

# EMECS

## NEWSLETTER

### International EMECS Center Certified as a Public Interest Incorporated Foundation

The International EMECS Center was registered as a Public Interest Incorporated Foundation on March 1, 2012, after its authorization by the Cabinet Office in February. We are pleased to announce that Dr. Motoyuki Suzuki was inaugurated as the new President of EMECS Center for its

fresh start. On this occasion, we would like to extend our heartfelt appreciation to Dr. Yoichi Kaya, the former President, for his great contribution to EMECS Center so far since 2002.

### Message from the New President

#### On Assuming the Presidency of the International EMECS Center

Motoyuki Suzuki

#### The Past 20 Years

In 1990, recognizing that environmental deterioration in enclosed coastal seas had become a serious problem, common to the Seto Inland Sea, Chesapeake Bay, the Baltic Sea, the Mediterranean and other enclosed coastal seas throughout the world, representatives from these areas came to Kobe, Japan for the 1st International Conference on the Environmental Management of Enclosed Coastal Seas (EMECS).

At the time, the world was undergoing a variety of major upheavals. Perhaps most emblematic was the breakdown of the simple bipolar structure of "East Versus West" that had taken the lead in the international community up to that time, namely the clash of values led by the United States and the former Soviet Union (in other words, the competition between market-based economies and planned economies), and the subsequent transition to the age of market-based economies. This was symbolized by the fall of the Berlin Wall in 1989.

At around the same time, in 1988, Dr. James Hansen of the National Aeronautics and Space Administration (NASA) sounded the alarm regarding the advance of global warming in testimony before the U. S. Senate Energy and Natural Resources Committee. In that same year, the Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations.

In 1992, the United Nations Conference on Environment

and Development (UNCED) was held in Rio de Janeiro, and the United Nations Framework Convention on Climate Change (UNFCCC) was adopted. Subsequently, there were various discussions about how to prevent global warming, and how to adapt to the rise in temperature that was already in progress. As yet, however, these discussions have not produced a consensus regarding countermeasures on a global scale.



Yet in the 20 years leading up to the "Rio+20" conference in 2012, the world's population has increased 30%, and world production has grown by approximately 2.5 times. In this way, human activity on our finite planet continues to increase rapidly in terms of both volume and density. As is well known, the increase in the concentration of carbon dioxide in the atmosphere, which is the cause of climate change, is the result of the consumption of large quantities of fossil fuels that support the expansion of human activities.

#### The Oceans and Humanity

The problem of climate change resulting from the expansion of human activities will have a profound impact on the oceans as well. This has led to many different concerns that include

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the rise in the level of the oceans, increases both in seawater acidity and temperature that will cause changes in ocean ecosystems, and so on. At the same time, the population increase in coastal zones and other factors will result in greater and greater pollutant loads flowing directly into the oceans from land areas.

The ocean has been the mother of all life on Earth. The oceans contain various ions that constitute essential elements that are indispensable for the development of living organisms. Moreover, on this "planet of water," environments have been created on land where living organisms can survive, and it goes without saying that the oceans have played a major role in that process as well.

The oceans receive solar energy and generate water vapor. This water vapor condenses in the air overhead to form clouds, some of which produce rain that falls on land. This water cycle creates a balance of energy on Earth, thereby producing the temperature environment that is suitable for life. Moreover, the water that is produced by evaporation and condensation from the oceans is fresh water, as opposed to seawater, and it is the foundation for all life on land. The circulation of water that is such a fundamental presence on Earth also functions to cleanse the land and wash away the various substances produced by human activities into the oceans. Ultimately, this means that human beings have caused the ocean to become a receptacle for wastes.

It is the coastal zones that are most severely affected by this pollutant load. Therefore, enclosed coastal seas can be considered to be the quintessential model of coastal zones.

### The Oceans and Coastal Zones

The oceans teach humanity both the severity and benevolence of nature, and they are also valuable entities that support the source of life of Earth. As a first step toward developing respect for the ocean and preserving its crucial mechanisms, it is essential to recognize the need to maintain healthy ecosystems in the coastal zones in particular. The oceans are enormous — so vast that they were once thought to be limitless, and the impact of human activity on them was once thought to be limited. Now, however, we know that there are limits to the capacity of the oceans. Ultimately, the oceans can be thought of as large enclosed coastal seas bordered by land. The substances that flow into these enclosed coastal seas accumulate, undergo various changes and eventually affect ocean systems.

Let us take one example, that of nitrogen, an element that is omnipresent. Up to now, restrictions on the emission concentration of nitrogen in the water that was discharged from cities and residential areas on land and so on, or total emission controls, were imposed in order to prevent eutrophication in enclosed coastal seas (which constitute water regions that are located near residential environments). These were no doubt effective as localized measures. However, we also need to consider the circulation of nitrogen on a wider, global scale.

The active nitrogen that can be used by living organisms on earth — in other words, ammonia and nitrogen oxides — is produced from inert gaseous nitrogen that is present in the atmosphere in large quantities, through the workings of

nature in the form of biological nitrogen fixation by Rhizobium bacteria, some types of algae and so on, and is also thought to be produced through physical means by lightning, forest fires and so on. In this way, the active nitrogen compounds produced from inert nitrogen gas in the atmosphere supported biological activity and resulted in the establishment of stable natural ecosystems. Beginning in the 20th century, however, industrial nitrogen fixation methods were developed. This caused the fixed quantity to increase dramatically, particularly in the latter half of the 20th century, and it is now estimated to exceed the quantity produced in the natural system. Naturally, industrial nitrogen fixing is used in the manufacture of nitrogen fertilizers, and it has been used to increase food production to support the increase in the population. Ultimately, however, a considerable proportion of the amount flows from land areas to ocean areas.

### The Need for More Active Commitment

The load on the oceans will undoubtedly continue in various forms. Various chemical substances have come to be used in human activities, and the physical alteration of coastal zones by human beings will also undoubtedly have an effect.

Various pollutant loads are swept away from land to sea through rivers, sewerage systems and other means. In order to maintain the health of ocean regions, it will be essential to have a good understanding of the diversified characteristics that are specific to the region, including the entire river basin in that region — in other words, the generation and transport of the load from various human activities on land, the status of ocean regions and so on — and then to establish comprehensive control methods that have more universal application.

Based on this perspective, the International EMECS Center considers it essential for scientists, policymakers, the private sector and citizens from a wide range of fields both at home and abroad to come together to exchange information and ideas aimed at creating healthy and sustainable ocean environments in enclosed seas, coastal zones and the open sea. To ensure that these activities will continue, it is also important to encourage young people to join in these efforts for the future conservation of our mother ocean.

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## EMECS10–MEDCOAST2013 Joint Conference

Global Congress on Integrated Coastal Management:  
Lessons Learned to Address New Challenges



**Dates:** October 30th (Wed) - November 3rd (Sun), 2013

**Venue:** Grand Yazici Club Turban Hotel, Marmaris, Turkey

**Promoters:** MEDCOAST Foundation, International EMECS Center

**Official Website:** <http://conference.medcoast.net>

### ●Welcome

The year of 2013 will mark the 44th anniversary of the Stratton Commission Report to the US Congress, which is considered by many professionals as the seeding of coastal management efforts that took a global scope in years to come. The Coastal Zone Management Act of 1972 paved the way for the start of coastal zone management programs in the USA and the concept and practice were exported to a number of third countries in the 1980s. However, it took some years for the global dispersion of the coastal management efforts. The Rio Summit (UNCED, 1992) contributed significantly to this effect. For instance, management of coastal zones became a prime target for the Mediterranean in 1995 when the Barcelona Convention was revised and the second phase of the Mediterranean Action Plan was started. The European Union launched the Demonstration Program on Integrated Coastal Zone Management in 1996. Similar significant programs and projects were initiated at other parts of the world in the 1990s. The Global Environmental Facility funded large scale projects in different seas under the priority area of biodiversity that had important coastal management components. Rehabilitation of degraded coastal areas and renovation of coastal cities became important areas of research and development in several industrialized countries. In short, significant experiences from these efforts and lessons learnt have accumulated. Parallel to this interest for the practice of integrated coastal management at global scale, academic institutions have developed various new educational programs and have advanced the human capabilities for addressing coastal challenges. Many tools and instruments, simple and sophisticated, practical and scientific, have been designed and refined for effective integrated coastal management. Several approaches such as “community-based”, “ecosystem-based”, “satoumi” have been developed and applied at different coastal zones. Today, there exist numerous local, regional, national and international projects and programs that aim to either initiate or further develop integrated coastal management along the shores of almost all enclosed seas and oceans.



(Grand Yazici Club Turban Hotel)

Over these years, several new issues have emerged, such as adaptation to climate change impacts and disaster prevention, management and mitigation in the coastal zone. New approaches such as the blue economy have been introduced.

Therefore, it is considered timely to call for a global congress for reviewing the past efforts and experiences on integrated coastal management with the goal of identifying the lessons learnt so that a wisdom can be developed that would lead us efficiently into the future in our pursue for sustainability over the precious coastal areas of the world.

This global congress on integrated coastal management will be the second opportunity for two major conference series, EMECS and MEDCOAST, for convening as a joint meeting. The first joint conference that took place in Antalya, Turkey during 9-13 November 1999, bringing over 500 participants representing 50 countries, was a major success. We expect that the Global Congress on Integrated Coastal Management, organized at a corner of the magnificent Aegean Sea, enhanced by the charms of the famous tourist resort town of Marmaris and environs, enjoying the rich culture and warm hospitality for which Turkish people are well-known will serve as a reference event for the future of ICM. Scientists, experts, managers, planners, policy makers, administrators, resource developers, users and conservationists from all corners of the world, are cordially invited!

## ●Topics of the Global Congress

- A. Coastal systems, Conservation issues
- B. Integrated Coastal Management (ICM)
- C. Coastal management issues
- D. Sustainable development of coastal areas
- E. Coastal engineering, Modeling, Decision support systems, Data management

## ●Registration Fees

Regular Participants	Registration alone	Registration with accommodation (6 nights, Single room)	Registration with accommodation (6 nights, Double room p.p.)
By 31 July, 2013	EURO 500	EURO 890	EURO 800
After 31 July, 2013	EURO 600	EURO 990	EURO 900
Full-time students	Registration alone	Registration with accommodation (6 nights, Single room)	Registration with accommodation (6 nights, Double room p.p.)
By 31 July, 2013	EURO 300	EURO 690	EURO 600
After 31 July, 2013	EURO 350	EURO 740	EURO 650

\*For further detailed information about registration, please visit the official website.

## ●Abstract submission

1. Abstracts for the Global Congress must be submitted to the MEDCOAST Foundation via the Conference official website no later than February 4 (Mon), 2013.

2. The Program Committee and the MEDCOAST Foundation will accept or reject papers based on the information in the abstracts and will assign accepted papers to appropriate poster and oral sessions. The final selection of a paper for inclusion in the conference program and in the proceedings will be made on the basis of peer-reviewing the submitted manuscript.

### Deadline

Abstract submission: February 4 (Mon), 2013

Notification of accepted abstracts:

February 28 (Thu), 2013

Manuscript submission: June 30 (Sun), 2013

## ●Conference Sponsors & Supporters

A large number of organizations have been invited for sponsoring and supporting the Global Congress. The complete list will be announced in the conference bulletin to be issued in August 2013 and the conference website.

## ●Special Sessions

A number of thematic sessions, organized in collaboration with several collaborating institutions, will be included in the conference program.

## ●Commercial Exhibits

A commercial exhibition of sustainable coastal and sea resource management and related facilities, products, systems and services will be held parallel to the Global Congress. Participation by public and private agencies is encouraged.

## ●Social Events

A rich variety of social and cultural events will be included in the conference program. A half-day trip to famous places of Marmaris as a mid-conference activity and a full-day technical trip to a coastal site near Marmaris during the final day of the conference are planned.

## ●Official Website

For the information about participant registration, abstract submission, the conference schedule and others, please visit the Joint Conference official website:

<http://conference.medcoast.net/>

## ●Contact Us

### MEDCOAST Foundation

(Address) Maras Mah. , Kaunos Sok. , No 26, Dalyan  
48840 Mugla - Turkey

(Tel) +90 252 284 44 50 (Fax) +90 252 284 44 05

(E-mail) [medcoast@medcoast.net](mailto:medcoast@medcoast.net)

(Website) <http://www.medcoast.net>

### International EMECS Center

(Address) DRI East Bldg. 5F, 1-5-2, Wakino-  
hama-kaigan-dori, Chuo-ku, Kobe,  
Hyogo 651-0073, Japan

(Tel) +81 78 252 0234 (Fax) +81 78 252 0404

(E-mail) [secret@emecs.or.jp](mailto:secret@emecs.or.jp)

(Website) <http://www.emecs.or.jp/index-e.html>

# EMECS International Seminar

## Integrated Coastal Management (ICM) and Satoumi

The EMECS International Seminar is sponsored by the International EMECS Center as a forum for communicating the most up-to-date information from around the world on the environmental management of enclosed coastal seas in an easily understandable manner. This year, the seminar was held on June 15, 2012 at the Hyogo Kenmin Kaikan in Kobe. The theme of the seminar was "Integrated Coastal Management (ICM) and Satoumi." There are high hopes for the use of the Satoumi concept as an integrated coastal management technique. The seminar featured reports on the current international recognition of Satoumi and similar activities and future directions for the concept, as well as issues relating to integrated coastal management and so on. It also featured a report on the EMECS 10-MEDCOAST 2013 conference, which will be held in Turkey in 2013 on the basic theme of integrated coastal management. The seminar was chaired by Professor Tetsuo Yanagi of Kyushu University, and featured four presentations.



The first presentation was given by Professor Yanagi and was entitled "Satoumi: Current State and Future Prospects." Professor Yanagi talked about previous research and practice relating to Satoumi, focusing in particular on the great success of efforts using the Satoumi concept on the Karawang Coast of Indonesia. In terms of future Satoumi creation, he also pointed out that because natural environments and relevant entities vary widely depending on the region, there is a need to resolve issues that include the question of how to fuse local expertise and scientific knowledge and build ecosystems with restorative capabilities in each coastal ocean region, how to build consensus among diverse stakeholders, governments, scientists and so on, and how to consider and implement activities on the local, regional and national levels.

The second presentation, entitled "Decade of Japanese Practice for Integrated Coastal Management (ICM)," was given by Keita Furukawa, Research Coordinator for Coastal and Marine Affairs in the Coastal, Marine and Disaster Prevention Department of the National Institute for Land and Infrastructure Management, within Japan's Ministry of Land, Infrastructure, Transport and Tourism. The Basic Act on Ocean Policy, which went into effect in 2007, created a legal framework for comprehensive management of coastal zones in Japan. Dr. Furukawa used the example of the Tokyo Bay Restoration Action Plan, which was established in 2001 and implemented concurrently, to report on activities on the national level and those of the Tokyo Bay Restoration Promotion Conference (made up of relevant national and prefectural agencies) pointing out that the plan has been revised as needed and implemented in an adaptive manner. He also pointed out that restoration action plans have also been formulated for Osaka Bay, Ise-Mikawa Bay and Hiroshima Bay, and that trials and preparations are underway in anticipation of full-fledged integrated coastal management, through concurrent environmental monitoring to gather data, coordination with relevant entities and so on.

The third presentation, entitled "Overview of the Social and Environmental Challenges of the Ten Major Rivers," was given by Professor Olli Varis of Aalto University, Finland. Professor Varis asserted that urbanization, food and energy are particularly important major issues facing the ten major rivers in the Asia-Pacific region: the Indus, the Ganges/ Brahmaputra/ Meghna, the Irrawaddy, the Salween, the Menam Chao Phraya, the Mekong, the Song Ha, the Zhu Jiang, the Yangtze, and the Yellow River. He also said that the results of an analysis in which the various factors were divided into six clusters — environment, hazard, society, economy, governance and water quantity / water insufficiency — indicated that the Ganges and Indus are the most fragile and pose a particular problem. In addition, he pointed out that river basins in Asia face major problems due to considerable pressure resulting from major population increase and socioeconomic and environmental fluctuations, and that the water discharged from these river basins into the ocean has a major impact on coastal zones — and that, as a result, coastal zone management in these regions is extremely important.

The fourth and final presentation, entitled "EMECS10 - MEDCOAST 2013 Joint Conference," was given by Erdal Ozhan from Turkey. Professor Ozhan is president of the MEDCOAST Foundation, which will sponsor the EMECS Conference as a joint conference with MEDCOAST. The theme of EMECS 10 will be "Global Congress on Integrated Coastal Management: Lessons Learned to Address New Challenges." Professor Ozhan spoke about the past achievements of both EMECS and MEDCOAST and discussed the status of preparations for the joint conference, which will take full advantage of the strengths of each organization. He also talked about the history and geography of Marmaris, the city where the conference will be held, as well as historical sites in the surrounding area and so on. He noted that the hotel where the conference will be held is an outstanding venue located in a forest of pine trees.

The seminar ended with a concluding session that featured questions and comments from the audience, with Professor Yanagi serving as moderator. With regard to Satoumi, it was pointed out that the aim in particular should be integrated coastal management that includes upstream through downstream regions, and that the participation of local communities is essential. Furthermore, it was pointed out that, before Satoumi can become a self-sustaining activity, the economic problems resulting from the percentage of GNP accounted for by the fishing industry must be resolved, and that other problems also remain, in particular the cost burden required to preserve fishing grounds, the question of how to provide added value to Satoumi, and the issue of how to approach the functions of Satoumi in terms of external economic potential like the corresponding flood control function of "Sato-yama." The seminar came to a close with the recognition of the need to continue to hold seminars like this to consider these issues.

## Science and Policy Trends (6)

## Conflict and Coordination Among International Legal Regimes on Climate Change, Biodiversity, and Marine and Coastal Environment

### --- How Should Geo-engineering Be Regulated? ---

Hisakazu KATO

Professor, Faculty of Law, Teikyo University

Professor Emeritus, Nagoya University

The ever growing evidence of ongoing climate change poses one of the most serious and imminent threats, not only to the well-being and survival of human communities around the world but also to the health of oceans and the marine and coastal ecosystems on planet Earth. Under the UN Framework Convention on Climate Change (UNFCCC), practically all countries of the world, both developed and developing countries alike, have agreed to prepare and implement action plans to limit and reduce their emissions of greenhouse gases (GHGs). More specifically under the Kyoto Protocol, Annex I (developed) countries are required to meet specific emission reduction targets assigned to each country. These targets are to be achieved over a period of 5 years from 2008 to 2012 (“the first commitment period”).

Countries can utilize the capacity of forests and other carbon sinks to absorb and fix or sequester carbon dioxide (CO<sub>2</sub>) from the atmosphere by photo-synthesis, and thereby contribute to reducing the amount of CO<sub>2</sub> in the atmosphere. Thus, enhancement of carbon sinks is recognized as a mitigation measure in the articles of UNFCCC. The Kyoto Protocol goes even further by allowing forestry-related project activities such as afforestation and reforestation to generate emission reduction credits, which may be traded in the international market through the “Clean Development Mechanism (CDM)” or “Joint Implementation (JI)”.

In recent years as the end of the “first commitment period” draws near, many countries, especially Annex I developed countries with specific emission reduction obligations, are faced with the real difficulty of cutting their emissions drastically by conventional methods. Consequently, some countries have turned their attention to a number of innovative methods and technologies often involving rather drastic measures that interfere with natural geo-physical, chemical and biological processes. They are generally referred to as “geo-engineering”.

There are several types of geo-engineering technologies. Two major types of marine geo-engineering currently proposed or actually carried out are: (1) carbon capture and storage, or CCS, which involves capture and recovery (sequestration) of CO<sub>2</sub> from production processes and fuel combustion, and storing it in deep underground mines or sub-seabed geological formations (CS-SSGF); and (2) ocean fertilization (OF), which involves the injection of limiting-factor nutrients or other agents such as iron into ocean waters, thereby stimulating the growth of phyto-planktons, leading eventually to the development of fisheries and at the same time contribute to stabilizing or reducing atmospheric concentrations of CO<sub>2</sub> through photo-synthesis by phyto-planktons, which in turn may also generate tradable emission reduction credits.

Beginning in the late 1990s to early 2000s, a number of CCS projects were proposed and carried out by some countries on a pilot basis. Similarly, scientific experiments began to be conducted on ocean fertilization, mostly by adding iron to seawaters where sufficient amounts of nutrients such as nitrogen

and phosphorous were present but no plankton blooms occurred. From around 2005, however, large-scale ocean fertilization projects/activities began to be planned or carried out by some private business enterprises. Due to many uncertainties that remain, particularly concerning the integrity, effectiveness, and the ultimate fate of CO<sub>2</sub> captured by these projects, serious concern was raised by many scientists, environmental NGOs and other civil society organizations. Pros and cons for allowing CCS as well as OF projects to proceed as planned were discussed, sometimes hotly debated in various international forums including UNEP, UNESCO, ICSU, the Conference of the Parties (COP) to the UNFCCC and the Kyoto Protocol, the Convention on Biological Diversity (CBD), and other treaty bodies. Unfortunately, however, none of these organizations or treaty bodies had the mandate or the means to regulate such activities in international waters. Given this situation, all they could do was to issue a statement of concern.

The important question here is: Are CCS and OF projects/activities consistent and compatible with international law, including the UN Convention on the Law of the Sea (UNCLOS), the CBD, the London Convention and its 1996 Protocol on Ocean Dumping?

UNCLOS is the most comprehensive, all encompassing umbrella treaty covering all fields of international law related to oceans and seas, seawater, seabed, the marine environment, and other marine and maritime affairs. Consisting of a total of 320 articles, it is divided into 15 parts. Part 12 is devoted to the “Protection and Preservation of the Marine Environment”. Under Article 192, States have the obligation to protect and preserve the marine environment. In Article 194, it is stipulated that “States shall take all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source.” Except for these general provisions, the UNCLOS leaves most of the specific details of rights and obligations of states, modalities and procedures for international regulation, to separately concluded individual treaties which deal with particular issue areas or subject matters such as the 1973/78 MARPOL Convention, and the 1972 London Convention on Ocean Dumping.

Consequently, it fell upon the Meetings of Contracting Parties to the London Convention and the 1996 London Protocol to determine whether they had the legal authority as well as the necessary legal means to regulate what kind of geo-engineering projects/activities, and how and to what extent, in accordance with which articles of the Convention or the Protocol?

The issue of CCS was taken up for the first time by the 20th Consultative Meeting of Parties to the London Convention (LC20) in 1998, which decided to “keep a watching brief” on the issue. In 2005 the 27th Meeting of the Parties (LC27) agreed that the London Convention and the 1996 London Protocol are “the appropriate global instruments to address the

implications of CO<sub>2</sub> sequestration for the marine environment”, and decided to convene an inter-sessional working group to develop a menu of options for facilitating and/or regulating CCS. After entry into force of the 1996 London Protocol in March 2006, LC28/LP1 endorsed the “Risk Assessment and Management Framework for CS-SSGF”. The Meeting also considered the formal proposals to amend Annex I to the London Protocol. After a lengthy debate, Resolution LP(1) was adopted, amending the relevant paragraphs of Annex I to allow for dumping and storage of CO<sub>2</sub> streams in sub-seabed geological formations (CS-SSGF), provided that they undergo a rigorous process of environmental and risk assessment.

In 2007, LC29/LP2 adopted the “specific guidelines for assessment of CO<sub>2</sub> streams for disposal into SSGF.” After heated discussions, and despite concerns and protests by many delegations, the draft Resolution LP3(4) to amend Article 6 to allow for “export” or transboundary movement of CO<sub>2</sub> streams, was put to a vote, and was adopted. At the most recent Meeting of LC/LP Contracting Parties held in October-November 2012, the LC34/LP7 endorsed the revisions to the specific guidelines for assessment of CS-SSGF to provide for greater clarity and more details of assessment methodologies and procedures.

The issue of ocean fertilization was first raised by Greenpeace International and the IUCN at a joint session of LC/LP SGs in 2007 in connection with a US company’s plan to carry out large-scale iron fertilization experiment to sequester CO<sub>2</sub> for the purpose of earning CDM credits. Based on similar concerns

expressed by many countries including Japan, the SGs issued a “statement of concern” in July 2007. LC29/LP2 held in November 2007 endorsed the statement of concern; and agreed that the consideration of OF falls under the competence of LC/LP; and to further study the issue from scientific and legal perspectives with a view to its regulation. At LC30/LP3 in 2008, UNEP introduced its report on the current status of OF experiments and the statement of concern issued by CBD.

After an intensive debate on the draft resolution prepared by the WG on ocean fertilization, LC30/LP3 in 2008 adopted a non-binding resolution LC-LP1 (2008) on the regulation of OF activities, limiting them to “legitimate scientific research”, subject to rigorous assessments conducted in accordance with the General Assessment Framework and the more specific guidelines for assessment of CS-SSGF. In the subsequent meetings of LC and LP Contracting Parties, efforts were made to strengthen the nature and authority of this resolution, possibly by adopting a legally binding interpretative resolution or by amending Annex I of the Protocol, or a combination of various other options. LC34/LP7 held in 2012 made further efforts to narrow down the number of options two: Option A and B.

In conclusion, it may be said that the “one family, two instruments” system embodied in the London Convention and the 1996 Protocol continues to evolve toward an integrated and consistent regime of international law to protect the marine environment from pollution and other man-made disturbances.

## Message from the new members of the Scientific and Policy Committee

**Keita Furukawa**  
**Research Coordinator for Coastal and Marine Affairs**  
**Coastal, Marine and Disaster Prevention Department**  
**National Institute for Land and Infrastructure Management**  
**Ministry of Land, Infrastructure, Transport and Tourism, Japan**

It is great honor of me to have been chosen as a new member of the EMECS Scientific & Policy Committee.

My specialty is the restoration of coastal environments based on civil engineering, coastal engineering and hydrology. Targeted ecosystems are shallows, tidal flats, mangrove forests, seagrass beds, coral reefs, environments created by artificial structures and so on. My research methods include numerical calculations and hydraulic model experiments, but I also enjoy conducting on-site monitoring and measurements.

In enclosed coastal seas, people tend to focus on the degradation of water quality and specific measures. However, we should pay attention on the impacts and changes of living organisms and ecosystems. Biological life and ecosystems tend to be localized. This means that even if the average water quality is degraded, organisms may be able to create small habitats if there is a tiny area of suitable environment. My current interest focuses on whether monitoring these subtle aspects of living organisms and

ecosystems will make it possible to detect changes in ocean regions that may not be apparent from water quality alone and may therefore provide positive feedback in terms of ways to improve water quality.

At the EMECS International Seminar that was held in June this year, I gave a presentation entitled "Decade of Japanese Practice for Integrated Coastal Management (ICM), " in which I raised the possibility that the revival of the Edomae (local catch in Tokyo Bay) goby could be seen as a symbol of the restoration of Tokyo Bay environment. This summer, I had asked public to participate a goby catch census. The data amounting to a catch of approximately 9,000 goby between July and September was collected. We are currently conducting an analysis to see whether this can be used as an indicator of the current status of Tokyo Bay.

With this approach, I hope to make my contribution to the activities of the EMECS Center whose aim is the improvement and restoration of enclosed coastal sea environments.

**Tomoya Shibayama**  
**Professor, Faculty of Science and Engineering, Waseda University, Japan**

My specialty is civil engineering, particularly coastal and ocean engineering. I have performed research activities on coastal zone

environments and disaster prevention. In terms of environmental issues, I am interested in studying water quality problems in

Tokyo Bay and other inner bays, the erosion of sandy beaches by waves, changes in the behavior of typhoons due to changes in the climate, and the prediction of future storm surge damage.

Major tsunamis and storm surge disasters have occurred on an almost yearly basis, beginning with the Indian Ocean earthquake and tsunami of 2004. Researchers are currently using field surveys, numerical simulations and hydraulic experiments to study the mechanisms by which coastal zones sustain damage from tsunamis, storm surges and high waves.

In recent years, I have studied disasters that include the Indian Ocean earthquake and tsunami (2004), the storm surge caused by Hurricane Katrina (2005), the Java earthquake and tsunami (2006), the storm surge caused by Cyclone Sidr in Bangladesh

(2007), the storm surge caused by Cyclone Nargis in Myanmar (2008), the tsunami in Samoa (2009), the Sumatra earthquake and tsunami that caused damage to the Mentawai Islands in Indonesia (2010), the Chile earthquake and tsunami (2010), the Great East Japan Earthquake and tsunami (2011), and the storm surge resulting from Hurricane Sandy that damaged New York city and other locations (2012).

From now on, I would like to be particularly active in EMECS efforts relating to environmental conservation and disaster prevention measures in Tokyo Bay and other inner bays in urban regions, as well as changes in coastal damage resulting from changes in the environment.

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**Hiroshi Ono**  
**Executive Director, Northwest Pacific Region Environmental Cooperation Center(NPEC)**  
**Japan**

My name is Hiroshi Ono, and I am the Executive Director of the Northwest Pacific Region Environmental Cooperation Center (NPEC). I have been newly appointed to serve as a member of the Scientific & Policy Committee, starting from this fiscal year.

NPEC is located in Toyama Prefecture, which faces the Sea of Japan. We conduct various environmental activities, including international cooperation, human resource development and research, in cooperation with national and local governments in the Northeast Pacific region (Japan, China, South Korea and Russia). NPEC has been designated as one of the Regional Activity Centers for the Northwest Pacific Action Plan (NOWPAP), part of the UNEP Regional Seas Programme, and implementing marine environmental monitoring using satellite remote sensing as well as coastal environmental assessments concerning eutrophication, harmful algal blooms and marine biodiversity. In addition, NPEC plays a central role in

environmental cooperation among local governments in the Northwest Pacific region serving as the coordinator for the Environment Subcommittee of the Association of North East Asia Regional Governments (NEAR).

I joined then Environment Agency in 1987 where initially I was assigned to the Office for Environmental Protection of the Seto Inland Sea in the Water Quality Protection Bureau. As I was born in a prefecture which borders the Seto Inland Sea, I have a strong personal interest in the environmental protection of the Seto Inland Sea and other enclosed coastal seas.

It is my hope that my experience at NPEC enables me to contribute to the activities of the EMECS Center as a member of the EMECS Scientific & Policy Committee and, conversely, what I learn at EMECS would benefit future activities of NPEC. I am also looking forward to working together again with some of my old friends and colleagues in the Committee.

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**Olli Varis**  
**Professor, Water and Development, Aalto University, Finland**

Coastal areas and enclosed coastal seas form the interface between the seas and land on this planet. By natural and economic reasons, they are attractors of biodiversity, high ecosystem productivity, as well as enhanced economic activities. They are – at the same time – ecologically exceedingly complex and vulnerable systems and subjects to particularly high environmental stresses.

Although land and marine areas close to the coasts keep attracting economic activities, this is not enough. Coastal areas and enclosed coastal seas also face the human-induced changes and stresses through river mouths and deltas which drain growing amounts of pollutants and sediments from continents and which are increasingly ecologically and hydrologically disturbed.

My professional experience is largely from river basin research

from Asia, Europe and Africa. The concurrent river basin management paradigms call for integrated views between ecological aspects, social concerns and economic activities in order to reach sustainable development. Those paradigms have broadened the management approaches towards more inclusion of and balance between the myriad of aspects that must be taken into consideration, given that the mankind wants to leave this planet in a tolerable state to future generations. Much need to be done still, however, to improve the paradigms and management approaches.

River basin management far too often ignores coastal areas – this is one of the obvious pitfalls that call for more attention. Linking river basin research and management with impacts on coastal areas is one of my key specializations within the EMECS context.

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**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)**