Background and Rationale:

Scientific importance: Coastal lagoons, fragile ecosystems that fringe 13 % of the worlds' coastline, are in the frontline of the battle between the activities of humans on the land and the encroaching oceans and seas. These semi-enclosed systems are also vulnerable to contamination buy pollutants. They maybe overfed by nutrients and become hypoxic, or choked by opportunistic green algae. Coastal lagoons maybe starved of sediment by dams and coastal groynes or chocked by sediment from runoff from cleared land. The IPPC report of 2007 alerted even skeptical scientists to the urgency of climate change issues. However, in the past 2 years, change is accelerating so that consequences of climate change (e.g. sea-level rise) maybe years rather than decades away.

Societal importance: Coastal lagoons are highly productive coastal systems and their shallow harbors and beauty have long attracted human settlement. The lagoons have provided a wealth of shellfish and fish, salt, sand and gravel providing a bounty of ecosystem goods and services. Homes, holiday homes, hotels proliferate around them, and whole cities maybe built on them or around them. They are important cultural centers as well as important natural habitats for water birds and dugongs.

Timeliness of working group: the new data on the rate of climate change and sea-level rise make these issues urgent. Venice is about to install an enormously expensive flood defense system that may well be inadequate in a few years. New discoveries about ecosystem change, tipping points and regime shifts are vital to our understanding of coastal lagoon ecosystems. This is a new opportunity, to address some of the intractable issues that hamper progress in management, conservation and restoration of lagoons alongside mitigation and adaptation to change.

Advantages of the SCOR mechanism: Scientists working on lagoons meet each other fleetingly at big international conferences such as ASLO or CERF where they have proposed a special session, (see list of previous activities of members on page 3), at but there is no time to fully discuss and synthesize the information, especially on a global scale. The SCOR mechanism would bring international scientists together for a week at a time, time enough to prepare papers and chapters together.

Benefits of International Approach: One of the problems of coastal lagoon scientists even finding each others' research is the variety of names that coastal lagoons have. *Ria* in Portuguese, *Lagoa* in Brazilian, *Marismas* in Spanish, *Cienaga* in Venezuelan, *Bays* in Maryland, *Etang* in French, *Laguna* in Italian… This certainly doesn't help in Web of Science searches! The working group will bring together lagoon experts from N. America, S. America, Europe, Africa, Asia, Australia and Central America to work together on a timely synthesis of coastal lagoon science in the context of global change.

Complementary sources of funding: Additional funding may sought from lagoon networks such as the Italian "Lagunet", the Portuguese "Planet" and the Spanish "Red Marismas". The proposed Chairperson of the WG is also Chairperson of LOICZ: Land –Ocean Interactions in the Coastal Zone, core project of IGBP and IHDP, the International Geosphere-Biosphere Programme and the International Human Dimension Programme for research into global change. Additional funding may also be sought from LOICZ, IGBP and IHDP. Whenever possible, the Working Group meetings will be held in conjunction with other meetings to save both travel time and money.

Relevance to other Activities of SCOR and other International Organizations:

Several of the themes that we wish to explore are relevant to some of the other working groups, past and present. Certainly there are links to WG 122 and also to the new Hypoxia working group. The proposed themes and activities are relevant to LOICZ, IGBP, IHDP and IPPC.

Terms of reference: the working group will synthesize information on Coastal Lagoons on a global scale with respect to 4 main themes.

Theme 1: Vulnerability of lagoons to change and multi-stressor effects;

Theme 2: Societal and economic value of lagoon ecosystems;

Theme 3: Human risk and vulnerability to change in lagoons;

Theme 4: Conservation, management, restoration, mitigation, adaptation.

The mechanism will be a series of 4 meetings spaced over the 4 years of the WG "life cycle". The European networks are well established so the WG meetings will be held in Morocco, Brazil, India and Colombia to facilitate the globalization of the network. The meetings will last 5 days and will include a field trip to a local lagoon. The final meeting will lead up to the 1st International Conference on Coastal Lagoons and the inauguration of a Global Association of Lagoon Science (GALS).

Products:

- Four joint LOICZ-SCOR reports with the outcomes of each of the 4 meetings
- Four pamphlets targeted at managers and policy makers, synthesizing the outcomes of each of the 4 meetings and making recommendations related to the 4 themes.
- A special issue of *Hydrobiologia* and /or a special issue of Estuarine and Coastal Shelf Science
- A book on lagoons in the context of global change

Proposed Working Group Composition:

Name	**Gender**	**Geographical representation or Nationality**	**Expertize**	**Membership**
Alice Newton	F	UK	Global change and lagoons	1 Chairperson
William Dennison	M	USA	Human impact assessment and reporting	2 Full
Saida Niazi	F	Morocco	Sea Level change	3 Full
Masumi Yamamuro	F	Japan	Ecosystem change	4 Full
Timothy Carruthers	M	Australia	Ecosystem impact or multi-stressors	5 Full
Purvaja Ramachandran	F	India	Driver- Pressure- State –Impact-Response	6 Full
Elisa Fernandes	F	Brazil	Pollutant dispersion	7 Full

Rutger de Wit	M	France	Aquaculture and fisheries	8 Full
Georg Umgeisser	M	Germany	Disaster Impact and Mitigation, Floods	9 Full
Gianmarco Giordani	M	Italy	Biogeochemical cycles	10 Full
Ana Cristina Cardoso	F	Portugal	Link to policies	11 Associate
Angel Rufaza	M	Spain	Eutrophication impacts	12 Associate
Juan Restrepo	M	Colombia	Erosion and sediment supply	13 Associate
Pierluigi Viaroli	M	Italy	Hypoxia- Dystrophic crises	14 Associate
Sergej Olenin	M	Lithuania	Non indigenous species	15 Associate
Snejana Moncheva	F	Bulgaria	Toxic algal blooms	16 Associate
Ayshen Ergin	F	Turkey	Tourism and leisure, marinas	17 Associate
Magdy Khalil	M	Egypt	Water, mineral, sediment and salt extraction effect	18 Associate
To be determined			Valuing lagoon ecosystem goods and services	19 Associate
To be determined			Human health and risk	20 Associate

Previous activities of the members

September 2003: Special Session on Coastal Lagoons at Estuarine Research Federation Conference "Estuaries on the Edge" Seattle, USA, 14th to 18th September 2003

November 2003: 1st European Lagoon Conference Southern European Coastal lagoons: the influence of River basin- Coastal Zone interactions Ferrara, Italy 10th-12th November 2003

October 2005: 2nd European Lagoon Conference, Klaipeda Lithuania 4-9 Oct. 2005

June 2006: workshop on Coastal lagoons Research and Management in the International symposium "Research and Management of Eutrophication in Coastal Ecosystems" 20-23 June 2006 in Nyborg, Denmark

November 2007: 1ST LAGUNET Conference, 3rd European Conference on Lagoon Research at Naples, Italy 19-23rd November 2007

May 2009: LOICZ crosscutting workshop on Coastal Lagoons, Rabat (Workshop Co-organizer)

Planned activity:

December 2009: 4th European Conference on Lagoon Research, 14-18 Dec. Montpellier, France http://www.ecolag.univ-montp2.fr/lagoon-conference

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