

## PRIORITY TOPIC 3

Linking  
governance and  
science in coastal  
regions

## A Certification Programme

## in the Governance of Coastal Ecosystems

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## 1 The Capacity Building Imperative

The Millennium Assessment (2005) is one of many that documents that the goods and services that are generated by ecosystems and benefit humanity are being degraded and destroyed. The pace of such losses is particularly evident along coastlines in low income nations in the tropics. A major reason for this disturbing reality is that the capacity to practice forms of governance that can successfully influence and redirect the forms of human behaviour that are the root causes of these negative trends is weak or absent. This does not mean that we do not know how to do better. It does mean that there is an urgent need to codify what has been learned from what is now a rich body of experience in various forms of integrated coastal management and to make a far greater investment in building the necessary capacity in both individual contributors and the institutions through which they operate. The Coastal Ecosystem Governance (CEG) Certification described in this article is one strategy for defining the competencies that are required and developing the mechanisms by which they can be disseminated and applied.

A recent global review and analysis of past and current approaches to building capacity for ocean and coastal stewardship (National Research Council 2008) found that capacity building efforts for the management of oceans and coasts are typically fragmented, lack standards for monitoring and evaluation, and are usually too short term to achieve and sustain effective ocean and coastal planning and decision making. The report emphasizes the need to anchor all investments in thorough needs assessments that feature the governance dimensions of trends in ecosystem condition, current issues and future challenges. It underscores that the capacities and traditions of the existing governance system in a given locale or region must be carefully assessed when identifying the needs for strengthening abilities to respond effectively to problems and opportunities. Further, the Research Council recommends that needs assessments and the subsequent design and execution of capacity building strategies be tailored to the specific features and needs of different world regions. The CEG certification programme we describe in this article recognises these realities and has worked to respond to them.

## 2 An Initiative undertaken in contribution to LOICZ Priority Topic 3

The CEG Certification is one element of a five year effort undertaken by the LOICZ Priority Topic 3 working group that has addressed the linkages between governance and science in coastal regions. The working group invited by Stephen B. Olsen (University of Rhode Island), further included Val Cummings (University College Cork), Jeremy Gault (University College Cork), Patricia Gallagher (Simon Frazer University), Timothy Hennessey (University of Rhode Island), Andreas Kannen (GKSS Research Centre), Hartwig Kremer (GKSS Research Centre, LOICZ IPO), Michael McClain (Florida International University), Mark Mellett (Irish Naval Service), Jon Sutinen (University of Rhode Island), Liana Talaue McManus (University of Miami), and Juerген Weichselgärtner (LOICZ IPO).

A major focus of this effort has been to develop methods that assess, from a long term perspective, how the governance systems in a specific locale have responded – or failed to respond – to change in coastal socio-ecological systems. The strategy has been to select for methods that can be applied by practitioners operating with a diversity of technical backgrounds (biologists, economists, engineers, lawyers). The methods are organised as a step-by-step process of documentation and analysis of long term trends in key environmental and societal variables, the major governance issues posed by these changes and a careful analysis of how the institutions of government, civil society and market forces have responded to such issues. This process is described as the assembly of a “governance baseline” that benchmarks the maturity and the strengths and weakness of a coastal governance system at a defined point in time. The methods have been summarised in a handbook published in 2009 and distributed as LOICZ Reports and Studies Vol. No. 34 (available online).

The certification programme was designed to complement a two year “proof of concept” application of the governance baseline methods carried out by through teams working at sites in twelve Latin American countries. This phase was carried out in Spanish as the working language. Materials generated through this effort are becoming translated into English as well. Both the governance analysis methods and the certification programme are now considered sufficiently mature to be applied in other regions, an effort LOICZ aims to continuously support.

## 3 Why a Professional Certification?

Certification is a form of quality assurance and quality control. When applied to individuals it requires setting standards for specific competencies and defining the mechanisms by which such competencies can be objec-





tively assessed and verified. Certification is a critical feature of many professions since it requires the codification of good practices and sets explicit standards that professionals must meet. Professional certification programmes can play an important role in promoting the further development of a field's professional standards. They also provide government and nongovernmental agencies and organisations, private firms, courts, and the general public with standards of experience and education for qualified professionals. A certified professional signals that an individual is educated, experienced, and ethical, and can be expected to act in the best interest of the society and the public.

The CEG Certification Programme has been designed to attract professionals from two groups:

1. Professionals engaged in the planning and decision making that addresses needs for both development and conservation in coastal regions. This group includes those who design, administer and evaluate coastal management projects and programmes sponsored by international donors, national, state and municipal government officials and professionals associated with non-governmental organisations engaged in aspects of coastal management and governance.
2. Natural and social scientists and other professionals who wish to contribute effectively to projects and programmes that integrate across the societal, economic and environmental dimensions of management and be effective members of interdisciplinary teams.

The CEG certification programme distinguishes between two levels of certification. Level 1 are senior professionals (senior project managers, senior government officials, senior scientists) who seek to strengthen their abilities to practice the ecosystem approach and integrate the dimensions of governance into their work. Level 2 candidates are associate managers with not less than three years of experience as a contributor to a coastal governance initiative (including junior professionals, community organizers, and extension officers).

#### 4 The Four Pillars of this CEG Certification

Four complementary conceptual frameworks, or pillars, are the basis for the certification programme. First, practitioners certified by the CEG programme recognise that the goals of a coastal management initiative must address both the environmental and the human dimensions of a given locale. The first pillar is therefore ecosystem-based governance (or, the governance of socio-ecological systems) that is emerging as the dominant paradigm for managing natural resources and the environment. Central to this world view is that people are seen as an integral element of ecosystems. An often quoted definition of this approach is as follows: "Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The

goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors" (McLeod et al. 2005).

In practice this requires integrating across traditional sector-by-sector forms of planning and decision making. It also requires the visualization and promotion of nested systems of governance that united actions at the local level with actions on similar issues and goals at the national, regional, and ultimately global scales.

The second pillar of the CEG is a definition of governance that encompasses the values, policies, laws and institutions by which a set of issues is addressed (Juda 1999; Juda & Hennessey 2001; UNEP/GPA 2006). Those holding a GCE certification must be capable of identifying the formal and informal arrangements, institutions, and mores that structure and influence how resources or an environment are utilized. Such analysis documents what behaviours are deemed acceptable or forbidden, and what rules and sanctions are applied to affect how natural resources are distributed and used. In all cases and at all scales the challenges of the Anthropocene (Steffen et al. 2007) urgently call for a paradigm shift from traditional governance to reformed forms of governance that can respond effectively to the challenges of globalized economies, cultures that encourage consumption and waste generation, and climate change. Certified practitioners recognise that there are three principle sources of governance: the marketplace, governments, and the institutions and arrangements of civil society. The manner and the mechanisms by which these three sources of governance interact with one another is complex and dynamic. The certified practitioner has the knowledge and skills to understand how power and influence is allocated among these three sources of governance and how the distribution may need to be altered if coastal stewardship is to be achieved.

While this definition of governance suggests the scope of the knowledge, skills and attitudes of the certified practitioner, the third pillar is also required provides the practitioner with methods to trace the processes of coastal management through the sequence steps that link planning to implementation and evaluation as set forth by (GESAMP 1996) and further detailed by Olsen et al. (1999) and UNEP/GPA (2006). Since many projects fail to make the transition from issue analysis and planning to the sustained implementation of a plan of action, certified practitioners must also demonstrate their ability to use the Orders of Outcomes framework to disaggregate the distant goal of sustainable forms of development into a sequence of more tangible outcomes (Olsen 2003; UNEP/GPA 2006; National Research Council 2008; Olsen



et. al. 2009). This is the fourth pillar of the CGCE programme. Worksheets for these analyses are a feature of LOICZ Reports and Studies No. 34.

## 5 The Six Standards for CEG Certification

The competencies that must be demonstrated by each candidate for the certification encompass an array of knowledge and skills that span assessment and analysis, communication skills, and skills in the design and negotiation of a programme that applies the ecosystem approach.

The order in which the competencies are presented traces the process of characterizing a site or a region, the analysis of the responses of the governance system to ecosystem change through time, to strategic planning, and on to monitoring and evaluation. Leadership, facilitation and mediation are themes that weave through all six competencies. The four pillars of the CEG certification programme are the unifying conceptual frameworks that integrate across the six competencies.

**Competency 1: Analysis of Long-term Changes in the Condition and Use of Coastal Ecosystems.** This competency requires the knowledge and skills to: a) gather, display and analyse information on the trends in the changes in the goods and services generated by coastal ecosystems, in response to natural and human-induced forces; and b) to identify how the interests of different groups and institutions have influenced such trajectories of societal and ecosystem change.

**Competency 2: Analysis of governance structures and processes that encompass values, policies, laws and institutions that determine how ecosystems are conserved and used.** This competence is grounded in the knowledge and skills needed to characterize the defining features of each source of governance (markets, government and civil society), and assess their relative power in shaping responses to changing the condition of the socio-environmental system in a specific locale.

**Competency 3: Leadership required to build the “political will” to design, adopt and implement plans of action that address complex challenges posed by ecosystem change.** The certified practitioner is an effective integrator and communicator who can navigate the process of assembling support for a course of action. This competence addresses abilities to manage the internal dynamics within interdisciplinary teams and the ability to select appropriate strategies to generate the effective participation of a diversity of stakeholders.

**Competency 4: Strength in facilitation, mediation, stakeholder engagement and public education.** In a time of accelerating global change the certified practitioner must design programmes that educate the public and stakeholders about the activities that are changing eco-

systems, the implications of such changes for society, and on the options for addressing the issues of concern.

**Competency 5: Strategic Design of a Coastal Ecosystem Governance Programme.** The design of a coastal ecosystem governance programme and its strategic plan of action requires defining issues and their causes, assessing potential solutions, articulating a vision, setting goals and selecting the partners and strategies by which desired outcomes may be attained.

**Competence 6: Design and implementation of monitoring and evaluation in support of adaptive governance.** The certified practitioner must define the sequence of outcomes that will mark the attainment of a programme's intermediate objectives and progress towards its long-term goals. Progress will be monitored by these markers and, through periodic assessments, the programme's design will be adapted as conditions and learning evolves.

The CEG Programme details the knowledge skills and attitudes that are associated with each of the six competencies.

## 6 The First Class of Certified Practitioners

The refinement and first application of the CEG programme was undertaken through a partnership between the Coastal Resources Center at the University of Rhode Island and EcoCostas, a regional NGO based in Ecuador. In addition to the core funding from LOICZ, contributions to this effort were made by the AVINA Foundation, IHDP and the United States Agency for International Development. Three workshops were held familiarize the candidates for certification with the methods and guide them through a practicum that designed to assess their abilities as practitioners of coastal ecosystem governance. The first workshop was directed primarily at Competency 1 – methods for assembling an analysis of long-term changes in the condition and use of coastal ecosystems and Competency 2 – analysis of governance structures, processes and outcomes. The second workshop centred upon Competencies 3, 4 and 5 that address strategies for building the necessary “political will”, skills in facilitation and mediation and the abilities required to design a programme based on the principles of ecosystem approach. Here the first step was to and lead the candidates through the process of defining a long-term vision for the action arena, identifying current and anticipate future expressions of ecosystem change – including specifically climate change. This analysis set the context for selecting the issues that a future ecosystem based project or programme in each action arena would address. The third and final workshop was directed at refining the designs of new initiatives that emerged in the second workshop with particular attention to Competency 6 – what to monitor and how to feature an adaptive, learning based approach in the





design and the administration of a programme. This final training event featured a transverse analysis across the 12 sites to identify lesson specific to each category of sites and to the portfolio as a whole. The first application of the programme has resulted in the certification of eight senior and five associate coastal managers from eleven nations.

## 7 In Summary

The design and initial application of the CEG certification programme has underscored the value of a performance-based approach to capacity building. A major strength of this effort is that it provides a set of competencies against which the capacity to practices integrating forms of coastal governance can be assessed. As pointed out by the analysis of capacity building for the stewardship of oceans and coasts conducted by the National Research Council (2008) the structure and content of this certification offers a means for combating the fragmentation and ad-hoc nature of many capacity building programmes. It can be adapted to degree granting programmes and offers a way for academic programmes in both the social and natural sciences to integrate their approaches to knowledge generation through the examination of case studies.

Future applications of the CEG programme will require adjusting the trainings and the practicum to the needs and capacities of the applicants. The standards of competency, however, are anticipated to remain constant for the two levels of certification. The programme promotes high standards of competence, professional growth and ethical conduct. It can be offered to both young professionals at an early stage in their careers and senior practitioners with wide experience. The programme offers additional benefits through opportunities for dialogue among peers, analysis of experience in a diversity of settings and networking. An additional benefit of certification programmes is that they set explicit criteria that can be applied when making a capacity building needs assessment for an individual and a programme. The standards also provide a common reference point when comparing across practitioners, programmes and other initiatives that work to apply the ecosystem approach.

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# Land-Ocean Interactions in the Coastal Zone



# INPRINT

- Storm Surges Congress 2010: 2nd Announcement and Call for Abstracts
- Scientific Highlight: Port Cities and coastal flooding – Future Risk Perspectives
- PT1: World Ocean Conference 2009; Human Ecology for an Urbanising World
- PT2: Sediment Dynamics of Chinese Muddy Coasts and Estuaries; Linking Nutrients, Hypoxia, Fisheries, and Fishes
- PT3: Governance of Coastal Ecosystems – seeking quality standards; LOICZ Session IHDP
- CCA: River Deltas sinking due to human activity
- 20th LOICZ SSC Meeting and Dahlem-Type workshop
- New Regional Node in Chennai, India, opening with Deltas Workshop
- Headways in Erasmus Mundus Joint Master in Water and Coastal Management
- Coastal Snapshot: Coastal and Estuarine Research at SKLEC; Research Mission to São Tomé and Príncipe Islands – West Africa
- Miscellaneous: Two new SSC members start in 2009; three new SSC members will join in 2010
- LOICZ website

## Storm Surges Congress 2010 2nd Announcement and Call for Abstracts



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## Contents

LOICZ People	2
Scientific Highlights	3
An Assessment of the Exposure of Large Port Cities to Coastal Flooding: A Global Assessment	3
PRIORITY TOPIC 1	6
World Ocean Conference 2009, Manado, Indonesia	6
Human Ecology for an Urbanising World – International Conference on Human Ecology, Manchester, UK	9
PRIORITY TOPIC 2	12
Sediment Dynamics of Chinese Muddy Coasts and Estuaries	12
Linking Nutrients, Hypoxia, Fisheries, and Fishes: Interim Report from a Workshop supported by LOICZ	13
PRIORITY TOPIC 3	15
A Certification Programme in the Governance of Coastal Ecosystems	15
Workshop "Responding to Coastal and Marine Change: Comparative Assessment of Coastal Governance Initiatives" at the IHDP Open Meeting 2009	18
Cross-Cutting Activities	20
River Deltas sinking due to human activity, says new study by team of LOICZ Scientists	20
LOICZ SSC News	21
New SSC Members welcome on board!	21
New LOICZ SSC Members for 2010	22
20th LOICZ SSC Meeting in Kjeller, Norway	22
LOICZ News	23
LOICZ Dahlem-Type Workshop Global Environmental Change in the Coastal Zone: A Socio-Ecological Integration, Skjetten, Norway	23
Activity Report	24
Ocean Colour Training Course, Zanzibar, Tanzania	24
LOICZ Website	26
LOICZ Regional Nodes	28
LOICZ: South Asia Regional Node and LOICZ Delta Workshop	28
UGC Award for Excellence in Environmental Science	29
IPO Notes	30
LOICZ and the Erasmus Mundus Joint Master in Water and Coastal Management	30
Young LOICZ	35
Interns at the LOICZ IPO	35
Storm surges Congress 2010 – Hamburg	36
2nd Announcement and Call for Abstracts – Storm Surges Congress 2010	37
Programme News	39
New IHDP Project Transitioning to Sustainability through "Knowledge, Learning, and Societal Change"	39
Publications	40
Have you seen	43
Coastal Snapshot	43
Coastal and estuarine research at SKLEC, East China Normal University, Shanghai	43
Research Mission to São Tomé and Príncipe Islands – West Africa	45
Calendar	47