



## Knowledge Systems Theme

### Institutional analysis guide

Coastal zone management involves a complex interaction of biophysical and socio-cultural dimensions. Coastal ecology, has affected, and been affected by human habitation for tens of thousands of years. In recent decades human uses of and impacts on the coastal zone have increased, with pressures arising from rapid coastal population growth and development, catchment land and water use, marine industries (shipping, tourism, fishing, aquaculture, oil and gas development), pollution, exotic species, coastal infrastructure development, extreme weather events, and climate change. While scientists and science agencies, have generated a substantial body of scientific data and models on which decision makers and stakeholders should be able to act to improve coastal zone management, there is an ongoing concern to improve the way in which this knowledge contributes to decision making.

The tensions between science and societal decision-making are brought into sharpest relief when divergent values and high stakes precipitate controversy. In these settings scientific claims are contested by counterclaims (sometimes as a façade for ideological arguments) to create a visage of scientific uncertainty (Sarewitz 2004). Such politicisation of science often manifests as claims made about the credibility of scientific information, for example through statements linking research results with the interests of funders. Various attempts have been made to remedy such artefacts of the fundamental tension between 'facts' and 'values' in order to work through such controversy. The more sophisticated of these recognise that these categories were never really mutually exclusive or very useful (Sarewitz 2004).

As a result, contemporary experience and theory suggest the need for greater reflexivity: the need to recognise how governance shapes, and is shaped by, knowledge systems and broader societal loops and contexts, as well as by its own workings (Vob et al 2006).

Institutional analysis derives from a traditional focus of policy studies (Lowndes 2002; March and Olsen 1996) and is useful for considering the way in which formal decision making processes influence the way in which science and other forms of knowledge, may inform coastal zone management. In this respect, examination of the roles and responsibilities of different organisations and institutions can be guided by questions such as:

- What are the roles and responsibilities of the organisations that influence how decisions are made?
- What kinds of knowledge are used?
- What are the expectations of stakeholders about how knowledge about the coastal zone is delivered?
- What organisational reforms would improve coastal zone decision-making?

### Further Reading

- Lowndes, V. 2002. Institutionalism. In *Theory and Methods in Political Science*, eds D. Marsh and G. Stocker, 90-108. Basingstoke: Palgrave MacMillan.
- March, J., and J. Olsen. 1996. Institutional Perspectives on Political Institutions. *Governance* 9 (3): 248-64.
- Sarewitz, D. 2004. How Science Makes Environmental Controversies Worse. *Environmental Science & Policy* 7: 385-403.
- Vob, J.-P., D. Bauknecht, and R. Kemp. 2006. *Reflexive Governance for Sustainable Development*. Cheltenham, UK: Edward Elgar.