

# EMECS

No. 31

N E W S L E T T E R

## EMECS9 Message from Dr. Robert Summers

Steering Committee Co-Chair Deputy Secretary, Department of the Environment, Maryland



### Global Summit on Coastal Seas

August 28-31, 2011

Baltimore, Maryland, USA

Please make plans now to submit an abstract and attend the 9th international conference on the Environmental Management of Enclosed Coastal Seas, EMECS9 to be held in Baltimore, Maryland, USA on August 28-31, 2011. The theme of EMECS 9 is: "Ensuring Accountability and Effective Communication for Successful Integrated Management of Enclosed Coastal Seas", which is simply stated in the conference logo: "EMECS9 Managing for Results in our Coastal Seas." The conference will truly be a "Global Summit on our Coastal Seas", bringing experts from around the world together to share experiences and learn about more effective approaches to restore and protect our coastal seas, which are vital to our economies and the health and well-being of our citizens. Experts in coastal science and policy, members of government and non-governmental organizations at all levels, representatives of business and industry, journalists, students and teachers, members of international organizations involved in coastal and marine management and others with an interest in the ecology, economy, and culture of coastal seas will not want to miss this opportunity to learn and share what is happening around the world to restore and improve our coastal seas.

EMECS9 is being held in Baltimore Maryland in the heart of "Chesapeake Bay Country". The Chesapeake Bay restoration effort has always been a leading example of how the United States is addressing coastal zone pollution and ecosystem restoration. Today Chesapeake Bay is the focus of an unprecedented shift to a much more aggressive restoration approach that requires us to meet water quality goals on a legally prescribed time line by setting and achieving specific 2-year "milestones" designed to hold the federal, State and local government, businesses, farmers and citizens accountable for meeting specific restoration goals within a specific time frame. This is what we mean by "Managing for Results in our Coastal Seas" and this new approach for "Ensuring Accountability and Effective Communication for Successful Integrated Management of Enclosed Coastal Seas" is what we firmly believe is needed to finally restore Chesapeake Bay after nearly 3 decades of work since the signing of the first Chesapeake Bay Agreement in 1983.

The ninth international meeting on the Environmental Management of Enclosed Coastal Seas (EMECS 9) will focus on scientifically sound, sustainable restoration approaches, ensuring accountability and effective communication for successful integrated management of coastal seas. The conference will draw on lessons and case studies from around the world addressing the following topics such as:

**Accountability:** measuring progress toward sustainable and integrated coastal seas management; tools for measuring progress and reporting results; understanding trajectories of change;

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**Sustainable Approaches:** sharing case studies and lessons learned in coastal seas restoration, pollution prevention, and long-term protection; adapting to climate change; and valuing business and economics in coastal management; Finance and Funding: investigating new, innovative and sustainable ways to support restoration, conservation, and pollution prevention efforts; judicious investment and methods for targeting cost-effective and innovative restoration practices;

**Multilateral Partnerships:** assessing institutional models for shared governance and environmental stewardship; paradigms for multi-lateral partnerships between federal, state, and local government, academic institutions, businesses, and nongovernmental actors; partnerships for improved management of trans-boundary coastal seas;

**Innovative Education and Communication:** integrating web-based technologies with creative and effective classroom and outdoor education; engaging citizens in two-way information exchange and involvement; communicating effectively to increase public awareness and citizen involvement; effective outreach through meaningful storytelling;

**Underlying Science:** the latest science on the development and assessment of sustainable approaches for integrated coastal seas restoration and management.

The conference steering committee of EMECS9 is working hard to develop a program that will engage scientific, government, business and environmental leaders as they convene and share best practices, in scientific and technical sessions, innovative "coffee house" style workshops and site visits that will provide a great forum for sharing best practices from Maryland's efforts in Chesapeake Bay and those of others from around the world. Sessions will bring together leaders and experts from academia, government, non-governmental organizations, business and industry to present best practices and explore new ideas for restoring and protecting our coastal waters in an economically beneficial and sustainable manner. The "coffee house" style workshops will feature panel discussions by experts comparing approaches taken in different coastal seas, such as Chesapeake Bay, the North Sea, the Mediterranean Sea, the Baltic Sea, the Gulf of Thailand, the Bo Hai Sea and the Seto Inland Sea. Special sessions are being planned to look at issues such as the Gulf Coast oil spill, which so clearly demonstrated that the quality of our coastal waters is critical to the economic health and quality of life of our citizens.

Our success in restoring and protecting coastal seas depends on leaders from all sectors working together to ensure that all of our future actions are environmentally and economically sustainable. Everyone that is interested in sustainable management of coastal seas, including both long time EMECS supporters, and those who are newly involved, are encouraged to participate in this important conference and present the results of their own work so that all may learn and benefit from each other.

Please visit the EMECS9 web page at: <http://conference.ifas.ufl.edu/emecs9/index.html> and submit your abstract to join this most important conference for those who are concerned about the world's enclosed coastal seas.



# EMECS International Seminar

Challenges and approaches toward the implementation of The World Integrated Coastal Management (ICM)

On Thursday, July 1, 2010, the International EMECS Center held an EMECS International Seminar at Lasse Hall in Kobe, Japan. The theme of the seminar was "Challenges and approaches toward the implementation of The World Coastal Integrated Management (ICM)." The seminar featured presentations on issues and efforts relating to integrated coastal management in Chesapeake Bay and the Mediterranean, as well as a discussion on how to achieve sustainable development from an economic standpoint. Some 90 government officials, researchers, company representatives and private citizens from throughout Japan attended the seminar.

The seminar began with a presentation by the seminar chair, Osamu Matsuda, Professor Emeritus of Hiroshima University (and Chairman of the Research Institute for the Seto Inland Sea). Professor Matsuda gave the background to and purpose of the seminar as follows.

Integrated coastal management has become the mainstream approach to coastal management worldwide. However, Japan is considerably behind the rest of the world in this regard. Even in Japan, recently the approach has been to consider land and ocean in an integrated manner, but in practice there are a variety of major issues that need to be resolved. In 2007, the Basic Act on Ocean Policy was established and, based on this act, a Basic Plan on Ocean Policy was drawn up in 2008. However, this plan does not clearly state the specific approach that should be taken for integrated coastal management. Because the oceans are greatly affected by rivers and land areas, there is a need for coastal management to consider land and coastal areas together. Traditionally, however, under the administration of the Japanese government, rivers, oceans, agricultural lands, forests and so on have each been managed by different national and local government systems. In the approach taken by the Basic Act on Ocean Policy, individual regions play a leading role and are finally able to manage nearby coastal zones in an integrated fashion. Therefore, even in Japan, integrated coastal management is beginning to be incorporated into local government policies in some cases. In view of this situation, Professor Matsuda said he was very much looking forward to hearing valuable guidance relating to a variety of efforts and issues in integrated coastal management from the ICM experts that were present at the seminar.

Professor Matsuda's opening remarks were followed by presentations by Dr. Robert SUMMERS, Mr. Ivica TRUMBIC and Dr. Peter SÖDERBAUM in that order. Dr. SUMMERS talked about the achievements of the efforts aimed at integrated coastal management that have been conducted for many years in Chesapeake Bay. From a worldwide perspective, Chesapeake Bay is quite advanced in this regard, and can provide lessons for efforts in the Seto Inland Sea and other locations. Following on from that, Dr. TRUMBIC gave a comprehensive presentation on the issues relating to the Mediterranean Sea and the specific activities and efforts that are currently being conducted in this enormous, diverse and complex region that faces significant problems. Finally, Dr. SÖDERBAUM described the "big picture" from a social science perspective. He proposed a deep relationship between society conducting ICM and factors that extend to economic phenomena and human behavior.

Following these presentations, many comments and questions were received from those in attendance, and a lively discussion ensued. This was evidence of the high degree of interest in ICM on the part of seminar participants. The following are summaries of the presentations of each of the speakers.

## Program

### Introduction: Chair: Osamu Matsuda,

Prof. Emeritus,  
Hiroshima University, Japan  
(Chair of The Research Institute for  
the Seto Inland Sea)

### Lecture 1

#### Lecturer: Dr. Robert SUMMERS

Deputy Secretary, Department of  
the Environment, Maryland State (U.S.A.)

**Theme:** "Restriction of Chesapeake Bay:  
Past Success and Future Challenges"

### Lecture 2

#### Lecturer: Dr. Ivica Trumbic

Project Manager,  
UNEP/MAP GEF Strategic Partnership for  
the Mediterranean Large Marine Ecosystem  
(GREECE)

**Theme:** "ICZM of Mediterranean: Current Status and  
Future Targets."

### Lecture 3

#### Lecturer: Dr. Peter SÖDERBAUM

Professor Emeritus,  
School of Sustainable Development of  
Society and Technology,  
Mälardalen University (Sweden)

**Theme:** "Business-as-usual (BAU) is not enough for  
Sustainable Coastal Management:  
On the need to discuss options with  
respect to paradigm in economics and  
ideological orientation"

## "Restoration of Chesapeake Bay: Past Success and Future Challenges"

**Dr. Robert M. Summers,  
Deputy Secretary, Maryland Department of the Environment**

The Chesapeake Bay is the largest enclosed coastal sea in the United States. Located on the East Coast of North America, the Bay watershed covers 64,000 square miles and parts of 6 states and the District of Columbia (Washington, D.C.). The ecosystem of Chesapeake Bay is severely stressed by the impacts of population growth and development, resulting in a large "dead zone" where dissolved oxygen levels are too low to support healthy fish and shellfish populations. Following a 5-year federally funded scientific study of the causes of the observed decline in the health of Chesapeake Bay, in 1983, the States of Maryland, Virginia, Pennsylvania, the District of Columbia and the federal government, represented by the U.S. Environmental Protection Agency signed the first Chesapeake Bay Agreement. That agreement has led to the development of a comprehensive, integrated restoration effort with five broad goals: protecting and restoring living resources, vital habitats, and water quality, promoting and achieving sound land use and stewardship and community engagement.

Together the federal and state governments have spent over \$3.7 billion since 1995 in direct funding on these efforts, the majority of which (47%) has been spent on water quality protection and restoration, including forest and wetland protection and restoration, agricultural nutrient management and land management improvements, waste water treatment plant upgrades, urban/suburban stormwater management, air pollution emission reduction and other measures. This has resulted in some improvement in the health of Chesapeake Bay, but that improvement has been offset by continued population growth and development in the watershed. The latest (2009) science-based assessment of the Bay restoration effort found that although cumulative progress on restoration activities had achieved approximately 61% of stated goals, Bay health indicators for habitat, water quality and living resources had achieved only approximately 38% of those goals. In response to growing public concerns regarding delayed progress on restoration, a number of significant actions have been taken recently. In May, 2009 the Chesapeake Bay Executive Council (governors of all watershed States, Mayor of the District of Columbia, Administrator of U.S. Environmental Protection Agency and Chair of the Chesapeake Bay Commission ) committed to accelerate the rate of progress on the restoration efforts and established aggressive 2-year milestones to measure progress and hold governments, businesses and citizens accountable for meeting restoration goals. Milestones have been developed for all sectors of the restoration effort (agriculture, wastewater, urban/suburban runoff, forest, riparian and wetland preservation/restoration, air pollution control) and will be reported annually to the public. A Presidential Executive Order has been issued directing all federal agencies to review current activities and prepare a report regarding actions needed to ensure federal, state and local governments are aggressively pursuing restoration goals as defined by federal laws. The US Environmental Protection Agency and the Bay watershed jurisdictions are also working to meet a federal court ordered Total Maximum Daily Load (TMDL) and implementation plans by December 31, 2010.

## "ICZM in the Mediterranean: Current Status and Future Targets"

**Dr. Ivica Trumbic  
UNEP/MAP GEF Strategic Partnership  
for the Mediterranean Large Marine Ecosystem (MedPartnership) Athens, GREECE**

The Mediterranean as a semi-enclosed sea presents unique geomorphological, hydrological, climatic and environmental features while at the same time being vulnerable to numerous human activities and resulting pressures. The state of the Mediterranean Sea and its coastal areas has deteriorated in the last several decades as Mediterranean coastal zones have become subject to significant pressures from a range of socio-economic activities, or driving forces. Integrated Coastal Zone Management (ICZM) has been gradually introduced in the coastal planning and management practice in many Mediterranean countries, primarily as an instrument of coping with the growing coastal pressures. In the context of the Barcelona Convention, the Mediterranean Action Plan (MAP), and in particular its Priority Actions Programme Regional

Activity Centre (PAP/RAC), have been since the early eighties developing relevant methodologies and tools, implementing coastal projects, and carrying out training activities in ICZM. These as well as many other efforts have not brought fully satisfactory results, neither in terms of significant improvement of the ecological status of coastal, marine and terrestrial, areas nor in improvement of coastal management practices. New, and structurally more important, impetus for ICZM was needed.

In 2001 the Mediterranean countries decided to start developing Protocol on ICZM. The Mediterranean ICZM Protocol was adopted in January 2008 in Madrid after more than six years of consultations and negotiations. The process started at the time when little chances were being given for its setting off the ground. However, thanks to an elaborate programme of awareness raising, building of technical expertise, communication and direct negotiation, the constituency base for the protocol grew up and the countries of the region finally accepted the idea that the protocol is necessary. At the moment, 3 countries ratified the protocol and a number of other, including EU, are very close to ratification. It is expected that the Protocol will enter into force by the end of 2010.

The main objective of the protocol is to enhance legal capacity of the Mediterranean countries to regulate coastal development on a sustainable basis, and to assist countries in reducing development pressures in coastal areas of the region (tourism, urbanization, industry, transport, fish farming, etc.). The Protocol is very innovative in its endeavors; it is comprehensive, since it covers all important coastal issues, notably the impacts of climate change and other natural risks in coastal areas of the region; it is proactive; and it is integrated, since it is bringing together all pending coastal issues.

## **"Business-as-usual (BAU) is not enough for sustainable coastal management: On the need to discuss options with respect to paradigm in economics and ideological orientation"**

**Dr. Peter Söderbaum**

**Professor Emeritus, School of Sustainable Development of Society and Technology,  
Mälardalen University, Sweden**

'Integrated Coastal Management' and 'Integrated Water Management' (even 'Sustainable Development') belong to a category of buzzwords that play a role in the development dialogue. Such buzzwords can be interpreted differently and thereby used for different purposes. This means that we have to distinguish between different interpretations. When making interpretations, individuals as actors refer to their mental and ideological maps.

Integrated Coastal Management (or Sustainable Development) may be interpreted in business-as-usual (BAU) terms; as a plea for modification of the present political-economic system in specific ways or perhaps as a recommendation to radically change the present political-economic system.

In my presentation I will focus on what appears to be dominant mental maps and ideological orientations among influential actors as well as competing views. A 'sustainability economics' will be proposed as an alternative to dominant neoclassical economics. Similarly, the related dominance of neo-liberalism among ideologies will be challenged in favor of competing ideological orientations. Institutional arrangements follow more or less directly from dominant view of economics and dominant ideology.

It is argued that management of land and water in coastal regions cannot be based exclusively on a BAU-philosophy. The unsustainable trends are so many and serious that the broader issues of thinking patterns and ideological orientations have to be brought into the picture.

## Sustainable Development Strategy for the Seas of East Asia: An Update on Implementation

Dr. Chua Thia-Eng, chair of the Partnership Council of the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and an internationally recognized authority on integrated coastal management (ICM), provided information on the "Sustainable Development Strategy for the Seas of East Asia (SDS-SEA)."

PEMSEA is an organization that was established to strengthen cooperation among national and local governments, NGOs, research institutions and other organizations, in order to promote development in East and Southeast Asian ocean regions that is in harmony with environmental preservation. The Japanese government (specifically, the Ministry of Land, Infrastructure, Transport and Tourism) has been a member since 2002. The International EMECS Center has been a non-Country Partner of PEMSEA since 2008.

**Dr. Chua Thia-Eng**  
**Chair, Partnership Council,**  
**Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)**

### Sustainable Development Challenges

The Seas of East Asia which comprise six large marine ecosystems (Yellow Sea, East China Sea, South China Sea, Sulu-Celebes Seas, Gulf of Thailand and Indonesian Seas) have a total coastline of 234,000 km, a sea area of 7 million km<sup>2</sup> and 8.6 million km<sup>2</sup> of watersheds and are drained by major river systems such as the Yangtze, Yellow, Mekong and the Red river. The rich river-basins and coastal seas support no less than 30% of the world's coral reefs and mangrove wetlands as well as other inland, coastal and marine ecosystems which collectively sustain about 40% of world annual fishery production and a global center of marine biodiversity.

With rapid increase of coastal population and economic activities over the last 5 decades, the productive ecosystems of the East Asian Seas region are under enormous human interference manifested by habitat conversions, coastal reclamations, pollution, and over exploitation of natural resources. These are largely due to policy and management failures in harmonizing coastal and marine development with adequate protection of the functional integrity of the inland, coastal and marine ecosystems. In short the unrestrained pursuit for GDP growth and the lack of comprehensive, strategic planning for economic and environmental sustainability have resulted in the loss or impairments of the natural functions of these ecosystems.

Like any ecosystems of the planet earth, the rich ecosystems of the seas of East Asia ensure a sustainable supply of human basic needs (oxygen, freshwater and food) and other essential provisional services (e.g. energy, medicines, transport, recreation) as well as regulatory services (e.g. weather condition, cleansing functions, nutrient and carbon cycles, trophic level). Unfortunately, the seas of East Asia are also subject to the impacts of climate change (e.g. sea-level rise, ocean acidification) and coastal urbanization (e.g. changing population distribution, changing consumption and use patterns) which are further aggravated by the concentration of human activities in coastal lowlands and adjacent waters. These might undermine the regulatory and provisional functions of the ecosystems therein.

### National and regional initiatives

Realizing the threats of unsustainable development, several countries of the seas of East Asia (China, Japan, North and South Korea and countries from Southeast Asia) developed the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) over a three years period (2001-2003) and endorsed its implementation through the Putrajaya Ministerial Declaration of 2003 in Malaysia. The SDS-SEA was initiated by a GEF/UNDP/ IMO project on building "Partnerships in environmental management for the Seas of East Asia" (PEMSEA) which aimed at strengthening the capability of the region in coastal and ocean governance. The Project also facilitated the development and adoption of a regional vision, strategies and action programs to address the prioritized common environmental and sustainable development problems of the region.

The 227 action programs of the SDS-SEA are based on 6 strategies and 20 objectives with focuses on: (a) sustainable use of coastal and marine resources, b) preservation of pristine habitats and areas of ecological, social or cultural significance, c) protection of ecosystems, human health and society from risks, d) development of economic activities whilst safeguarding ecological values, e) implementation of international instruments relevant to coastal and marine sustainable development and f) communication with stakeholders to raise public awareness, strengthen multisectoral participation and obtain scientific support (SDS-SEA pg 46). These action programs are expected to strengthen coastal and ocean governance, integrate and streamline sectoral policies, encourage integrated planning and management, promote information sharing, create informed public, build sustainable financing and strengthen capacity development.

The SDS-SEA is a working strategy that ensures implementations at all levels of the government by putting in place

the basic policy and management fundamentals for proactive response to environmental and sustainable development challenges. Participating countries are encouraged to develop the needed national or local coastal or marine policies, undertake integrated land-and sea use planning (or marine space planning) and management, and develop risk -based specific action programs that are based on the specific socioeconomic, political, ecological and cultural characteristics of the concerned areas. The implementation of the 20 objectives shall enable the countries to fulfill its international commitments related to environmental protection, implementation of chapter 17 of agenda 21\* and the Plan of Actions of the World Summit for Sustainable Development. More specifically, it addresses the five broad categories of risk concerns: (i) natural and man-made disasters, (ii) habitat destruction and loss of biodiversity, (iii) eutrophication and contamination of waters quality, (iv) loss of livelihoods and food security concerns; (v) degrading freshwater supply, shortage and misuse.

\* Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources

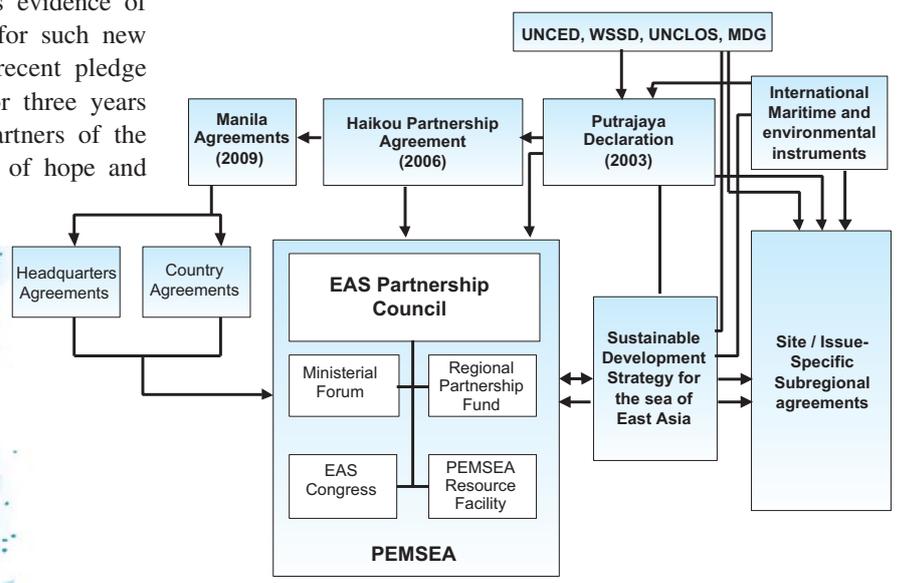
**PEMSEA and SDS-SEA**

Through the Agreement of the Ministerial Meeting at Haikou, China, the concerned countries endorsed PEMSEA as the regional coordinating and operating mechanism for the implementation of the SDS-SEA. In addition, 3 countries (viz: China, Japan and RO Korea) continue to provide annual financial support to PEMSEA for strengthening its coordinating and implementing capacity while the Government of the Philippines expanded its support by providing a new annex building to its then PEMSEA office. The GEF on the other hand endorsed a third phase of the regional project (2008-10) to allow the countries to develop the necessary national policy and action programs to initiate and implement the action programs of the SDS-SEA.

In November 2009, PEMSEA participating countries have taken a further step by recognizing PEMSEA international legal personality which effectively transforms PEMSEA from an UN-based project into an international organization with focus on regional coastal and ocean governances. The recognition of PEMSEA’s legal status shall strengthen PEMSEA’s operational capacity in the implementation of the SDS-SEA. Countries have begun to use PEMSEA as a regional platform for bilateral and multilateral cooperation. For example, the Philippine- China Joint Action Plan for Strategic Cooperation signed in October 2009 stated that both countries will work cooperatively toward the implementation of the SDS-SEA and will continue to provide financial and technical support to PEMSEA Resource Facility.

At its Third governing council meeting at Dandong, China in July 2010, PEMSEA countries made efforts to put in place a five year target-specific action programs not only to take stock of its current stage of progress in the implementation of the SDS-SEA but also in a more systematic and coordinated manner in addressing the mounting transboundary environmental challenges.

Unlike the conventional treaty-based regional cooperation of other regional seas, countries of the region have chosen a less legally binding mechanism for addressing their common transboundary problems. The SDS-SEA provides the political and technical framework for concerned countries to develop their priority actions programs. The voluntary financial contributions by developed (Japan and Korea) and developing countries (China and the Philippines) to support PEMSEA and the implementation of the SDS-SEA is evidence of the viability of and political commitments for such new model of regional cooperation. The most recent pledge of financial contribution of US\$100,000 for three years from one of the less developed country partners of the region, Timor Leste, adds to the testimony of hope and commitments in SDS-SEA implementation.



PEMSEA Partnership Operating Arrangements for implementing the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA): A political and governance framework for regional and interagency cooperation (modified from Chua et al., 2008)

# CAPaBLE Training Report

The International EMECS Center and Kobe University Research Center for Inland Seas, as co-host partner, received a grant from the Asia-Pacific Network for Global Change Research (APN) to conduct a project under its CAPaBLE Programme entitled 'Capacity Building of Biodiversity Research in Coastal Zones of the Asia Pacific Region: Phycology Taxonomy Analysis Training Using Genetic Markers'. Aiming to provide capacity building/training for young researchers from developing countries in Southeast Asia, the project is to be carried out over a period of three years from 2010 to 2013. In FY2010, the training program held from July 2 to July 13, 2010 was attended by six trainees from five countries.

## Title of the Training Program

Capacity Building of Biodiversity Research in Coastal Zones of the Asia Pacific Region: Phycology Taxonomy Analysis Training Using Genetic Markers

## Purpose

The introduction of alien macroalgal species associated with the globalization of marine transportation, fishery activities and global climate change has become more frequent and is a considerable threat to local coastal ecosystems. However, the traditional taxonomy of marine macroalgae, morphological analysis, is not expected to work properly, as there are very few trained macroalgal taxonomists in most countries in the Asia-Pacific region. (Such research requires a thorough knowledge of algal taxonomy and an extensive period of experience to enable precise identification.)

However, it is recognized that using DNA sequence data of slowly evolving gene regions can help identify the preliminary classification of samples in higher taxonomic ranks (e.g. rbcL sequences for order and family level), and that of higher evolving genes (e.g. mitochondrial genes and their non-coding regions) and can provide information for generic and species level identification.

Through the above DNA analysis, the project is aimed at developing the knowledge and experience of macroalgal taxonomy among young researchers, providing them with the precise identification skills to distinguish native and alien seaweed species in the Asia-Pacific region.

## Outline of the Program

Taxonomy is regarded as one of the bases of Biodiversity, and is a prerequisite in establishing certain objective standards to identify any alien species, together with conventional morphological approaches. In this sense, the methodology for identification using genetic markers is recognized these days as reinforcing the shortcomings of traditional approaches.

The training program enabled trainees to obtain the skills of taxonomy identification with genetic markers, and aimed to contribute to the United Nations Convention on Biodiversity (UNCBD). Trainees were divided into three groups for their individual technical training: Research Center for Inland Seas, Kobe University; Faculty of Science, Hokkaido University and Faculty of Marine Biosciences, Fukui Prefectural University.

## Training Schedule

July 3 (Sat)	Arrival at Kobe University
July 4 (Sun)	Introductory Meeting (Venue; Z-201, Faculty of Science, Kobe University) Morning: Welcoming remarks, introduction of the participants, Outline of the program (Dr. Kawai, Kobe University, EMECS) Afternoon: Lectures on the taxonomic study of macroalgae using molecular markers and morphology. Closing Remarks and departure for host laboratories
July 5 (Mon) - July 10 (Sat)	Practical Training at each host laboratory (Kobe University, Hokkaido University, Fukui Prefectural University)
July 11 (Sun)	Travel to Kobe University
July 12 (Mon)	Summing up (Venue: Takigawa Memorial Hall, Kobe University) Morning: Reports from each of the trainees on their achievements and perspectives of future research programs (all participants) Afternoon: Comments from instructors and the invited commentator, Dr. Chirapart, Kasetsart University, Thailand. General Discussion, Closing Remarks, Farewell Reception
July 13 (Tue)	Participants depart



1st day :  
Trainees at the introductory meeting

**Trainees (6 persons)**

Ms. Han XIAOTIAN

(Institute of Oceanology, Chinese Academy of Science, China)

Ms. Minhthanh Thi NGUYEN

(Institute of Biotechnology, Vietnamese Academy of Science and Technology, Vietnam)

Ms. Anchana PRATHEP (Prince of Songkla University, Thailand)

Ms. Woan-Shien NG (University of Malaya, Malaysia)

Ms. Soradakorn PHIMLA (Kasetsart University, Thailand)

Mr. Roike Iwan MONTOLALU (Sam Ratulangi University, Indonesia)



Laboratory Training at Kobe University

**Training Sites & Instructors**

- 1) Kobe University Research Center for Inland Seas: Prof. Kawai, Dr. Hanyuda, Dr. Kurihara  
Trainees; Anchana PRATHEP and Woan-Shien NG
- 2) Hokkaido University Faculty of Science: Prof. Horiguchi, Prof. Kogame  
Trainees; Han XIAOTIAN and Minhthanh Thi NGUYEN
- 3) Fukui Prefectural University Faculty of Marine Biosciences  
Trainees; Soradakorn PHIMLA and Roike Iwan MONTOLALU

**Comments from a Trainee; Woan-Shien NG (University of Malaya, Malaysia)**

In my opinion, this training program provided a very good approach to training and providing the representatives from each country with new knowledge. As the first attempt in promoting a network based on molecular analysis in a way that is complementary to the traditional taxonomy group, I think the training was carried out very successfully. During the training, we exchanged new information, with great collaboration among the participants. The knowledge we obtained is important for us to pass on to new students, as well as to build up the next generation of seaweed taxonomists in each university and country.

Although the training was short in terms of obtaining good results for data analysis, a basic knowledge of molecular analysis was passed on as a result of the intensive daily one-on-one training. Optimization of each process in molecular analysis normally takes more time than expected or estimated. To this end, I would like to suggest an extension of the period of training to one month, so as to achieve more complete training in data analysis. I believe that data analysis and tree interpretations are crucial for producing a better discussion on the results obtained.



Group Photo: Trainees with their certificates, instructors and organizers

**APN profile**

The Asia-Pacific Network for Global Change Research (APN), established in 1996, is a network of 22 member governments in the Asia-Pacific whose vision is to enable countries in the region to successfully address global change challenges through science-based response strategies and measures, effective science and policy linkages, and scientific capacity development. Its growing strength lies in its uniqueness to facilitate underpinning scientific research and capacity building that is systematically targeted for the needs of the region as identified by its government-appointed national Focal Points and scientists who, together, develop the science and institutional agendas of the APN. As an inter-governmental network, APN supports regional cooperation in global environmental change and sustainable development issues relevant to the region, particularly in developing countries through research, capacity building, and networking activities. APN strengthens appropriate interactions among scientists and policy-makers and provides science-based input to policy decision-making and scientific knowledge to the public. The network also improves the scientific and technical capabilities of nations in the region, including the transfer of know-how and technology. By cooperating with other global change networks and partner organisations, APN tries to harmonise the research and capacity building endeavours that it sponsors with those conducted in on a global-scale.

## Science and Policy Trends (5)

**Toward a health estuary: an environmental challenge from high to low turbid estuarine setting**

**Dr. Zhongyuan Chen**  
State Key Laboratory of Estuarine and Coastal Research,  
East China Normal University, Shanghai

Estuary of the world is densely populated and estuarine wetlands provide invaluable environmental and economic services to our mankind. A health estuary is the highest goal of our human society. The recent concerns on the estuarine ecological degradation have been raised, in particular considering the dual pressures from intensifying human alteration and global climate variability. For example, the EMECS-8 international conference 2008, Shanghai provides an updated forum for all to address such issues regarding the river-basin and estuarine harmonization (Chen et al., 2010).

Estuary links the drainage basin and the sea. They are also an ecological and sedimentological filter in which alterations of catchment surface processes are recorded. The impacts from intensive land-use because of increasing population pressure are mostly prominent in most developing countries, such as in the Asia mega-estuaries, including the China's Yellow and Yangtze River estuary, the Vietnamese Mekong River estuary and the Bangladesh Ganges-Brahmaputra River estuary. Increasing population of the catchment serves as a dynamic drive to change the land surface, i.e. from forested land to industrial and agricultural one. Of note is that there has been an increasing population in the Yangtze catchment from nearly 200 million to about 400 million in the Yangtze River catchment in the last 50 years, and also from less than 50 million to 100 million people in the last decades in the Mekong River catchment. This has directly resulted in the change of land-use, leading to the threat while approaching a health estuarine ecosystem.

There has been an obvious change in the estuarine ecosystem through reducing sediment load from the upstream due to catchment dammings in the last decades. Presumably, water turbidity has measurably increased in some estuaries as a result of land clearing upstream in the past years, it is however that it has decreased markedly as a result of damming. Large Asian estuaries, including the estuaries of the Yellow (Huanghe), Yangtze, Red (Song Hong), Mekong, Chao Phraya, Irrawaddy, Ganges-Brahmaputra, and Indus rivers, are all impacted by rapidly increasing human populations and rapid economic growth along the estuaries and throughout the catchments. Dams upstream have significantly cut down riverine sediment load into the estuary, resulting in decreased suspended sediment concentration (SSC), which in turn modifies the geo-biochemical properties of the estuaries. Within the estuaries themselves the wetlands are increasingly degraded from direct human impacts. As a result of decreased SSC and degraded estuarine wetlands, the ecological and economic function of these estuaries is weakening, and this leads to decreased ecosystem services provided by the estuaries to the growing human populations. However, this does not mean the reducing human input into the estuary, instead, a dramatic increase in the total amount of pollutants, including dissolved and non-dissolved, or organic and non-organic components.

A schematic Figure 1 attached here is to especially illustrate the processes and consequences of an estuary changing from high to low-turbid pattern under the dual pressures. It is much likely that this is causing our estuary to be acidified and thus to harm the marine primary productivities and to disconnect our web-food, now and in the recent future. The noticeable example of this change is given to the Nile River estuary, where the runoff has been totally under control and sediment flux is almost none in the coastal-estuarine waters. However, the water quality in the coastal and estuarine waters has been largely degraded due to increasing agricultural and industrial inputs (Chen et al., 2010). Of note, there are many mega-rivers in

developing countries that have been damming and they all seem to suffer from the environmental threats from reduced self-assimilation due to low turbid setting.

Yet the study of changes in estuarine ecosystem in association with from high to low turbid physical setting remains in a scientific vacuum. In particular, we have known a little about the influences of such a background change in relation to socioeconomic development and ecological service values. Science is now starting to answer the question "How does estuary respond to such a physical change". It is becoming apparent for our coming studies that they should link physical and geochemical fields and associated integrated river basin-estuarine management. To approach a health estuary as one of our human destinations needs to minimize side effects arising from intensive land-surface modification and the climate change. An effectively integrated management by using all means of social and natural scientific knowledge is necessary to help solve the relevant issues in coming days.

## REFERENCES

Chen, Z., Yanagi, T., and Wolanski, E. (eds). 2010. EMECS8 - Harmonizing catchment and estuary. Estuarine Coastal and Shelf Science (Special Issue), 86(3), 1-534.

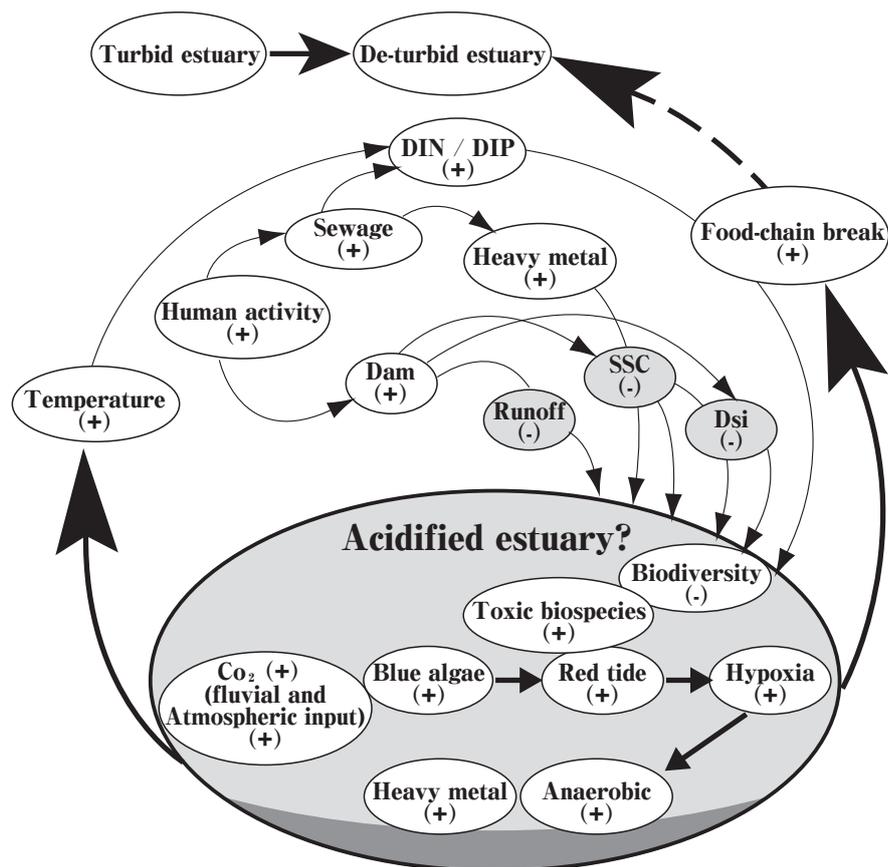


Figure 1. A schematic diagram illustrating the challenge of an estuary from high to low turbid physical setting

# ABOUT EMECS9

## Venue and Accommodations:

### Baltimore Marriott Waterfront

700 Aliceanna St, Baltimore, MD 21202-4339 (410) 385-3000

### Group Rate Information

\$144.00 per night (plus state and local taxes), for up to 2 people in a room.

Please find the detailed information in web site: <http://conference.ifas.ufl.edu/emecs9/site.html>



## Registration Fee:

MEETING ATTENDEE FEE	Registration Fee	Registration Deadline
Early Bird Discounted Registration	\$400	By June 15, 2011
Regular Reduced Registration	\$450	By July 22, 2011
Late Registration	\$500	AFTER July 22, 2011
COLLEGE STUDENT ATTENDEE FEE	Registration Fee	Registration Deadline
Early Bird Discounted Registration	\$200	By June 15, 2011
Regular Reduced Registration	\$250	By July 22, 2011
Late Registration	\$300	AFTER July 22, 2011

### What Does the Registration Fee Include?

#### Conference & Student Attendees:

The EMECS 9 registration fee provides full participation in the conference including registration materials; morning, mid-day and afternoon refreshments, Sunday's Welcome Reception, and Tuesday's Closing Dinner Banquet.

## Tentative Program:

Date	Day 1	Day 2	Day 3	Day 4
	August 28 2011 (Sun)	August 29 2011 (Mon)	August 30 2011 (Tue)	August 31 2011 (Wed)
<b>Morning</b>	Conference Introduction Concurrent Sessions	Keynote Plenary Session, Concurrent Sessions	Concurrent Sessions	Concurrent Sessions, Panel Session Reports, Conference Declarations, Conference Concludes
<b>Afternoon</b>	European Panel session, Concurrent Sessions	Chesapeake Bay Panel session, Concurrent Sessions	Asian Panel session, Concurrent Sessions	Field Trips (Additional Educational tour fee USD65 required)
<b>Evening</b>	Welcome Reception		Closing Dinner Banquet	

\* Please check updated information in EMECS 9 website. <http://conference.ifas.ufl.edu/EMECS9/agenda.html>

\* Special sessions will be held as well.

### Call for Articles

Contributions from readers (reports of research on enclosed coastal seas, conference information, etc) would be greatly appreciated.

### International EMECS Center

DRI East Bldg. 5F 1-5-2, Wakinohama-kaigandori, Chuo-ku, Kobe 651-0073, JAPAN

TEL: +81-78-252-0234 FAX: +81-78-252-0404

URL: <http://www.emecs.or.jp> E-mail: [secret@emecs.or.jp](mailto:secret@emecs.or.jp)