (e.g. capital works or community based), requires the development of specific project planning and design practices. This case study describes an approach to design and planning of EbA projects on Tanna Island in Vanuatu moving from whole of island scale resilience assessment, stakeholder engagement, through optionearing, community consultation to the development of EbA project business cases.

Since March 2015 when Tropical Cyclone Pam made landfall on Tanna Island significant attention has been focused on the challenge of reducing the vulnerability of the islands population to such disasters and future climate change impacts. This attention has highlighted the significant social and cultural connections to ecosystem health for Tanna's primarily subsistence population. In addition to climate change rapid population growth and the emerging influence of a capitalist economic system are adding pressure to the islands ecosystems and highlighting the need for EbA projects characteristics which are shared across many SIDS.

To synthesis the complexity of the Tanna Island context in the design of EbA projects and the need to connect with traditional knowledge systems the approach to project design and planning centered on the creation of a series of ecosystem services and socioeconomic resilience maps. The maps synthesis data on climate, ecology, social, cultural and policy factors to facilitate problem diagnosis and then become key knowledge transfer and learning products for engagement with stakeholder and generation and design and refinement of EbA projects.