

INSIGHT #3 ADAPTIVE GOVERNANCE

# Governance of social-ecological systems in an increasingly uncertain world needs to be collaborative, flexible and learning-based

**Adaptive governance of interdependent social and ecological systems is key to address complex interactions and to manage uncertainty and periods of change. A central characteristic of such adaptive governance is collaborative, flexible and learning-based issue management across different scales.**

Adaptive governance of social-ecological systems is about connecting actors and institutions at multiple organizational levels to enable ecosystem stewardship in the face of uncertainty and surprise. These actors tend to be connected in social networks (see figure below for an example) and can provide leadership, trust, vision, and meaning in ways that help manage conflicts, anticipate and prepare for uncertainty and change or transform management organizations toward a learning environment (Folke et al. 2005, Boyd and Folke 2012).

The adaptive governance literature is related to the adaptive co-management literature (Fabricius et al. 2007, Olsson et al. 2004, Plummer 2009) but accounts for multiple levels and scales. It also has a more explicit focus on preparing for surprise; the institutional prescriptions concerning polycentricity, participation, experimentation, and spatial fit largely

resonate with the theoretical and empirical insights from the traditional governance literature (Huitema et al. 2009).

Adaptability in a resilience framework implies the capacity not only to respond according to the preferences of important stakeholders but also to respond to and shape ecosystem dynamics and change in an informed manner (Ernstsson et al. 2010, Folke et al. 2010). “Informed manner” means that adaptations and innovation acknowledge our dependence on the biosphere (Westley et al. 2011).

Centre research has revealed that trust building and knowledge generation in local social-ecological systems (SES) are important in periods of slow change in order to be prepared for adaptation in periods of fast change (Olsson et al. 2007, Barthel et al. 2010). Although management practices of ecosystem services play out in local contexts (Andersson et al. 2007, Schultz et al. 2007), adaptive governance systems tend to be multilevel, connecting the local with the national and international (Boyd 2008, Schultz et al. 2011, Österblom et al. 2010).

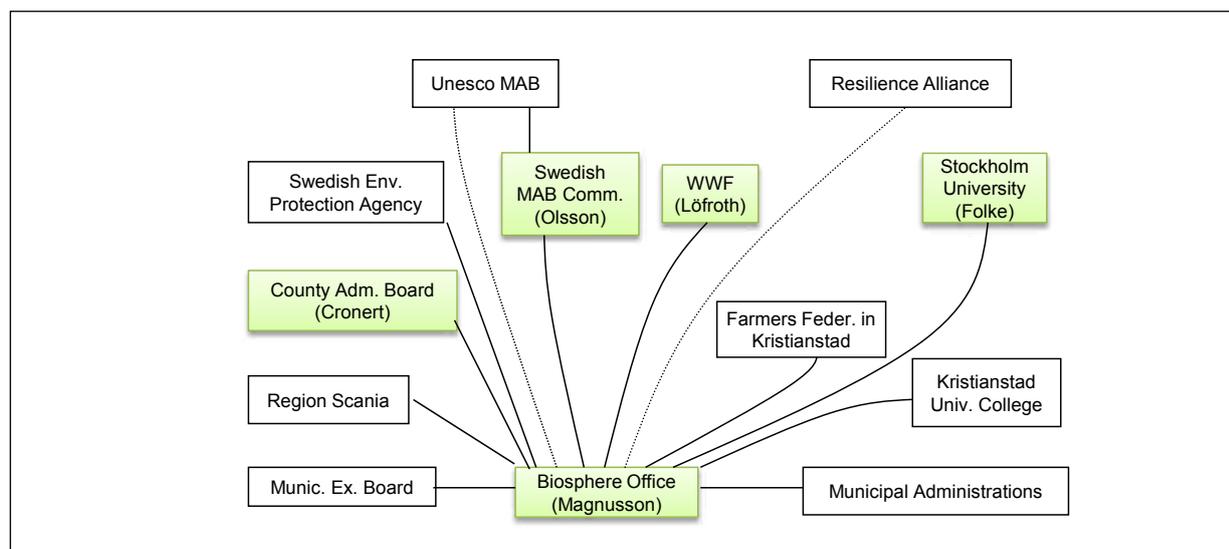


Fig. 1. The nodes in a governance network consist of key individuals who belong to an organization. In some cases (shaded boxes) these individuals invented their own mandate within their respective organization. This figure illustrates the governance network of Kristianstads Vattenrike Biosphere Reserve (KVBR) (Hahn 2011).

## KEY FINDINGS:

### **Adaptive governance provides guidance for understanding connectivity between features of resilience, dynamic change, processes and outcomes**

Building resilience in practice is about truly interdependent social-ecological systems. It involves a learning-based, multilayered committee approach that brings together public and private actors for sharing risk and the burden of planning and reorganization following abrupt change. Adaptive governance puts governance into a framework that deals with shocks and surprises and moves across scales exemplified through diseases, disasters, and climate change (Boyd and Folke 2012).

### **The processes of adaptive governance require an arena/platform to bridge sectors and organizational levels**

These processes include trust-building, vertical and horizontal collaboration, learning, sense-making, identification of common interests, and conflict resolution. In some successful cases this is provided by a bridging organization (Hahn et al. 2006, Malayang et al. 2006, Olsson et al. 2008, Schultz et al. 2011). Bridging functions can also be provided by scale-crossing brokers who are engaged in practices to connect actors across social-ecological scales. It is important to identify and support such key persons (Ernstson et al. 2009). But there are also instances where bridging functions counteract sustainable resource management, for example middlemen in East African coastal fisheries (Crona et al. 2010) or is simply lacking like in water management in Tanzanian catchments (Stein et al. 2011).

### **Adaptive governance coordinates different types of networks**

Local steward networks typically include landowners and local NGOs and civil servants concerned with the actual management (Colding et al. 2006, Schultz et al. 2007, Hahn 2011), while the governance network of ecosystem stewardship typically includes national NGOs and civil servants who can provide and mobilise institutional, financial and political support as well as external knowledge. International governance networks can include state agencies, large NGOs, industries and multinational organizations such as UN or EU (Kittinger et al. 2010, Galaz et al. in press). The challenge of ecosystem stewardship often requires change processes and restructuring of the international organizations involved (Stange et al. in press).

### **Network structure affects adaptive governance processes**

Significant differences in governance processes and outcomes can be expected among governance networks experiencing structural differences in terms of density of relations, degree of cohesiveness, subgroup interconnectivity, and degree of network centralization (Bodin and Crona 2009). These structural characteristics can strongly influence, for example, degree of trust (i.e. social capital), learning and distribution of knowledge, influence and power, level of compliance, and ability to access critical resources (Bodin and Crona 2008, Crona and Bodin 2010).

### **Legitimacy and accountability of self-organized governance networks can be constructed in different ways**

Transparency and involvement of a variety of stakeholders ensure legitimacy, but at the same time accountability becomes blurred when decisions are taken. In Kristianstads Vattenrike Biosphere Reserve (pictured below) a complementary model has been adopted where politicians make the final decisions based on the proposals made by the governance network. In this way the innovativeness and adaptability of networks are combined with representative democracy and thus traditional accountability (Hahn 2011).

### **Abrupt change requires a different theoretical analysis**

Abrupt change poses particular challenges for governance and requires a different theoretical analysis than incremental social-ecological change. Incremental change requires institutions promoting predictability, stability and efficiency while abrupt change requires flexibility, learning, and network responses to cascading effects (Duit and Galaz 2008, Galaz et al. 2010, Boyd and Folke 2012).

### **Adaptive governance can operate in a global context**

Adaptive governance is subject to a global context with intensified interactions and drivers landing in local places (Folke et al. 2011). Globally connected adaptive governance systems can emerge to support regional ecosystem stewardship, as reflected in the successful efforts to curb illegal and unreported overfishing in the Southern Ocean (Österblom et al. 2010, Österblom and Sumaila 2011). Polycentric systems may play a significant role in global adaptive governance (Galaz et al. in press). An example is the way multilateral frameworks provision or block the enabling conditions for local adaptation to global climate change (Boyd and Kjellen in press).



*A survey of 146 Biosphere Reserves in 55 countries showed that adaptive co-management (ACM) practices were associated with a higher level of effectiveness in achieving development goals, while biodiversity conservation effectiveness remained high. The conclusion was that ACM enables a broader set of goals to be achieved simultaneously in e.g. conservation efforts (Schultz et al. 2011). Photo: Sven-Erik Magnusson/Biosfärkontoret*

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