

## **Racing for the Oceans**

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Human societies depend on natural resources and ecosystem services derived from a well-functioning biosphere. Driven by current economic paradigms and consumption patterns, land-based resources are becoming increasingly scarce. Attention is therefore shifting rapidly towards the oceans as engines for sustaining future human needs. This situation is here framed as a race for three broad claims related to 1) food resources for direct and indirect consumption, 2) other extractive and non-extractive resources, and 3) spatial entitlements for various activities and needs. Driven by a wide range of actors – from individuals to transnational corporations – we argue these claims cannot add up and will lead to inevitable conflicts and tradeoffs. This poses great challenges for the future sustainability of the oceans and calls for a global governance of marine systems that integrates multiple sectors and accounts for the diversity of actors involved. We finally unpack and discuss the extent to which the United Nations Sustainable Development Goals and their targets (Goal 14 in particular: Conserve and sustainably use the oceans, seas and marine resources) can address the anticipated intensification of competing claims for the oceans.

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## **Tuesday, 22 August - Room 33 (30) - 11:50 - 12:30**

### **Multi-level governance and social network analysis**

Multi-level governance and biosphere stewardship

Chair/s: Örjan Bodin

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Oral communication:

### **Social networks and governance of ecosystem services: Power asymmetries among local beneficiaries and institutions at multiple levels**

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Analyzing how humans benefit from ecosystems and understanding how benefits relate to ecosystem governance structures are high priority objectives of socio-ecological research. Several frameworks describing the delivery of ecosystem services (ES) have been proposed, and recently, an increasing attention is being given to the social component (i.e. the beneficiaries) of ES. Stakeholders do not access ES equally and consequently do not benefit the same way from ecosystems. Similarly stakeholders and institutions (with different mandates and governance levels, from local and national) do not contribute equally to ecosystem management and governance. Power relationships have an important role in ES tradeoffs. While there is an important body of literature dealing with power relationships and the access to natural resources, the concept of ES remains poorly related to those questions of equity and environmental justice. However, identifying power relationships is crucial to highlight the mismatch between stakeholders that highly depend on ES but that are excluded from their

Final PDF-version, August 18th 2017. For later updates please see the interactive programme.

management and to design sustainable environmental policies that reduce social inequalities. This study aims to investigate the relationships between ES and stakeholders (including individuals and local to national institutions) in a Peruvian watershed. Relevant stakeholders were identified during focus groups. Two-mode Social Network Analysis was conducted based on 65 semi-structured interviews. They informed us about stakeholders-ES interactions related to benefits received from ES (use and exclusion) and influence on ES (positive or negative effect on their level). Network structural properties were computed to analyze the nature and intensity of relationships. Results showed that stakeholders were clustered regarding the ES they interacted with. There was a mismatch between stakeholders depending on ES and stakeholders managing them. This study underline the importance of integrating such power asymmetries in environmental and socio-economic policies since stakeholders that strongly depend on ES are also likely to be deeply affected by global changes (climate change, economic transformation, increase of population, etc.).

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Oral communication:

**Organizing multi-level marine governance: Implications from a relational analysis of case studies in Brazil and Indonesia**

Philipp Gorris

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Concerns about the world's oceans are rapidly growing. The potential of a multi-level approach to governing marine ecosystems is increasingly acknowledged. Yet, little is known about how to best link a growing number of actors across administrative levels in order to facilitate sustainable local governance outcomes. This research uses social network analysis (SNA) to identify relational characteristics associated with more sustainable outcomes of marine governance at the local level in a multi-level context based on two regions in Brazil and Indonesia. In each of the two regions, four communities within close vicinity to each other were selected as local study sites. Two communities in each region display rather sustainable resource use behavior in that functional local rules exist and resource users comply with them. The local resource users in the other two communities in each of the regions are involved in highly unsustainable resource use practices. Based on 194 face-to-face SNA interviews carried out over a one-year field research period, weighted networks were obtained for the frequency and quality of interaction between marine governance actors within each of the eight communities, and between local actors and actors from higher levels in the respective administrative hierarchy. The study finds two common relational characteristics that seem to affect local governance outcomes in a multi-level context. First, the results clearly show that in the communities with more sustainable resource use, the integration and activity of local civil society actors in the multi-level governance network is much higher than in the other communities. The second common characteristic relates to a higher centralization of the governance network in the communities with less sustainable outcomes. In these communities, certain local actors have become influential structural bottlenecks in the multi-level marine governance system as a high number of interaction is channeled through only few local actors.

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Oral communication:

**The effects of time on the structure of networks for governing social-ecological systems**

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