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NEWSLETTER

International Lake Environment Committee Foundation (ILEC)

=Promoting Sustainable Lake Management=

This Newsletter is also available in Japanese.

ILBM Platform Process is Growing - Part I

The conceptual framework of ILBM (Integrated Lake Basin Management) Platform has been developed through various consultative and research-based projects. Currently, ILEC is promoting ILBM-based programs among basin communities around the world (Fig 1). In this newsletter, some of these global ILBM cases will be introduced in a series of articles, and this issue features the ones from Philippines and Malaysia.

1) PHILIPPINES

As of 2001, 211 lakes were identified in the Philippines. Lake Laguna, one of the largest surface areas in Southeast Asia (900 km^2), is located next to the center of the Manila Metropolitan jurisdiction, with an approximate population of 6 million spread over 6 provinces, 13 cities and 48 municipalities within its basin area of 3,820 km^2. In 2009, Laguna Lake Development Authority (LLDA) revised a lake brief on experience and lessons learnt in Lake Laguna, which they originally prepared in 2005, following the ILBM Guidelines. As the only lake basin management institution in the Philippines, LLDA is currently making a self-assessment to enhance some of their ILBM Governance Pillars.

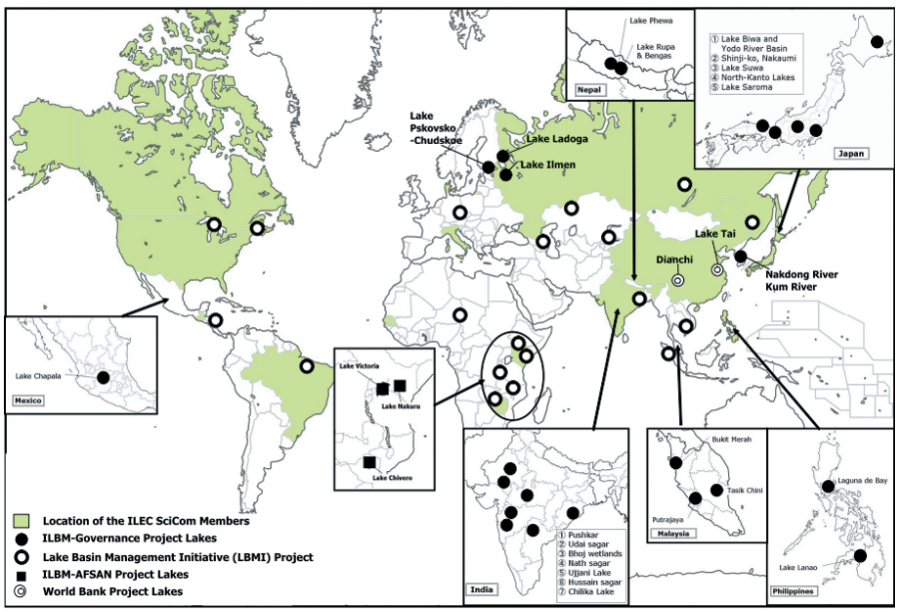

Figure 1 : ILBM-related Case Study Lake Locations

Lake Lanao, the deepest and largest freshwater lake in the Philippines, is situated on the island of Mindanao. The local NGO and the Government of Lanao de Sul, with support from LLDA, put together the Lake Lanao Brief, reflecting the output of the 2009 ILBM workshop. The Rinconada Lakes refers to its three sister lakes (Lake Bato, Lake Buhi, Lake Baao-Bula) located in the Province of Bicol, Southern Luzon Island. Bato and Buhi are basically fishery culture lakes, while Baao-Bula is an irrigation lake. In the July 2007 round table discussion joined by ILEC, it was agreed that a perspective of ILBM should be integrated into the conventional approach of Integrated River Basin Management (IRBM) which had been implemented there. Thus, the ILBM Platform activities are being integrated appropriately into the existing national program framework, with full recognition of its added value. The Mayors of these lake basins are very proactive on implementing ILBM, with a focus on capacity building to improve ILBM Governance.

2) Malaysia:

The National Academy of Science, Malaysia (ASM), and the National Hydraulic Research Institute of Malaysia (NAHRIM), jointly undertook a preliminary desktop assessment of the status of eutrophication in Malaysian

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lakes in 2005, reporting that about 62% out of 90 natural and manmade lakes were eutrophic, while the rest were mesotrophic. The assessment was followed by the Colloquium on Management of Lakes and Reservoirs in Malaysia in July 2007, focusing on development of the Malaysian Strategic Plan for Lake and Reservoir Management. Along with the preparation of the Strategic Plan, eight lake briefs were prepared, including those for Lake Putrajaya, Lake Chini and Lake Bukit Merrah.

Lake Putrajaya is a ten-year old manmade lake, constructed as part of the landscape planning when the city of Putrajaya was inaugurated as the federal administrative centre of Malaysia in 1999. Lake Chini is one of the few natural freshwater lakes in the Peninsular Malaysia. The main water source contributing to the lake is the Chini River, a tributary to the Pahang River, one of the largest rivers in Peninsular Malaysia. Constructed in 1906, Lake Bukit Merah is the oldest manmade lake in Malaysia and is located in the north western part of Peninsular Malaysia. In February 2010, the National Seminar on Managing Lakes and Reservoirs for Sustainable Use was organized by Ministry of Natural Resources and Environment (NRI), Ministry of Science Technology and Innovation (MOSTI), ASM and NAHRIM to discuss the current status of Malaysian lakes and the future programs to improve their conditions. In September 2012, Dr. Walter Rast, the ILEC Scientific Committee Vice- Chairman, attended the National Seminar on Research and Management of Lakes and Their Basins for Sustainable Use in Malaysia to give a keynote speech on the latest global experience of ILBM.

In Malaysia, the ILBM Platform activities are being pursued as a basis for the national program development, with a well organized plan to integrate and expand on the ILBM framework.

Development of the ILBM Platform Process

ILBM is a concept for sustainable management of lakes and their basins that have evolved from the years of their management experiences, and still continues to evolve. This article is about the basic process of ILBM Platform and its roles (For more details, please refer toe http://www.ilec.or.jp/eg/).

Key Steps in ILBM Platform Process

ILBM Platform Process is not only a governance improvement, but also a stakeholder consensus-building process, for a basin system that consists of lentic (standing) and lotic (flowing) water bodies. Its development is a stepwise, incremental and gradual process. The first step for the Platform members, or the key basin stakeholders, is to collectively acknowledge the state of their lake basin management, including contentious issues, through preparation of a lake brief, or a collectively prepared report on the state of lake basin and management issues. The second step is to jointly analyze issues, needs and challenges for improving the Six Governance Pillars of ILBM. The third step is to implement identified actions for improvement. The fourth step is to assess incremental improvements with appropriately identified indicators and to revise the lake brief accordingly to address remaining and new challenges.

The Cyclic Process of ILBM Platform

The aforementioned process is repeated indefinitely until its outcome satisfies the Platform members. How each lake basin can improve its governance toward sustainability depends on a number of factors. For some, their conventional approaches in planning, without any explicit reference to the concept of ILBM, may be adequate for addressing their sustainable management. However, experience and lessons learned from the ILBM cases compiled over the years have clarified two things. Firstly, since a lake basin management is a long-term governance improvement process rather than a project, it has to evolve over decades toward a sustainable resource development, use and conservation. Secondly, even without calling it "ILBM", process adopted in successful lake basin management cases entails gradual but continuous improvement of lake basin governance. This idea is presented as a Cyclic ILBM Platform Process in Figure 2. Finally, it is important for any knowledge and data of lake basin management acquired while implementing the Platform Process to be appropriately compiled and shared among the global ILBM Platforms.

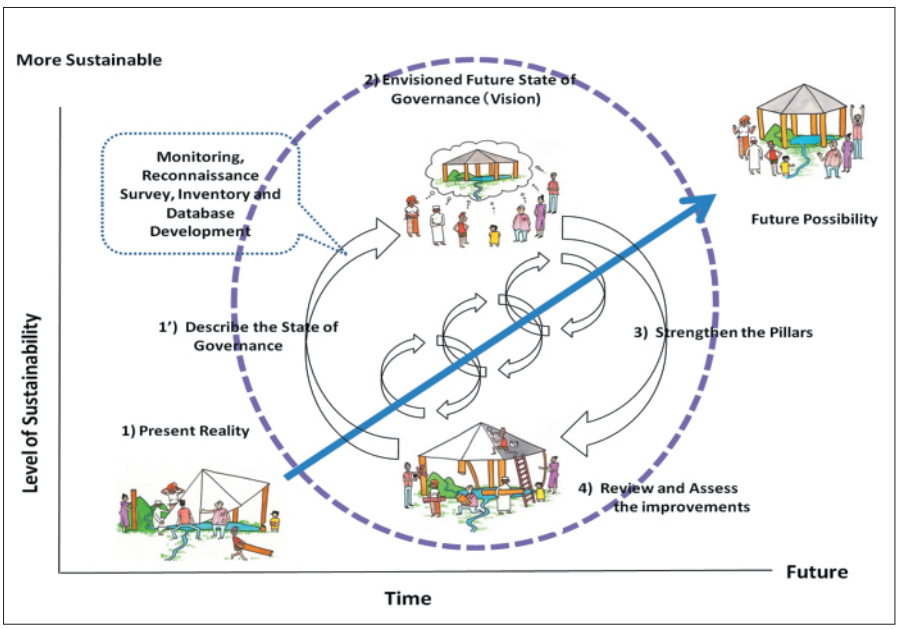


Figure 2 : Schematic Illustration of a Cyclic ILBM Platform Process

A Letter from Scientific Committee

Managing Environmental Risks to Food and Health Security in the Laguna de Bay Watershed (2009~2014)

Adelina C. Santos-Borja (The Philippines)

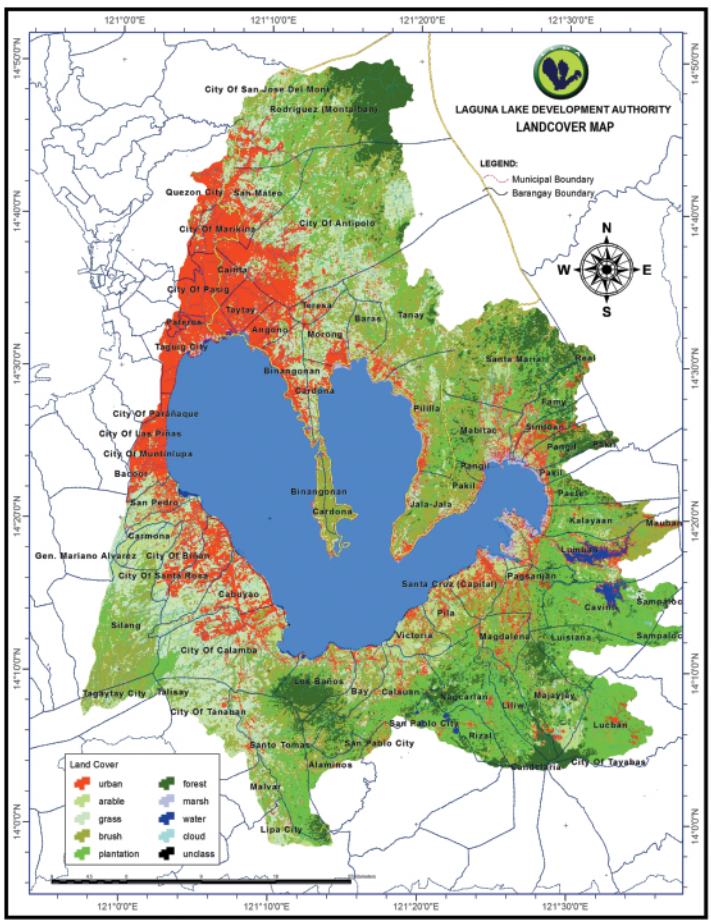
The Laguna de Bay Basin is strategically located in the heart of Luzon Island where Manila is located. The lake, being the largest in the Philippines, has a surface area of 900km^2 and a watershed of 2,920 km^2, which cradles 61 cities and municipalities belonging to five provinces and Metropolitan Manila.

The accelerated development, particularly in the northwestern part of the watershed, has tremendously changed the landscape and the larger ecosystem. In a span of ten years, from 1993 to 2003, the forest cover was reduced from 31 percent to 24 percent, the agricultural areas increased from 17 percent to 21 percent and the built up areas increased from 15 percent to 21 percent. Heavy metals, both of geogenic and anthropogenic origin, have been detected in certain areas in the tributary rivers, in the lake and in the aquatic biota. Increasing eutrophication has been observed and in severe cases has been the cause of several instances of fishkills. The lake has become shallower from an average depth of 2.8 meters in the seventies to its present average depth of 2.5 meters due to siltation and sedimentation and the accumulation of large volumes of solid wastes. Of equal alarm is biological pollution due to the invasion of non-native fish species which has upset the food chain and the biodiversity of the lake. Climate change impacts, such as the unprecedented and prolonged flooding in the lakeshore towns have further aggravated the risks on the lake basin's ecology.

In 2009, the research project, Managing Environmental Risks to Food and Health Security in the Laguna Lake Watershed, was initiated by a team of Japanese researches and scientists under the umbrella of the Research Institute for Humanity and Nature (RIHN) in collaboration with the University of the Philippines at Los Banos (UPLB), University of the Philippines in Manila (UPM), and the Laguna Lake Development Authority (LLDA). For brevity, the project is locally referred to as the LakeHEAD Project which stands for Laguna Lake Health, Environment and Diversity. This is an innovative project which combines social, medical and natural sciences in order to develop strategies of ecological risk management for sustainable food, health and environmental security planning in the lake's watershed. Specifically, it has four main objectives:1) to document the current levels and pathways of heavy metals pollution in the aquatic resources of Laguna Lake; 2) to investigate the health condition of local residents and their perception of food risks; 3) to analyze the ecological effects of land use changes, agrochemical inputs, and their cumulative impact on food production and relation to subsequent ecosystem deterioration; and 4) to describe land use change in the Laguna Lake area and its impact on water and material cycles.

An important feature of the project is the periodic exchange of information from the Japanese and Filipino researchers with the communities to validate traditional knowledge and reinforce them with scientific evidences to improve their value in forewarning the stakeholders from impending ecological risks and environmental disasters.

Note: Laguna Lake is interchangeably used with Laguna de Bay, although the latter is more appropriate for historical and cultural reasons.



Land use in Laguna de Bay Basins

A Report from a Former JICA Trainee

MR. AIBANSHNGAIN SWER (India)

Mr. Aibanshngain Swer

Mr. Aibanshngain Swer participated in a JICA training course "Environmental Education Focused on Fresh Water Environment" in FY 2007. He is currently Assistant Soil and Water Conservation Officer, who belongs to Soil and Water Conservation Department, Government of Meghalaya. Mr. Aibanshngain reports the challenges one of India's states is facing.

CHERRAPUNJEE - DESERT IN THE RAIN

Cherrapunjee, located in the North Eastern State of Meghalaya, India, is a small hill town overlooking the plains of Bangladesh at an elevation from 1,300 to 1,400 m above mean sea level. Officially called Sohra, believed to be the original name, the area is rich in coal, limestone, minerals and was chosen by the British East India Company, as headquarters of the British Empire in this part of the world and eventually became the origin of the Khasi alphabet, the language used by the Khasi tribe who inhabit the region. Widely known as the wettest place on Earth, Sohra, because of its position on the path of the South West Monsoon has an average annual rainfall of about 12,000mm with rainfall occurring over a period of 5-6 months and boast of many spectacular waterfalls, limestone caves and tourist circuits.

Despite being so water-rich, the Sohra plateau suffers from acute water shortage especially during the dry months. Thick vegetation is found only on the steep slopes but with the current rate of shifting cultivation and deforestation for fuel wood, they are receding at an alarming pace and encroaching into catchments of village, protected forest and sacred groves. To compound the problem is the annual burning of grasslands leaving no scope for new plants to regenerate, for crop cultivation or grazing lands. Because of the availability of low grade coal, locals have pursued Rat Hole form of coal mining that creates low income employment and opens up source for water pollution.

The state Government of Meghalaya with the support of Government of India has recently started the Cherrapunjee Ecological Project-Restoration of Degraded Lands under Sohra Plateau, with the aim of ameliorating the ecology and environment of Sohra Plateau, restoring degraded lands, strengthen village level institutions on Natural Resource Management and minimizing human activities detrimental to the environment in order to create avenues for sustainable livelihood.

In order to achieve these objectives, the Soil and Water Conservation Department of Meghalaya immediately swung into action and awareness programmes, specialized trainings to ensure public participation, management and monitoring of the project was organized. School children were specially targeted and an army of BEE's (Barefoot Environment Educators) was formed to identify, mobilize and apply traditional knowledge and skills for the development of their own communities through the conservation of flora and fauna. Drainage line treatment to support rain water harvesting structures, reducing surface runoff, promoting ground water recharge and rejuvenating the springs and aquifers are being done to compliment fisheries- based livelihood activities.

Rainwater Harvesting Structure

To tackle the menace of deforestation, massive tree planting to cover the large tracts of barren land with local plant species has been initiated and alternative, improved scientific innovations to fuel wood consumption to ease the burden on forests were started. Livelihoods through Eco Tourism were started to tap the tourism potential and local tribes involved in tourism activities are being groomed through intensive training and exposure visits to successful tourist destinations. The Sohra area is also home to dwindling traditional healers who treat patients through the use of locally available herbs and medicinal plant species. Encouraging protection and expansion of these species has become a priority.

However, in spite of all these initiatives, bottlenecks still abound. Experience shows that bringing together Government agencies, technical expertise, funding resources and local champions can make a real and measurable difference. For the people of Sohra, only time will tell.

Message from Mr. Aibanshngain Swer

As Assistant Project Manager of the Project, I have been personally involved right from the initial stages of survey and projectization, capacity building till the start of implementation of the project. However, because we still lack a lot in terms of knowledge and technology to save surface runoff into lakes and reservoirs, ILEC can play a pivotal role in supporting similar initiatives by way of training, technology transfer and knowledge sharing.

Lakes & Reservoirs
Research and Management

International Lake Environment Committee

Primary Resource for Sustainable Management of the World's Lakes and Reservoirs

"Lakes & Reservoirs:Research and Management" is the official publication of ILEC. The Journal aims to promote environmentally sound management of natural and artificial lakes, consistent with sustainable development policies. ILEC desires to facilitate international exchange of research results on the management and conservation of lakes and reservoirs.

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"Lakes & Reservoirs" is a quarterly journal being published since 1995. Recently, the third issue of its seventeenths volume has been published in September 2012. The Journal publishes papers on research and management activities of world's lakes and reservoirs, including developing countries. It aims to contribute to promoting environmentally sound management of world's lakes by addressing a wide range of management issues of natural and artificial lakes from various angles to scientists, managers and communities, such as security of safe water and food, conservation of biodiversity, development of appropriate managerial framework of institutions, policies and economies, and even more preservation of cultural values of lakes.

The editorial committee consists of researchers and experts on lakes and water management from North America, Europe, Pacific-rim, and Asia. Readers from developing countries can access to free papers online through UN-FAO-AGORA (http://www.aginternetwork.org/en/) and UNEP-OARE (http://www.oaresciences.org/en/).

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Overview of ILEC Activities (2012 April — September)

April

- Dr. Nakamura, the Scientific Committee (Sci Com) Chairman visited Africa to organize an ILBM seminar at UNEP Head Office in cooperation with the Indian and African ILBM focal points (April 23), and participated in East Africa Great Lakes Observatory (EAGLO) workshop to present ILBM platform activities taking place in a number of lake basins around the world (April 24-27).

May

- Dr. Nakamura and Sci Com Vice-Chairman Walter Rast attended the Global Environment Facility (GEF)-Transboundary Waters Assessment Programme (TWAP) meeting in the UNESCO Headquarters, Paris to discuss core activities of lake component in TWAP-Full Size Project scheduled to start at the end of this year (May 3-4). After that, ILEC worked on preparatory activities for the FSP from mid-May through September, including revision of lake basin assessment methodology and promotion of dialogues with potential cooperation organizations.

June

- ILEC participated in the United Nations Conference on Sustainable Development, or Rio+20, Rio de Janeiro, Brazil (June 20-22) to disseminate the results of the 14th World Lake Conference (Austin Declaration). At the ILEC-Shiga Prefectural Government joint exhibition booth located in the Japan Pavilion, the Secretariat conducted a public relations campaign, distributing various publications of ILEC, including a newly-published primer for the development of ILBM platform, to international participants, in particular those from the Middle and South America.
- Drs. Nakamura and Rast visited Sao Paulo, Brazil and Guadalajara, Mexico. In Sao Paulo, they participated in an international symposium on Enhancing Water Management Capacity in a Changing World to discuss a wide range of global water issues, which created a better recognition of the significance of ILBM concept among scientists of the world (June 25-26). In Guadalajara, they attended the Stakeholders Workshop of Lerma-Chapala's Sub-Basins.

- Secretary General Toshiaki Kagatsume visited Daegu, South Korea to participate in the International Conference to Celebrate the Host of the 7th World Water Forum in 2015 (June 21) and Japan-Korea Seminar for Sustainable Basin Management (June 22) to present activities of ILEC and an overview of Shiga Prefectural Government's initiatives for the Lake Biwa-Yodo River Basin management.

July

- ILEC co-hosted the 4th World Lakes Student Conference in Otsu, Shiga Prefecture, Japan (July 5-13) with World Water and Climate Network (WWCN) as a side event of the 2012 ASLO Aquatic Sciences Meeting held for the first time in Asia.

- ILEC and Shiga University invited two Nepalese representatives from National Lake Conservation Development Committee (NLCDC) and co-organized the Integrated Lake Basin Management-National Lake Strategic Development for Biodiversity Improvement (ILBM-NASBI) Kickoff Workshops in Shiga, Kyoto, Fukui and Ishikawa Prefectures, Japan, which included sight visits to local biodiversity conservation activities (July 22-27). The whole objective of the workshop was to exchange information and opinions between Japanese environmentalists and Nepalese counterparts to help the NLCDC develop the Nepali National Lake Strategic Plan focused on biodiversity conservation in the Himalayan alpine lakes.

August

- ILEC co-organized KODOMO Ramsar in Lake Biwa with Ramsar Center Japan (August 4-5), and conducted the 13th JICA-sponsored training program “Environment Education Focused on Freshwater Environment” started (August 24-October 11).

- ILEC and Shiga University conducted ILBM-NASBI Consultative Visit to Thailand and Malaysia (August 28 - September 5). In Malaysia, Drs. Nakamura, Rast, and Assistant Coordinator Yasue Hagihara presented on Integrated Lentic Lotic Management (ILLBM), TWAP and ILBM-NASBI under the International Biodiversity Conservation Project, respectively.

September

- Drs. Nakamura and Rast gave keynote and memorial lectures to commemorate the late Dr. Mohan Kodarkar, former Scientific Committee Member, at the International Conference on Urban Lakes in Mumbai, Maharashtra, India (September 7-8)

- Drs. Nakamura and Rast participated in International Waters Science Conference in Bangkok, together with Senior Director Satoru Matsumoto to discuss GEF activities in international water areas, specially, on enhancing the ways to strengthen science-policy dialogue (September 24-26). Dr. Matsumoto also attended TWAP Preparatory Meeting there (September 27).

- Finally, the Secretariat is currently working on the site selection for the 15th World Lake Conference, tentatively scheduled in 2014. The final decision for the conference site will be made by the end of this year.

Activities of ILEC (April — September 2012)

Apri

23 ILBM Seminar at UNEP HQ (Nairobi, Kenya)

24—27 Participation in EAGLO Workshop (Nairobi, Kenya)

May

3—4 Participation in TWAP-PPG Meeting (Paris, France)

June

20—22 Participation in UN Conference on Sustainable Development (Rio+20): Joint participation with Shiga Prefecture (Rio de Janeiro, Brazil)

22 International Conference in celebration of the 2015 World Water Forum (Daegu, Korea)

22 Japan-Korea Joint Seminar for the Sustainable River and Lake Baisn Management (Daegu, Korea)

24—25 Participation in International Academy Panel (Sao Pauro, Brazil)

28—29 4th STAKEHOLDERS WORKSHOP OF LERMA-CHAPALA'S SUB-BASINS (Chapala, Mexico)

July

8—13 the 2012 ASLO Aquatic Sciences Meeting (Shiga)

22—27 ILBM-NASBI Workshop : In collaboration with Shiga University (Shiga, Kyoto, Ishikawa and Fukui, Japan)

August

4—5 KODOMO Ramsar in Lake Biwa 2012 : Jointly organized with Japan Ramsar Center, Shiga Prefecture, etc (Shiga, Japan)

24 (-Oct 11)
13th Environment Education Focused o Freshwater Environment:Commissioned by Japan International Cooperation Agency (Shiga, Japan etc)

28 (-Sep 5)
ILBM-NASBI Consultative Visit to South East Asia : In collaboration with Shiga University (Several cities in Thailand and Malaysia)

September

7—8 International Conference on Urban Lakes (Mumbai, India)

24—26 International Waters Science Conference (IWSC 2012, Bangkok, Thailand)

27 TWAP-FSP Preparatory Meeting (Bangkok, Thailand)

ILEC

INTERNATIONAL LAKE ENVIRONMENT COMMITTEE FOUNDATION (ILEC)

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