

No.42 December 2002
NEWSLETTER
International Lake Environment Committee
 =Promoting Sustainable Lake Management=

This Newsletter is also available in Japanese.

A Packed Calendar at ILEC

When it rains, it pours! Activity has risen to a frenetic pace at ILEC as many key events loom on the horizon. Here is a summary: many of the following activities are described in detail in this newsletter.

9 to 11 December: The World Bank Institute will hold a workshop at the ILEC Secretariat on "Practical Environmental Compliance and Enforcement Approaches" focusing on Japanese lessons for Asian countries.

15 to 18 December: There will be a World Lake Vision Symposium for the general public on 15 December at the Lake Biwa Museum. The following three days are dedicated to meetings of the World Lake Vision Drafting Committee, which will be developing the 4th (and near final) draft of the World Lake Vision.

13 to 14 January: The first steering committee meeting for the new GEF-funded Lake Basin Management Initiative is set to be held in Washington, DC at the World Bank Headquarters.

16 to 23 March: The 3rd World Water Forum will be held in ILEC's backyard in Kyoto, Osaka, and Shiga. While we lamented the low profile of lakes at the previous World Water Forum in the Hague (March 2000), it seems the hard work of many "lake people" has paid off—there are approximately 8 lake-related

sessions scheduled.

22 to 26 June: ILEC will co-host the 10th World Lake Conference with the International Association for Great Lakes Research. The conference, which will be held in Chicago on the shores of Lake Michigan, is somewhat of a homecoming—the 2nd World Lake Conference was held at Mackinac in 1986.

Overall, it is gratifying to step back and to see how lakes are finally becoming prominent on the international agenda. Hopefully, success over the next few months and years will lead to a world with sustainably managed lakes!



A view from ILEC's roof : An inversion over Lake Biwa with Mt. Hiei in the background.

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World Lake Vision in Johannesburg

The first draft of the World Lake Vision (WLV) was unveiled at the World Summit for Sustainable Development in Johannesburg in August and September this year. The summit provided a great opportunity for the WLV to be presented to a wider audience. The major gatherings at which the draft WLV was introduced included the 7th Living Lakes Conference, a special WLV Session held in conjunction with UNEP-IETC/ICLEI Local Government Session at the Summit, and a WLV exhibition at the 'water dome'.

Generally, it was acknowledged that the WLV is an important document that highlights the immense value of lakes, the diverse problems facing lakes, and the root causes of lake degradation. The WLV offers "Principles for Action" to guide the management of lakes. It further identifies commitments and initiatives that represent concrete steps that can be taken in pursuit of the goal of sustainable lake management. All in all, the WLV was recognized as a valuable tool for stating the case for lakes not only to the "lake community" but most importantly to the wider "water community".



Cleveland and Chicago Meetings



Participants at the Cleveland meeting

Meetings were held in Cleveland and Chicago in October to discuss the constitution of the 10th World Lake Conference and the contents of the World Lake Vision (WLV). Mr. Matsumoto of ILEC, Mr. Yamanaka of the Shiga Prefectural Government and some draft committee members for the WLV met with members of the GLC (Great Lakes Conference) and SOLEC (State Of Lake Environment Conservation) to discuss a number of matters. More information is available at the ILEC website.

Please visit <http://www.ilec.or.jp/eg/wlc.html> for news on the World Lake Conference, and <http://www.ilec.or.jp/wwf/> for information on the World Lake Vision.



World Lake Vision - Version 3.0

After a series of vigorous discussions at the meeting in Cleveland (see above), the basic structure of the World Lake Vision was developed and compiled into the WLV (Version 3.0). This new version is now posted at the following address:
(www.ilec.or.jp/wwf/)

WLV (Version 3.0) is made up of the following four sections:

1. Introduction to the World Lake Vision
2. Major Challenges Facing Lakes
3. Principles for Action
4. A Call to Action - Promising Strategies and Opportunities

Section 3 replaces the "Needed Commitments and Initiatives" section in the previous version and is called "Principles for Action" in this version.

JICA Group Training Course

Environmental Education Focused on the Aquatic Environment

The 3rd 'Environmental Education Focused on Aquatic Environment for Tertiary Level Teaching Staff' was concluded at a closing ceremony on October 25th at OSIC (JICA Osaka International Center). The eight-week course was attended by eight trainees from seven countries. While the course was considered a success by everyone, in truth it will only be a success if the trainees can use the knowledge they gained here in their native environment. Here are comments about the course from two trainees.

D. Kofi Essumang, Ghana

As I sat through the JICA/ILEC training course I realized that any environmental education program should be well packaged and presented in order to arouse the interest of the recipient. The approach should be practical and field-survey oriented. Learners should be given the chance to observe for themselves the situation on the ground (environment) for them to make better choices and informed decisions. They should be guided to test for the quality of the water they drink, know what happens to the waste they throw away and the types of diseases that result from environmental mismanagement. This practical experience will help them choose the kind of environment they would want. This approach has worked for Japan and especially

Shiga Prefecture where Lake Biwa resides.

As a trained scientist I have always wondered where exactly I fit as far as environmental education is concerned. As a result of my participation in the 3rd Environmental Education course focused on Aquatic Environment, I am now very well positioned and poised to champion the cause of environmental education. Environmental problems are very complex and therefore needs all disciplines (History, Biology, Physics,

Sociology, even religion etc.) to get involved in addressing the environmental degradation.

My participation in the course has exposed me to the methods of environmental education presentation in Japan; compare my environment to that of Japan so as to come to terms with my situation. With the knowledge I have acquired, I will encourage my colleagues in all disciplines to add Environmental Education considerations in their teaching so as to ensure sustainable development.

O. Philavong, Laos

Before coming to Japan, I thought the environment in Japan would be highly polluted by factories all around the country. When staying in Kusatsu, my accommodation faced the beautiful Lake Biwa where I saw a wonderful harmony of the natural and modern world. I quickly realized that my expectations were misleading.

Of course, a clean environment cannot exist without strong environmental education (EE) among Japanese citizens. I have seen that EE starts at an early age allowing students to make environment a significant part in their judgement values. During the eight weeks in Japan, I have been trained in almost every aspect of Aquatic Environment ranging from global warming to microbiology of the lakes. I have had opportunities to handle different experiments, of which some were totally new to me, and exchanged ideas and experiences with the other participants.

Though the situation in Japan is far different from my home country, we still have a very well preserved environment in Laos because of the small population and industry, while in industrialized Japan environment is well managed by people. In my opinion, it is still not so late to follow Japan's success, and I am confident that knowledge I have learnt here can be finely adapted in my country for sustainability of our natural resources.



Lake Basin Management Initiative: A GEF Project

ILEC will be the executing agency for a newly approved GEF project called "Towards a Lake Management Initiative in Support of the 3rd World Water Forum: Sharing Experiences and Early Lessons in GEF and non-GEF Lake Basin Management Projects".

1. What is GEF?

GEF (Global Environment Facility) was established in 1991, to provide funds for protecting the earth's environments to developing countries by international organizations such as World Bank, UNDP and UNEP, etc. The main focuses of GEF activities are the following six areas: 1) Biodiversity loss, 2) Climate change, 3) International waters, 4) Ozone layer depletion, 5) Land degradation and 6) Persistent organic pollutants. GEF projects can be implemented by UN organizations as well as governmental organizations, the private sector and NGOs.

2. GEF Lake Basin Management Initiative

(1) Reasons behind the project

Currently, it is recognized that world lakes and reservoirs are facing increasing pressures such as population pressure and growth, urbanization, industrialization, mining development, irrigation and climate change, and there is a necessity for an improved and sustainable approach to managing lake basin resources. Therefore, water-related international communities are required to seek measures for improved lake and reservoir management and strengthen capacity for them at local, provincial, national and global levels.

(2) Implementation

The project falls under GEF Operational Programs No. 10, Contaminant Based, and will be implemented by the World Bank on a global scale and executed by ILEC through collaboration with a US NGO, LakeNet.

(3) Cost and duration

Total funding for the project is set at about US\$2.2 million and the major sources of funding are GEF (approximately 45%), Consultant Trust Fund in World Bank supported by the Government of Japan (approximately 30%) and the rest shared by United States AID, Shiga Prefecture and ILEC, the Bank-Netherlands Water Partnership Program and the World Bank Institute. The duration of the project is 18 months from 2002 to 2004.

(4) Objectives

The project has the following four objectives:

- ① document experiences through case studies
- ② facilitate sharing of lessons
- ③ accelerate learning and implementation of effective lake

management approaches

- ④ contribute to the 3rd World Water Forum and the World Lake Conferences

The main project activities for achieving the above objectives will be:

- data collection and establishment of an e-forum
- preparation of experiences and lessons learned briefs
- regional experience sharing and review meetings
- consolidation of final report
- identification of lake management experts

(5) Lakes to be reviewed

Tentatively, 30 lakes around the world will be reviewed, including 13 with GEF-funded projects in place. The regional distribution of the 30 lakes will be 10 lakes in Africa, 7 lakes in Europe and Central Asia, 7 lakes in East Asia and South Asia, 3 lakes in Latin America and the Caribbean and 3 lakes in North America.



Lake Nakuru—one of the 30 lakes to be reviewed by the project

Beijing Presentation

Mr. Kotani, Executive Director of ILEC, presented a new (approved in September 2002) GEF Medium-Sized Project named 'Lake Basin Management Initiative', at a side event of the 2nd GEF General Assembly held for 3 days, 16-18 October 2001, at the Beijing International Convention Center, Beijing, China

The side events were set on the middle day of the assembly, for discussion on 42 global environmental issues by UN organizations, governments of several countries, the World Bank and NGOs, and held consecutively at seven meeting rooms at the venue with each issue discussed for two hours.

The side event regarding ILEC was co-hosted by the Japanese Government and a Japanese NGO, IGES (Institute for Global Environment Strategies). Some 30 participants discussed reports about development of Japanese environmental policies and Japan's contributions to international society, and GEF projects. The meeting was promoted by a round-table forum presided over by Mr. Takehiko Hiraishi, a senior consultant of IGES.

The opening remarks were made Kazunori Tanaka, a Japanese Parliamentary Secretary for Finance, before the



Keynote Address given by Yoshio Yatsu, a member of the Japanese House of Representatives. The theme of his address was the development of Japanese environmental policies and Japan's contribution to international society. Other speakers included Mr. Alan Miller of the GEF Secretariat, Miwako Kurosaka from the Japan Council for Sustainable Development, Jun Nishida of UNIDO, ITPO, Tokyo and H. Kotani of ILEC. After a period of free discussion the closing remarks were given by Akinori Ogawa from the Japanese Ministry of Environment.

UNEP IETC/ILEC Short Series – Lakes and Reservoirs –

In developing and disseminating this Short Series, the primary goal was to provide readers with information about lakes and reservoirs considering various aspects related to their nature, importance and management. It is not meant to be a comprehensive technical publication but an accessible and amenable source of information for the citizen by the use of clear language and a minimum of technical jargon to encourage greater understanding. Volume One focuses on lakes and reservoirs, particularly their similarities and differences, as well as their management implications. Volume Two discusses the watershed, beginning with its collection of water from rain and snow until the end of its journey to the sea. In Volume Three, the problem of accelerated eutrophication, which is the process of the enrichment of



nutrients (phosphorus and nitrogen) and affecting thousands of freshwater bodies around the world, is discussed and analysed. Volume Four discusses the protection and care of these valuable resources, including the urgent need to raise public awareness of the value of these freshwater resources.

The intrinsic value of lakes and reservoirs and the efforts to preserve them are larger than we think and as citizens we have to join our efforts with that of the authorities and industries to ensure their preservation and appropriate or sustainable use either for us or for future generations. For copies, please send a request to order@ilec.or.jp

LAKE TOBA: Its Potential and Challenges

By Prof. Payaman J. Simanjuntak

Lake Toba is one of the largest freshwater reservoirs in Southeast Asia and one of the deepest lakes in the world. It was created by an immense volcanic eruption some thousand years ago. Its area is about 1,100 square kilometers—87 kilometers in length from northwest to southeast and 27 kilometers in width from west to east with a maximum depth of about 500 meters. It lies on the valley of an ancient volcanic mountain with the water level at 904-905 meters above sea level. The island of Samosir is situated at the center of the lake, extending from northwest to the southeast with a length of 45 kilometers and a width of 19 kilometers.

The Lake Toba region is the apex of the Bukit Barisan promontory in North Sumatra. The Bukit Barisan promontory is the head of all rivers flowing to Lake Toba, or directly to the Malacca Straits and Indian Ocean. The excess water of Lake Toba flows to the Malacca Straits through the Asahan River. Since 1982 the Asahan River waterfall has been utilized to generate hydroelectric power. Most of the electric energy is used for the Inalum Company aluminum smelting plant.

The fertile soil and protein-rich resources of the region, as well as the cool and refreshing environment, make Lake Toba and its surrounding area a healthy and peaceful place for human habitation. Therefore, since centuries ago, the Batak ethnic tribe chose the region as their permanent site for settlement. Their descendants developed into five Batak groups, namely Batak Toba, Batak Angkola-Mandailing, Batak Pakpak Dairi, Batak Simalungun and Batak Karo.

The Lake Toba region contains a range of economically significant sources of livelihood for the population, mainly derived from the abundant freshwater resources, the dense tropical forests, agriculture, and its panoramic beauty. From almost all angles and sites, the panorama possesses a fascinating and beautiful scenery. "Samosir Island" and "Toba Lakeside" are original Batak culture sites,



SAVE LAKE TOBA

containing invaluable historical objects and artifacts, arts and culture. The blend of scenic beauty of the region, its ecological significance, and the original Batak culture, makes the region a potential tourism attraction and destination.

It is also therefore very fitting that the Lake Toba area, as a unique combination of ecologically significant regions as well as an important culture site, may be considered for a "world heritage" status in accordance with the UNESCO categorization. The Lake Toba region should be maintained as a biosphere reserve with three characteristics:

1. The conservation of biodiversity;
2. The quest for economic and social development; and,
3. The maintenance of associated cultural values.

The economic potential of the lake water has been utilized by using the





waterfall of Asahan River from Lake Toba to generate electrical energy needed for the operation of the Inalum Company aluminum smelting plant since 1982. At the beginning of the establishment of the power plant and the Inalum Company, no one ever foresaw the negative impacts it would produce. The forestry potential has also been exploited since 1985 with the presence of Indorayon's pulp mill and rayon plant by using wood from the forest at the foothills of Lake Toba as their main source. From its early stage, the plan of establishing this plant has been a controversial issue.

After the first decade of operation of the Indorayon Company, a significant degradation of Lake Toba and the environment was obvious. The forests were no longer as rich as they were. Millions of trees have been cut down and large forest areas bulldozed. Many rivers are now dirty, polluted and dry or lack fresh water.

The Indorayon plant is located in an enclave of the hills. Therefore, polluted gasses from the Indorayon factory can only float a few meters above the surface of the soil before they drop to the soil during the cool nights or as it rains. The waste and gasses contain chemical substances, including dioxin, pentachlorophenol and trichlorophenol, which have accumulated in the environment. Such substances have a potential of

causing a number of diseases such as chronic lung ailments, birth defects, reduced immunity, cancer and nervous system disorders.

The water intake that comes into the lake continuously decreases particularly during the dry season,

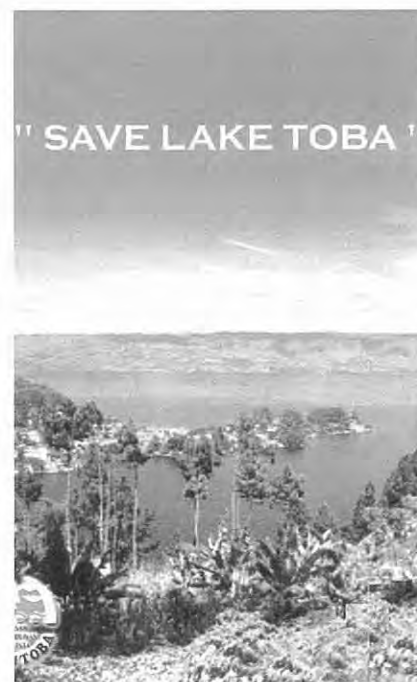
but at the same time the Inalum aluminum plant maintains the same level of water outflow to generate electrical energy. Therefore the water surface of Lake Toba quite often drops to 902 meters above sea level. This brings problems for people particularly within the Lake Toba coastal areas.

In general, the use values of Lake Toba has been continuously degraded for a number of reasons. First, water supply due to excessive water withdrawals and the decrease of water intake to Lake Toba. Secondly, aquatic ecosystems of Lake Toba have been diminished due to accelerated eutrophication results from excessive nutrient loads, such as fertilizers carried from agricultural fields, detergents, untreated human and livestock wastes, industrial effluents, and storm drainage. Thirdly, excessive use of Lake Toba for fishery practices and boat transportation has continuously degraded its environmental quality. Therefore, in several parts of Lake Toba, there has been an excessive growth of algae, water hyacinth, aquatic plants and other living organisms.

In conclusion, sustaining the health and long-term use of Lake Toba requires the resolution of conflicts among competing uses of lake resources particularly among the pulp

and rayon factory of the Indorayon Company, the electrical power generation of the Inalum Company, and the use by the local community. In other words it is important to develop a drainage basin water budget for Lake Toba to identify both the volume of water intake and outflow.

A better lake and environmental management system should be introduced in such a way to reduce eutrophication, toxic contamination, sedimentation, over-utilization of living resources, biological pollution, etc. Land planning is essential to conserve critical lake drainage in the basin. Local coalitions including governments, schools, religious communities and NGOs should work together to eradicate invasive species and organisms already established in Lake Toba. In the long-run, public education and awareness programs about Lake Toba and its drainage basins are essential. To do this, the establishment of the Lake Toba Science and Education Center is particularly important.



Visit this website

<http://www.sustdev.org/laketoba/>

New Books

Dr. Eric O. Odada, who recently joined the ILEC Scientific Committee Member and is the Professor of Geology at the University of Nairobi, has edited "The East African Great Lakes - Limnology, Palaeolimnology and Biodiversity" with his co-editor and colleague Dr. Daniel O. Olago the Professor of Geology of Nairobi University.

This publication contains original research papers presented during the Second International Symposium on the Limnology, Climatology, Palaeoclimatology and Biodiversity of the African Great Lakes organized by the International Decade for the East African Lakes (IDEAL). The book also provides a comprehensive and comparative view of large African lake systems such as Lakes Victoria, Tanganyika and Malawi. It serves as a basic text for understanding the lake systems, history and sensitivity to processes of change, thus providing an essential tool for decisions related to the sustainable management of such precious resources.

For more details and information on how to purchase the publication, please visit:

<http://www.wkap.nl/prod/b/1-4020-0772-8>

..... Forthcoming Events

January 19th to March 20th, 2003:

13th Group Training Course in Lake Water Quality Management
(ILEC, Japan)

March 12th to March 15th, 2003:

2nd International Conference on Irrigation and Drainage
(Phoenix, Arizona, USA.)

March 16th to March 23rd, 2003:

3rd World Water Forum
(Kyoto-Shiga-Osaka, Japan)

March 29th to April 2nd, 2003:

3rd International Limnogeology Congress
(Tucson, Arizona, USA.)

May 26th to May 28th, 2003:

2nd International Symposium on Contaminated Sediment
(Quebec City, Quebec, Canada)

World Lake Vision (WLV) Website Updated

There are only three months left before Shiga Day on March 20th and 21st next year at the 3rd World Water Forum. At the meeting held on September 26th and 27th, the World Lake Vision committee was established and Dr. Kira, who is the Vice Director General of ILEC, was chosen as its chairperson. More meetings were held in Cleveland in October (see article on page 2) and the establishment of WLV is approaching the final stage. Should you have any comments or suggestions for the WLV, you have until January 31st to have your opinions considered. For more information please take a look at the WLV website at the following URL:

<http://www.ilec.or.jp/wwf/>

ILEC Library - Children's Book Corner

The ILEC library is located at the left of the lobby of the main ILEC building. ILEC has established a 'children's book corner' in the Library and there are currently some 138 books which we think will appeal to children including some 45 items on the environment. These 45 publications include picture story books, picture books, novels, biographies and photo albums.



Of course the books can be used and enjoyed by adults as well and though they are not available for loan – you have to visit the library to read them – we do encourage all visitors to ILEC to browse our collection. You never know, you might get some ideas for a similar 'corner' at your institution. Our library is open from 9:00 to 5:45 on weekdays.



INTERNATIONAL LAKE ENVIRONMENT COMMITTEE

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