



SPICE final conference
January 20 & 21, 2016

Proposal	
Affiliated to topic (Session 1- 8)	Governance of coastal and marine ecosystems
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The Governance and Management of Indonesian Coastal Social-Ecological Systems: Some Findings across Space and Time

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Abstract

The presentation outlines the beginnings of social science engagement in the SPICE programme with the Cluster 6 on “The Governance and Management of Indonesian Coastal Social-Ecological Systems”. Scientists in this cluster undertook research in three coastal regions of Indonesia (Segara Anakan Lagoon, Java; Siak river, Riau and Spermonde island archipelago, South Sulawesi). Social science and social-ecological research was done in regional sub-teams using a shared conceptual approach surrounding the definition of SES and of resilience, and in constant dialogue on method development. The overall guiding questions of the work in Cluster 6 (2007-2010), and of some of the follow-up work done under different topics in SPICE III (2011-2015), were: What drives environmental and related socio-economic changes? How are government, market and society influencing coastal change? What are the options for future governance? This talk presents six overarching results SPICE Cluster 6 generated in 2010, and reflects on these in the light of subsequent research results under SPICE III and elsewhere.

The Governance of Social-Ecological Connectivity in the Seagrass Ecosystem Based Small Scale Fisheries in Indonesia

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Abstract

This research is aimed to (1) identify spatial distribution of social-ecological system (SES) of seagrass in the Bintan Islands, Riau Islands Province; (2) estimate seagrass residence index for biota found in the seagrass ecosystem; (3) provide ecosystem services map for the system; and (4) estimate the value of ecosystem degradation using social-ecological connectivities as the main approach. A social-ecological system (SES) approach was used in developing the methodology and sampling frame for conducting this research. Using the Seagrass Residence Index (SRI) suggested by (McArthur and Boland, 2006), this research reveals that *SRI* ranges from 0.10 to 1.00. From the analysis of social-ecological connectivities of the seagrass ecosystem, it is also revealed that the spatial distribution of small scale fisheries in the ecosystem is relatively close to their villages. The value of the seagrass ecosystem degradation is approximately estimated as IDR 257.78 million ha⁻¹.year⁻¹ using the social-ecological connectivity approach.

Keywords: *seagrass ecosystems, seagrass residence index, social-ecological system, ecosystem services mapping, valuation of seagrass ecosystems degradation, Bintan Island*



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<p>Marine Protected Area (MPA) Legislation: Its Framework and Implementation</p> <p>Baitoningsih, W.¹</p> <p>¹ Leibniz Center for Tropical Marine Ecology (ZMT) – Fahrenheitstraße 6, Bremen 28359, Germany</p> <p>corresponding author: wasistini.baitoningsih@leibniz-zmt.de</p> <p>Abstract</p> <p>MPA establishment process in Indonesia entered a new stage when the Ministry of Marine Affairs and Fisheries (MOMAF) was established. Under the administration of MOMAF, the MPA establishment process provides opportunity for local governments and non-government stakeholders to propose MPAs. MOMAF aims to improve the previous process that was centralized and top-down to become more decentralized and participatory. This presentation analyses the MPA legislation in order to see whether the MPA establishment process has met its aims. First, the texts in MPA legislation are discussed. It is found that the definition of different MPA categories is overlapping, and details of establishment process are different even though the steps are similar. Second, the implementations of MPA legislation in two MPAs at the Savu Sea and Derawan Archipelago are discussed. Establishment process at both MPAs was adjusted and even postponed due to the gaps in legislation. At the Savu Sea, the MPA zoning and management plans had to be revised completely. The appointment of the sole MPA management authority closed any opportunity for other stakeholders to take part in the park management, even though they were involved in the establishment process. Similar situation was found at Derawan, where communities could not be involved in the park management unless they become civil servants. This process was put on hold due to the enactment of the revised Local Autonomy Law that restricts the authority of district governments to manage marine areas. In conclusion, the MPA legislation is complicated yet incomplete, which make it difficult to be implemented and only applies to MPAs at the national level. Future legislation to address the gaps could be enacted. However, as long as the development of legislation only addresses specific problems without examining their roots, new legislation may serve only to transfer one problem to elsewhere.</p>	



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Can PES promote community-level forest conservation?: Experimental Evidence from Indonesia

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A growing number of experimental studies are empirically questioning the assumptions embedded in PES, namely that, by offering a monetary incentive, resource users should change their incentive structure from degrading to conserving. There exists a wide body of literature from behavioral economics and psychology demonstrating that human behavior is incentivized for a number of reasons, not all of which are monetarily driven. It has been shown that external interventions, such as financial incentives, may not interact well with intrinsic or personal motivations, and can reduce the effectiveness of such reward systems.

Interestingly, however, the literature is very limited on how such rewards can affect the development of collective action (Vollan, 2008; Midler, 2015), and even less attention is paid to the effect of different types of rewards (Narloch et al., 2012). We contribute to this growing body of research by testing several framed Public Goods experiments, whereby we ask subjects to contribute land units as a public investment, given that the PES reward is given individually, as a group to be shared, or as a re-investment in an existing real public good – in this case, the local village school. Our main result is that private rewards yield the highest cooperation levels, although the school treatment has the highest desirability among subjects. We find that subjects actually donate less in the group rewards treatment, but we attribute this to low marginal returns as well as the additional, embedded collective action problem that is presented by this scheme.



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Perceptions on changes over time: Environment and resources through the eyes of resources users

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Abstract

How people experience, feel, and perceive marine and coastal systems influences their actions and practices towards them, and consequently, shape the systems themselves. For this reason, the majority of coastal systems have to be seen as culturally shaped environments. Just as landscapes, they are symbolic environments emerging through a process in which people confer meaning to nature and the environment within a particular cultural context. Exploring these complex social-ecological systems, and especially their development over time, requires capturing a wide range of knowledges, perspectives, and experiences of their resource users. The work presented here uses observations and perceptions of resource users to describe two Indonesian coastal systems: the Segara Anakan lagoon in Southern Java, and the Spermonde Archipelago in South Sulawesi. Data have been collected between 2007 and 2013 using semi-structured interviews of local resource users. Results show that while the majority of resource users observe similar environmental changes, their interpretations of underlying causes might differ substantially from scientifically-based explanations. Given that people's behaviors and day-to-day management is strongly affected by their perceptions, perception gathering is crucial for management. It can also reveal previously unseen social, ecological, economic, and other processes.



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The need to look upstream. Watershed management in the catchment of the Segara Anakan lagoon

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Abstract

Riverine fluxes affect many coastal and marine ecosystems. Yet, the factors influencing these fluxes and related governance and management approaches remain underexplored. Riverine fluxes are influenced by a multitude of watershed characteristics and transformations, which in turn are shaped by a broad range of interwoven drivers operating on various scales. The knowledge of these drivers as well as the links between watershed characteristics and riverine fluxes is often very limited. This makes the field prone to politicisations with debates, research and interventions focussing on a few selected issues and drivers while neglecting others. Debates and interventions targeting high river sediment loads and coastal sedimentation in Java have focussed on upland peasants' private plots for decades. The neglect of other sediment sources and the entanglement of watershed management with struggles over the access to and control of forests have undermined the effectiveness of sediment mitigation strategies. The presentation links shoreline aggradation in the Segara Anakan lagoon on Java's south coast with a range of watershed characteristics and transformations and thereby broadens the debate on the drivers of lagoon sedimentation. Presenting results of an analysis of land use and land cover change and its drivers, it directs particular attention to tenure contestations as an important cause of upland erosion. The findings suggest that watershed protection strategies must be linked with debates over future (re-) arrangements of the patterns of forest access and control. They also underscore the need to look upstream in trying to understand and manage coastal dynamics.