



# FIRST LATIN AMERICAN WORKSHOP ON INTEGRATED LAKE BASIN MANAGEMENT



## REPORT

Chapala, Jalisco State, Mexico, 17-22 November, 2008



With Financial support from

Japanese Ministry of Education, Sports, Culture, Science and Technology  
and  
Research Center for Sustainability and Environment, Shiga University, Japan

## SUMMARY

<b>Number of Meeting Participants</b>	37
<b>Residency of Participants</b>	<ul style="list-style-type: none"> <li>• 34 from Mexican States (Estado de Mexico, Guanajuato, Jalisco, Mexico City, Michoacan, Morelos, Queretaro, Veracruz)</li> <li>• 2 from Argentina;</li> <li>• 1 from Guatemala</li> </ul>
<b>Participants Field of Activity</b>	<ul style="list-style-type: none"> <li>• 13 researchers from public agencies and universities;</li> <li>• 12 members of government agencies of three Mexican states</li> <li>• 2 members of municipal governments</li> <li>• 9 members of civil society organizations</li> <li>• 1 private consultant</li> </ul>
<b>Residency of Workshop Speakers</b>	<ul style="list-style-type: none"> <li>• 2 from Japan</li> <li>• 1 from Philippines</li> <li>• 1 from USA</li> <li>• 1 from Guatemala</li> <li>• 1 from Mexico</li> </ul>
<p><b>Workshop Speakers:</b></p> <p><b>Dr. Masahisa Nakamura</b> - Director, ILEC Scientific Committee; Director, Shiga University Research Center for Sustainability and Environment (Japan); former Director, Lake Biwa Research Institute.</p> <p><b>Dr. Walter Rast</b> - Director, International Center for Watershed Studies and Director, Aquatic Resources Program, Texas State University; former Chair, World Lake Vision Action Report Committee; Vice-Chair, ILEC Scientific Committee.</p> <p><b>M. Sc. Adelina C. Santos-Borja</b> - Chief, Research and Development Division; Team Leader, Laguna de Bay, Community Carbon Finance Project, Laguna Lake Development Authority; Laboratory Complex, Rizal Provincial Capitol Compound (Philippines).</p> <p><b>M. Sc. Juan Skinner Alvarado</b> - Consultant, cultural and environmental issues; extensive experience in local development, tourism and lake management in Latin American countries, particularly for Atitlan Lake (Guatemala).</p> <p><b>Dr. Helena Cotler</b> - Director, Integrated Basin Management, Instituto Nacional de Ecología (Mexico); Co-editor, Atlas of the Lerma-Chapala Basin.</p> <p><b>Bs. Katsuya Tanaka</b> - Associate Professor, Research Center for Sustainability and Environment, Shiga University, Japan.</p>	

## I. INTRODUCTION

This First Latin American Workshop on Integrated Lake Basin Management (ILBM), held over a six-day period, in Chapala, Jalisco State, Mexico, was organized by the International Lake Environment Committee Foundation (ILEC); Corazon de la Tierra, (Heart of Earth, a Mexican civil-society organization); Secretary of Environment and Sustainable Development (SEMADES, Jalisco State government, Mexico); Water Commission of Jalisco State (CEA); and Technological Institute of Higher Studies (ITESO, Mexico). The goals of this diverse group were as follows:

- To foster Integrated Lake Basin Management (ILBM) as a practical approach for basin planning and implementation of sustainable practices in Mexico and other Latin American countries;
- To strengthen the cooperative links between federal, state and municipal government levels with universities, research centers and civil society groups, raising their capabilities to develop and apply integrated projects; and
- To construct a common ground to apply ILBM in the sub-basins of the Lerma-Chapala Basin and other watersheds in Latin America.

The workshop was directed to technical members and directives of government groups in Mexico and Latin America, and environment research centers, universities and civil society organizations linked to basin and ecosystem management, and related fields. Participants were invited on the basis of their potential level of impact in regard to integrated lake basin management. Against this background, 37 people responded in an enthusiastic and committed way, eager to learn from the speakers and their partners, as well as sharing their own experiences and knowledge.

Integrated Lake Basin Management (ILBM) is a technical tool almost unknown in Latin America, despite its comprehensive, integrative management approach. This workshop was designed to foster this approach, serving as a first stepping stone to creating a collaborative network in this region, and to collect data about its application in the individual basins where the participants work on a local level. The workshop also allowed definition of very precise compromises to be applied in two important Mexican basins: the Lerma-Chapala and Santiago River basins. Both basins exhibit particular characteristics, processes and stakeholder, each with major problems resulting in good measure from inadequate management approaches that didn't take into account principles of public involvement; development of sound scientific information; the complexity of the basin's scientific and socioeconomic components; and the need of long term compromises. In fact, both basins are of interest to the Mexican organizers, mainly the Lerma-Chapala, which is at a point of potentially being included on The Ramsar List of Wetlands of International Importance.

The participants prepared and signed The Chapala Statement, which highlights the detailed discussions of the entire six-day workshop, highlighting the pathway to be followed, which it is hoped will become a milestone for basin management in the region.

## II. PROGRAMME

**MONDAY, 17 November**

**09:30-10:30 Hr Registration.**

**10:30-11:30 Hr Inaugural Session.**

- Alejandro Juarez - Director, Corazon de la Tierra, Mexico.

On behalf of Corazon de la Tierra, Mr. Juarez welcomed all workshop participants, especially those coming from other countries. He mentioned the long path that has been followed during the course of the Lake Chapala restoration process, and highlighted the importance of understanding that a lake and its basin are one, and that no significant management activities can be properly done without such understanding. He also mentioned the importance of such strong guidance documents as the World Lake Vision and precise methodologies such as Integrated Lake Basin Management (ILBM) for guiding lake basin decision making. Further, he acknowledged ILEC's important commitment, and the strong goodwill and work of local committees (Corazon de la Tierra, SEMADES, CEAS and ITESO), in facilitating the workshop. He directed the attention of the audience to the fact that the nature of the above-noted institutions represented in the workshop provides an example of the kind of collaborative process promoted by ILBM.

- Masahisa Nakamura - Director, ILEC Scientific Committee, Japan

Dr. Nakamura praised the interest of the participants in taking in the workshop, both from Mexican participants and those from other countries. He briefly explained the nature and objective of the International Lake Environment Committee (ILEC), noting importance of such workshops as a useful way to exchange experiences and gain practical knowledge for improving basin management. He expressed congratulations to the national committee, including his best wishes that the workshop could generate useful tools to foster restoration of Lake Chapala and its basin, hoping also that this first workshop could become a milestone to foster ILBM in Latin America.

- Mario Lopez - Head, Water Research Team, Technological Institute of Higher Studies (ITESO), Mexico.

Mr. Lopez expressed the interest and enthusiasm of his institution in being part of the organizing committee, noting that water is a matter of concern for all people, and that it has become an extremely urgent issue because of its scarcity and the conflicts this issue is currently generating. He mentioned the Lake Chapala basin and Santiago river basin (the latter located in Jalisco state) as examples of such problems, with which linking such issues as health, wellbeing, social participation, governance, transparency and others requires an integral vision that facilitates solutions to problems and cements social networks. He expressed his confidence that the workshop would help address such matters, not only generating trained personal but also allowing the development of collaborative solutions for the medium and long term.

- Hector Castañeda - Director of Basin Management, Water Commission of Jalisco State (CEAS), Mexico.

Speaking on behalf of Cesar Coll Carabias, General Director of CEAS, Mr. Castañeda acknowledged the need for the integrative process that had made the workshop possible, mentioning the interest of CEAS in improving the technical capabilities of its personal, and also viewing the activity as a means of getting information about experiences being currently gained from similar activities in other parts of the world.

- Martha Ruth del Toro - Head Officer, Secretary of Environment and Sustainable Development (SEMADES).

On behalf of the Jalisco State Governor, Mrs. del Toro welcomed all workshop speakers and participants, emphasizing the importance of Lake Chapala, the exclusive characteristics that define the lake and its basin, and the special confluence situation that facilitating organization of the workshop. She highlighted the concurrent interests between civil society, government and researchers, also mentioning the international importance of the lake. She also expressed her appreciation that ILEC, with its scientific approach, and having ILBM as a specific management tool, had managed to be in Mexico to help conduct the six-day workshop. She also mentioned that a civil society organization had started the local process, as well as the openness of all the participants and organizations in working together to achieve a lake management common goal. She expressed her strong desire that the workshop could produce specific tools to be used for the restoration and sustainable management of Lake Chapala and its basin.

Following her introductory remarks, Mrs. del Toro formally opened the workshop.

#### **11:30-11:40 Hr**

Alejandro Juarez made a brief presentation on the workshop contents and methodology, clearly highlighting the goals to be reached, and clarifying that the workshop was part of a process that began about six year earlier on the Lake Chapala basin, which nevertheless still requires several years to develop ILBM principles.

#### **12:00-12:30 Hr Attention to Media Representatives.**

The significant assistance and interest of journalists regarding this issue, and the opportunities they had to interview the CEA and SSEMADES representatives made this session longer than initially planned. The questions focused largely on Lake Chapala and related issues, particularly because several huge dam constructions had been the source of conflicts during past months because of negative social reactions resulting from negative impacts to their patrimony (houses and crop lands), displacement of people, changes in their lifestyles and other factors. Another major issue mentioned was pollution of the Santiago River, a basin that was subsequently discussed in further detail by the participants in the workshop.

#### **12:30-13:30 Hr**

***“Development and Evolution of the Integrated Lake Basin Management (ILBM) Concept,”*** a presentation by Dr. Masahisa Nakamura, Director, ILEC Scientific Committee, Japan.<sup>1</sup>

Dr. Nakamura traced the history of the establishment of ILEC as an international network dedicated to promoting sustainable management of lakes all over the world. Together with many other organizations related to lake management, ILEC created two instruments that function as its main philosophical and operative tools: the World Lake Vision (WLV) and Integrated Lake Basin Management (ILBM). Requiring a trans-disciplinary approach, ILBM tends to be very difficult to implement. Nevertheless, it is a very practical management approach, given that its principles and strategies are derived from observations of real management practices for 28 lake basins from Asia, North America, Latin America, Europe and Africa.

The reason such particular efforts are dedicated to lakes is that their particular characteristics require an approach different than that given to rivers and other water bodies. ILBM also is a continuing process involving gathering information and exchanging experiences as a means of learning and comparing data. In fact, ILBM is as diverse as are the lakes of the world.

There are six pillars of ILBM, each one as important as the other, as follows:

- I. Institutions** to manage the lake and its basin for the benefit of all lake basin resource uses;
- II. Policies** to govern people’s use of lake resources, and their impacts on lakes;
- III. Involvement of people** being central to lake basin management;
- IV. Technological possibilities** and limitations exist in almost all cases;
- V. Knowledge** both of a traditional and scientific nature is valuable;
- VI. Sustainable finances** to fund all of the above activities are essential.

**15:30-16:30 Hr**

***“Development and evolution of the Integrated Lake Basin Management (ILBM) concept”*** (second part of a presentation by Dr. Masahisa Nakamura, Director, ILEC Scientific Committee, Japan.).

Following initial discussion of the six ILBM pillars, Dr. Nakamura analyzed each one individually, stressing the importance of understanding them as part of a process. Based on management experience from the 28 study lake basins, one or two frequently appear to be stronger than the others. This situation is acceptable as a starting point, but all six pillars must be considered to achieve real integrated management. Strategic planning is important for creating social networks that back up the action plan, program or other management structure. One participant asked what happens when only one of the pillars is considered, or when the management emphasis is only directed to a part of the basin or only to the body water of concern. Dr. Nakamura indicated that this kind of situation frequently occurs because of the lack of an integral vision, scarce monetary resources, conflicts between conservation and use of ecosystem resources, etc., and that a common mistake is to try to omit the public from the decision making process, erroneously

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<sup>1</sup>There was a question and answer session after each presentation. For reasons of simplicity, these sessions are not discussed, except for where the discussions involved particularly important questions. Break times and lunch times also are not explicitly included in this workshop report.

thinking that technicians or politicians can take care of all relevant issues. In fact, to be effective, management actions must be acceptable to the different groups comprising the basin population. It is extremely difficult to try to enforce a comprehensive plan under such conditions. Rather, awareness is a key component for multi-partner networks in which particular responsibilities must be understood and assumed.

**16:30-17:45 Hr**

***“The World Lake Vision (WLV) and its Application through Integrated Lake Basin Management (ILBM),”*** a presentation by Walter Rast, Vice-Chair, ILEC Scientific Committee, and Director, International Center for Watershed Studies, Texas State University, USA.

Dr. Rast began his presentation by highlighting the importance of lakes, enhancing the ecological services they provide, and their cultural significance to the people that dwell around them. Lakes hold 90% of the world’s readily-available liquid freshwater, providing water supplies for drinking, industry and crop irrigation, fisheries, tourism and many other activities.

He discussed the seven World Lake Vision (WLV) principles, commenting that all of them are important and must be considered as a linked unit because they complement each other:

- Principle 1: A **harmonious relationship** between humans and nature is essential for the sustainable use of lakes.
- Principle 2: A lake **drainage basin** is the logical starting point for planning and management actions for sustainable lake use.
- Principle 3: A long-term, **preventative approach** directed to preventing the causes of lake degradation is essential.
- Principle 4: Policy development and decision making for lake management should be based on **sound science** and the best available information.
- Principle 5: The management of lakes for their sustainable use requires the **resolution of conflicts** among competing users of lake resources, taking into account the needs of present and future generations and of nature.
- Principle 6: Citizens and other **stakeholders** should be encouraged to participate meaningfully in identifying and **resolving critical lake problems**.
- Principle 7: **Good governance**, based on fairness, transparency and empowerment of all stakeholders, is essential for sustainable lake use.

Integration of the WLV represented a cumulative effort from many people, many which have worked extensively on lake basin for decades. The WLV was presented for the first time at the 3rd World Water Forum (2003). Initially presented in English, the WLV has since been translated to several languages, including Japanese, Chinese, Russian and Spanish.

After the development and elaboration of the WLV, it was necessary to try to learn how, and if, its principles were applied. To obtain this information, ILEC members gathered information on a number of lake basins around the world, as the basis for the subsequent WLV Action Report (WLV-AR), which was published in 2006. In addition to discussing specific lake basin management case studies, the WLV-AR also identified the easiest and most difficult WLV principle to apply for each of the different geographic areas considered in the study.

In concluding his presentation, Dr. Rast quoted Nelson Mandela, saying “A vision without action is just a dream. An action without vision just passes time. A vision with an action changes the world”.

**17:30-18:00 Hr**

### **First Day Conclusions**

To close the first day activities, a short session was conducted to discuss the day’s contents, doubts, experiences and proposals, from the perspective of the workshop speakers and participants. The main themes were ILBM’s six pillars, workshop methodology, and basin and sub-basin management.

Among the conclusions were the following:

- A lake and its basin are interrelated and must be understood as a single management unit .
- Having a whole lake vision is important, but lake management actions also must be initiated on the grounds of feasibility. It is better to start simple and build upon it, than to wait until all the conditions and resources required are available, the latter rarely being realistic.
- Actions and strategies derived from ILBM are very different and specific for each case, relying on the particular characteristics of the basin (ecosystems, uses, perceptions, actors, etc.).
- It’s imperative to raise awareness about ecological services provided by lakes (regulating climate, water provision, landscapes, biodiversity conservation, etc.). with lake basin inhabitants. If they don’t perceive this situation, they may not be interested in actions directed to the sustainable use of ecosystems – this is a key to success.

**TUESDAY. 18 November**

**09:30-10:30 Hr**

*“Biophysical Characteristics of Lakes,”* a presentation by Masahisa Nakamura, Director, ILEC Scientific Committee, Japan.

As part of the workshop,, several documents were provided to participants, the most important being the World Lake Vision (Vision Mundial de Lagos, the Spanish version) and the ILBM Report (Managing Lakes and their Basins for Sustainable Use). The latter report was the base document for the workshop. Dr. Nakamura explained the process for developing the ILBM Report as part of a project funded by the Global Environment Facility (GEF), and then presented Chapter 2 in the Report, which includes these topics:

- Lake basins and their characteristics.
- Typology of lakes: What makes them different from other water bodies?
- Implications for lake basin management.

Among these topics, the most interesting for the participants were the related to the long water retention time and the complex response dynamics of lakes, which imply that: (a) a lake can be experiencing disturbing activities for sometime before it becomes visibly apparent; and (b) some time can pass before the application of lake management actions and visible signs of improvement. These characteristics frequently imply challenges for lake managers, particularly pressures from citizens and political areas, which must be taken into account when defining policies and priorities.<sup>2</sup>

### **10:30-11:30 Hr**

**“Human Use of Lakes: Values, Problems and Responses,”** a presentation by Masahisa Nakamura.

Based on Chapter 3 of the ILBM Report, the core issues discussed in this presentation included:

- Resource value of lakes and their basins.
- Typical problems facing the world’s lakes.
- Emerging problems.
- Management interventions.

Among the issues producing the most interest were those related to lake problems and their management. The in-lake problems mentioned included weed infestations (a common problem in Latin America, an example being Lake Chapala, which exhibits large, persistent infestations of water hyacinth), exotic species (again a similar situation with tilapia and *Plecostomus* fishes), and lake area reduction. Of the range of basin problems, one identified by many participants was runoff linked to deforestation and inadequate agriculture practices, something mentioned as an “invisible problem” because of lack of knowledge by the public and many decision-makers about its extents. This problem was identified as a good example of the interdependence between a lake and its basin.

### **11:45 - 13:00 Hr**

#### **Experiences from Workshop Participants: Santiago River Case Study.**

This case study was presented by two participants. Each presented their particular vision of the conditions and problems, concluding on a common ground. The two participants were:

Bs. Cindy McCulligh, Community Promoter, Mexican Institute of Community Development (IMDEC); and.

Bs. Faviola Cortes, Head, Environment Office, Municipality of El Salto (Jalisco state, Mexico).

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<sup>2</sup>There were comments and interventions to the group of speakers after each presentation referred to “Managing Lakes and their Basins for Sustainable Use,” especially on specific issues related to their experiences and fields of expertise.

Ms. McCulligh presented a strong, compelling framework of the river basin situation. The river is heavily polluted with industry and urban waters, with 266 registered industries discharging their wastewater in the river (in addition to the non-registered industries). About 815 m<sup>3</sup>/sec enter the river from urban areas without any kind of treatment. According to several university surveys, arsenic and heavy metals (lead, chromium and mercury), benzene, chlorine benzene and other chemicals are present in the river water. Despite constant health affectation to 26,000 persons, the state and federal government are not meeting their responsibility, basically because there much economic interest created over 40 years (the problems started back at the 1970's). Over the past two years, it has increased to a crisis situation because of a series of bigger health impacts, including the death of a 10 year-old child. The case was presented to the Tribunal Latinoamericano del Agua (Latin American Water Tribunal) and other international groups, which declared it a clear pollution and public health situation requiring urgent action.

Ms. Cortes mentioned the social process has been pushed forward basically for the local population, supported by civil society organizations (CSO). At the beginning of the 1970's, industry was seen as positive, despite the strong alterations to water quality and beautiful landscape (the waterfall located in El Salto was known as the "Mexican Niagara"). However, the health conditions have decreased because of an increased in fabric installments and city population, which increased the quantity of wastewater. Even with a large number of local groups being involved, their efforts are scattered, with little possibility for common actions. Articulation has occurred more frequently with foreign organizations, with alliances with political (government) groups not being stable because of the political situation (mainly administration changes). The current process is moving to more articulated activities, including alliances with researchers to obtain more reliable data about pollutants and their effects. The efforts of state government to apply solutions are perceived as mischievous at this point.

This case generated strong responses from the workshop participants. A common perspective was that there is a strong lack of information and control. Among the comments was that a treatment plant won't solve the problems related to industry. Rather these problems must be addressed at their origin (point sources), and chemical plants must take responsibility for their own wastewater discharges.

The group of speakers mentioned that urgent measures could be applied, but that the recovery process will take years, even if they started today. Further, political will is important, and a major effort can begin with a very humble start. Efforts to clean up Lake Biwa in Japan were spurred by housewives who decided to stop using phosphate detergents, was cited as an example. The Ayuquila River and Sabinos-Zula River (both in Mexico) also were mentioned as useful examples (the first case with 12 years of experience, and the second still in an early stage).

### **13:00-14:00 Hr**

***"Identifying Effective Actions: National and Local Policies,"*** a presentation by Masahisa Nakamura.

This presentation focused on Chapter Five from the ILBM Report. The major topics discussed were:

- Local and national policies.
- Enforceable rules.
- Incentives and disincentives.
- Build “political will”.
- Ensuring administrative sustainability.

A very interesting topic for the audience was the relationship between policies, rules (the force of the law) and incentives-disincentives, given the fact that, both in Argentina and Mexico, there is a gap between the law as a document and its correct application. In both countries and others in Latin America (particularly Chile, according to one workshop participant), water is understood as a basic commodity to be utilized. As a result, human uses have a great preference over ecosystem needs. In fact, on the previous day, in an event held in a location very close to the workshop venue, the Mexican federal government announced creation of an “ecological use” (represented by universities and NGOs) to be considered by basin councils, which work throughout the country, a goal that was proposed and pursued since 2000.

### **15:30-16:30 Hr**

***“The Laguna de Bay Carbon Financed Project,”*** a presentation by M Sc. Adelina Santos Borja, Team Leader, Laguna de Bay Community Carbon Finance Project, Philippines.

Ms. Santos made a comprehensive, clear and illustrative presentation of the step-by-step process required to create the Laguna de Bay project, which currently receives international funds for the measurement and maintenance of ecological conditions to keep the lake’s characteristics as a carbon-sink. She mentioned the several stages of the basin projects, which started on a small scale, pinpointing the need to have good data throughout the process, based on sound science and made feasible for local actors. There are 213 lakes in Philippines, with Laguna de Bay being the only one having this kind of project. She mentioned the problems faced to keep the process alive in a difficult, conflictive context, mainly because each user group interested in enhancing their own interests at the beginning of the project, without due consideration of any other interests. Despite the difficulties encountered, the process is now recognized at an international level, which also helped to foster it at the Philippine national level. Organizations such as the World Bank are also supportive of the project.

The speaker also explained how the Laguna Lake Development Authority was created (a different space, where she has had a key role). Asked about the fisheries and aquaculture management of aquaculture, she answered that there is an important conflict between traditional fishermen and aquaculture practitioners, mainly that the traditional fishermen were harassed because they were perceived as damaging the fish populations. She also mentioned the problem with politicians that frequently function as “padrinos” of several groups, promising to provide protection to foster certain perspectives and actions (a common situation for many of the basins discussed at the workshop). She indicated that an integrative focus, and the structuring of a “win-win” framework, is required, whereby everybody provides something, and gains something in return, together with clear rules and transparency of the process.

**16:40-17:45 Hr**

***“Involving People and Stakeholders, An Essential Element of Effective Lake Basin Management,”*** a presentation by Masahisa Nakamura.

This presentation focused on Chapter Six from the ILBM Report. The most important topics discussed were:

- Benefits of stakeholder involvement.
- Identifying and involving stakeholders.
- The role of NGOs and CBOs.
- Communication, Education and Public Awareness (CEPA).

Responses from the participants were mostly of adherence to the principles presented. It is important to mention that most workshop participations were from NGOs and universities. The awareness issue received much interest, with specific questions being directed to mechanisms for transmitting information in a way conducive to public understanding and acceptance. The speakers highlighted creation of local museums, environmental education activities, community meetings and informative campaigns as part of the solution. A core issue is to identify the interests of the stakeholders, presenting them in such a manner that can be understood by all, and linking wider visions to their particular circumstances.

**17:45-16:00 Hr**

### **Second Day Conclusions**

This was a brief session, which helped to highlight strong impressions generated by the Santiago River case study, and identifying several links to the Laguna de Bay experience through community organization and access to scientifically-based information, as specific means of facilitating the process. The need to develop joint works and create alliances was highlighted, as was the importance of understanding the whole lake basin management framework, and the fact that such a process takes time. The six ILBM pillars must be recognized and used as a beacon, trying to keep both the situation at the present time and the final future goals in mind.

After this concluding discussion, particular information was provided to participants regarding the following day's field trip, including information about the sites to be visited, garments required, etc.

**WEDNESDAY, 19 November**

**9:00-14:00 Hr**

**Field Trip: Visit to Isla de los Alacranes (Scorpions' Island).**

This activity was guided by M. Cs. Alejandro Juarez. This island is located in the middle of Lake Chapala, and represents many of the problems and the current solutions for the lake and its basin. The island has strong religious significance for the Wirrarika people (indigenous group) who perceive it as one of the “five cardinal points” that embody one of their gods. The place experiences large tourist visitation that generates a large quantity of garbage, and it is also used by fisherman to catch charales (several species of endemic fish) which are completely lacking of a management program. The visit began at the Chapala Town pier, utilizing the boat service provided by the local population to reach the island.

There were five stops during the field trip to provide information, generate feedback and answer questions. The diverse group of people provided an interesting assortment of information related to weeds, biodiversity, social conflicts, fish catchment and pollution, among others. Some of the most important comments and additions were:

- Pollution enters into the lake mainly through the Lerma and Zula rivers, both being classified as highly polluted. The rivers carry urban wastewater, industrial chemicals (tanneries, tequila wash water, furniture industries, petrochemicals, etc.).
- According to several scientific studies, the lake fish concentrate heavy metals entering the lake from its inflowing rivers. This public health issue hasn't been recognized by the government at this point.
- Water hyacinth infestation derives from the presence of wastewater and agrochemicals. It is currently being controlled with glyphosate and biological control (weevils). It was possible to observe several specimens of this insect inside some weeds.
- The terrestrial biodiversity in the Lake Chapala basin equals, and even exceeds, the aquatic biodiversity. The most extended ecosystems are deciduous dry forests and pine-oak forests.
- Lake Chapala previously declined to only 13% of its maximum volume in 2002, with the shoreline receding 6 kilometers from its original point. As a result, there were strident clashes between several groups fighting for the available water.
- Boats that provide service for tourists are operated by former fishermen that formed cooperatives as a way to organize themselves, and control the excessive prices charged tourists.
- Tourist promotion has been very erratic. There is a Catholic chapel recently re-constructed as a way to attract religious tourism, despite the fact there is no record or historical reports on this topic. On the other hand, a rich group of legends and historical facts has been neglected until now.

After visiting the island, the workshop participants return to Chapala's pier to get an impression of the city and complete the field trip.

**15:00-16:45 Hr**

### **Experiences from Workshop Participants**

***“Ecological, Touristic, Educative and Landscape Restoration Program of the Suquia River,”*** a presentation by Bs. Eugenia Alvarez, Ecology Municipal Office, Cordoba, Argentina.

Cordoba is the second biggest city in Argentina. The Suquia River flows down from the mountains and crosses the city, creating a close interaction of urban population with natural aspects. The restoration program is meant to provide an orderly approach to a problematic context, given the fact that urbanization is now a major issue confronting the river.

Four work groups were created to organize the restoration process: Environment; Urban Planning and Infrastructure; Environmental Education and Tourism; and Legal Regulations. Each is comprised of researchers, experts and government officials. Each group participated in an analysis workshop that defined the common ground for all the groups. They then worked to gather information from documents and field research, creating particular diagnosis that were later synthesized in a final workshop to organize proposals and prioritize them. The process is currently ongoing, pushing the actions forward, being particularly linked to community participation as part of a general scheme.

***“Lake Dique and Lakes USBI Sanitation Program,”*** a presentation by Bs. Roxana Lopez. Researcher, Limnology and Basin Management Laboratory, University of Xalapa, Mexico.

These are four artificial lakes in the middle of Xalapa City, located in the Gulf of Mexico area. There is concern about their condition because they are used for sports and recreational purposes, despite receiving heavy discharges of urban wastewaters. In an effort to restore the lakes, the University of Xalapa is conducting research and structuring a proposal to solve problems through the involvement of local actors and the availability of a master plan.

Both presentations received questions from workshop participants, each being related to urban lakes. The Suquia River presentation received praise, with questions being related mainly to problem-solving, creating of political will, and funding. The Xalapa River experience, although in an early stage, also received suggestions, comments and encouragement.

***“The Sub-basin Councils, An Alternative of Social Participation for Basin Management,”*** a presentation by Sergio Antonio Silva, University of Guanajuato, Mexico.

Dr. Silva presented an analysis of the development of sub-basin management currently being applied in USA, including the reasons that allowed the structuring of the process. His analysis was mainly derived from social perceptions that government alone wasn't sufficient to solve the environmental problems, combined with an increasing interest in solving local problems with direct citizen involvement. This presentation generated strong interest from the participants because of the physical closeness of the cases, and because, even with the physical closeness, the model was almost unknown among the workshop participants. There was an integrative measurement from the speaker of the benefits and problems derived from the application, which produced a strong interaction within the workshop participants. Among the advantages of this approach, the speaker mentioned the close interactions with local actors, reduced research costs because of the relatively small study territory, access to information, and the possibility of taking actions in shorter time, all facilitating a better probability of success. Further, the local

population tends to feel a stronger identification with representatives taking part in the councils, a situation that facilitates mutual trust.

#### **16:45-17:20 Hr**

***“Application of Hydrologic Model to Lake Basin Management,”*** a presentation by Bs. Katsuya Tanaka. Associate Professor, Research Center for Sustainability and Environment, Shiga University, Japan.

Mr. Tanaka made a very clear, concise presentation, focusing on the use of computational programs to produce graphics and images that simplify analyses. This approach is attractive because the resultant images compress a large quantity of relevant information, thereby allowing researchers to understand several aspects of the processes more precisely, and changes happenings in the lake and in the basin. This presentation represented a surprise for many workshop participants, even more when a list of web pages with free graphic programs was presented. These tools were perceived as something extremely useful and practical. The subsequent questions related mainly to particular model applications, costs, and difficulty of use.

#### **17:20-18:00 Hr**

##### **Experiences from Workshop Participants.**

***“La Alberca Lake, Michoacan State, Mexico,”*** a presentation by Dr. Gabriela Velarde. Universidad Autonoma de Guadalajara (Autonomous University of Guadalajara), Mexico.

This small water body is a remnant of the original surface of Lake Chapala, being severed from it in 1908 with the construction of the Ballesteros dike. This small lake contains several fish species that have disappeared from Lake Chapala, a situation that might justify the declaration of this wetland as a Ramsar site. The lake currently receives no management attention, although there have been some efforts, although not very structure, to declare it a natural protected area. There also is a concern about the future status of the native fish species because of a lack of regulations.

***“Integrated Dams Management,”*** a presentation by Bs. Angeles Esquibel, Secretary of Rural Development, Jalisco State, Mexico.

Ms. Esquibel presented the program regarding this dam, which is conducted by the Jalisco state government. The program is directly mainly to organizing fishermen, who originally asked for help on this matter because of conflicts generated by the use of this resource in several reservoirs. Other actors are not considered, and are therefore not using a basin management approach. There is a civil organization being created to integrate fish users, with the idea being that this organization could work directly with them, thereby integrating fisheries and other uses (tourism; urban development). Several workshop participants suggested a broader approach to addressing the lake problems.

#### **17:50-18:00 Hr**

### **Third Day Conclusions**

Dr. Nakamura highlighted the importance of having concrete results at the end of this workshop, mentioning that ILBM must be applied to specific lake case studies. Lake Chapala could be one of those focal points, entering into a trans-continental exchange of experiences, thereby not only learning from other projects, but also providing a useful example. A big question is how to get funding for such efforts. Although it is important to identify and access international funds, it is also important to create conditions that create national and regional funds.

### **THURSDAY, 20 November**

**09:30-09:50 Hr**

***“Involving People and Stakeholders: An Essential Element of Effective Lake Basin Management,”*** continuation of a presentation by Masahisa Nakamura.

Taking a comprehensive approach to the previous day presentations, Dr. Nakamura emphasized the importance of integrating stakeholders in the lake management process, while also keeping in mind the need to increase the ability to transform participation and proposals into realistic policies. The policy framework is very important in this regard because it provides a forum, rules and dialogue space to discuss and attempt to solve conflicts. Although it could be hard to reach an ultimate solution, not utilizing this approach could result in many years’ efforts being undertaken without significant results being achieved.

**09:50-11:30 Hr**

### **Experiences from Workshop Participants.**

***“Use of Artificial Wetlands for Water Treatment in Small Communities,”*** a presentation by Bs. Jazmin Gonzalez, Universidad Nacional Autonoma de Mexico (UNAM- National Autonomous University of Mexico), Mexico.

Given the fact that an extended portion of Mexico exhibits arid or semi-arid characteristics, and that many small and rural population centers have difficulty accessing water resources, it is important to promote alternative sanitation processes that are adequate for the described conditions. An alternative approach of artificial wetland was applied in Morelos state, located in the central portion of Mexico, in the Aplataco River sub-basin. The selected model is denoted as “bio-filtering by organic matter,” and was developed by the Mexican Institute of Water Technology (IMTA). It uses natural roots as substrate for plants (papyrus) planted in tanks, through which wastewater flows and is cleaned. This project currently is working at a demonstrative level, with promising results. A complementary environmental education program is required for its wider application, mainly because of lack of knowledge on the part of the general population of this alternative. Further, this alternative must accepted and

promoted by the federal water agency which currently only promotes treatment plants based in technology that tends to be expensive to operate, and which is frequently abandoned after some year's operation.

***“Forests and Lakes,”*** a presentation by Bs. Jose Carlos Martinez, Reforestamos Mexico.

The strong focus of this civil organization is forest management, conducting programs of environmental education, reforestation and community development. The organization strives to assist local communities to manage their own resources, providing consultancy, technical advisory and community facilitation to solve conflicts. They are funded by a food company, and currently apply their vision in 13 Mexican states. To facilitate their success, they make alliances with local civil society organizations (e.g., with Corazon de la Tierra in Jalisco) as a way to multiply their resources and efforts.

***“Control and Use of Plecostomus in El Infiernillo Dam,”*** a presentation by M. Sc. Carlos Escalera, CIIDIR-IPN, Mexico.

*Plecostomus* is an invasive fish that entered Mexican territory in 1995. Its spread reached El Infiernillo Dam, one of the biggest in Mexico, in 1998. It has generated several economic and ecologic problems because of its adaptability and its lack of predators. Further, its body is covered with big scales that act as armor and rip fishing nets. This species has been displacing native fishes, and even other exotic ones, drastically reducing fisheries and affecting the local economy. The study conducted by Mr. Escalera reveals this animal can be used to obtain fish flour that is useful for agriculture (it is nitrogen rich), with positive possibilities if used this way. It is necessary to adapt fish catching procedures to use the fish in this manner, training fishermen and linking them with farmers to ensure consumers for the fish flour.

**11:45-12:45 Hr**

***“Informing the Process: The Role of Science,”*** a presentation by Dr. Walter Rast, Director, International Center for Watershed Studies, Texas State University, USA.

Based on Chapter 8 of the ILBM Report, the core issues included:

- Importance of reliable information.
- Information needs for ILBM.
- Providing innovative solutions.
- Use of models.
- Monitoring.

Something that made an impression from this presentation was the need to obtain reliable data and, even more important, to make the data understandable to stockholders, as well as making hard-to-see connections evident for all. Another point of interest was that not only was scientific information important, but social information also could be very useful, particularly in situations where no scientific studies have been conducted..

**13:00-13:40 Hr**

**Experiences from Workshop Participants.**

***“Projects of the Water State Commission (Jalisco),”*** a presentation by Armando Muñoz, Raul Acosta, Raul Lopez and Sofia Hernandez, CEA, Mexico.

Representing the government agency in charge of assuring water provision for human use (drinking, industrial use, etc.), and of water treatment in Jalisco state, four participants presented their projects. Three prominent problems are being addressed by this institution in the Lerma-Chapala basin; namely, water hyacinth infestation; crude wastewater discharges; and high water fluctuations over the past decade. The work of CEA emphasizes technical aspects. Weeds are being controlled through application of glyphosate, which reduced the extent of water hyacinth infestation from 8,000 to 1,800 hectares in two years. Although treatment plants are being constructed all around the lake (in the Jalisco state portion), their operation has been conflictive because municipalities frequently refuse to assume the related costs. Another widely-recognized problem is that of treatment of industrial effluents, which have been treated in a very casual manner. In regard to water volume fluctuations, CEA is part of the Lerma-Chapala Basin Council, which negotiates water assignments. Another activity presented was a botanical garden dedicated exclusively to local biodiversity, located in the Huentitan Canyon, very close to Guadalajara City.

**13:40-14:10 Hr**

***“Lessons and Management Processes at Lake Atitlan, Guatemala,”*** a presentation by M. Cs. Juan Skinner, ILEC Scientific Committee.

Lake Atitlan is a deep water body, originally formed within a volcano crater that functions as depository of water collected on an extensive surface of Guatemalan territory. It has impressive landscapes that have allowed the development of a strong tourist industry and a diversity of water uses. There is a larger indigenous population that perceives the lake as valuable for practical and mystical reasons. Collecting tul (an aquatic plant) provides income for many families. Principal problems in the lake basin are related to untreated wastewater, which enters into the lake through the Quiscab and Panajachel rivers.

As often happens in such situations, fragmented political views have lake basin management difficult, as has the fact that the necessary investments are perceived as being too expensive and the results requiring too much time to become evident. Understanding that perceptions must change to improve the lake environment, two groups started working to raise public awareness, Amigos del Lago (Friends of the Lake) and Pro-Lago Atitlan. Several research efforts also have been conducted simultaneously to obtain reliable data on lake functions and processes. Further, processes that facilitate raising the involvement of lake stakeholders have been a key to lake basin management, helping to overcome separate lake visions and interests. In this case, as with many others in Latin America, cultural perceptions become a priority in that, if stakeholders don't understand their role as part of a bigger lake basin management scheme, it's extremely difficult move forward with effective basin management.

**15:30-16:30 Hr**

**Experiences from Workshop Participants.**

***“Support Program for the Environmental Recovery of the San Roque Lake Watershed,”*** a presentation by Bs. Teresa Moncarz, Asociacion Civil Los Algarrobos (civil society organization), Argentina.

Significant tourism activities are developed within the San Roque Lake Basin, being the second most important area in Argentina for this activity. The water demands are high and increasing, despite the fact that the basin is a semi-arid territory. Together with a massive urbanization process, deforestation has been increasing, increasing the need for a management plan to control and reduce problems, and assure sustainability for the medium- and long-term. Relevant management activities have been addressed as a collaborative process, entwined in a twinning agreement with the International River Foundation as granter, and the Grand River Conservation Authority (Canada) as accompanying partner. The process is in an early stage, focusing on integration of the watershed plan.

***“Lerma-Chapala Basin Restoration through Sub-basin Management,”*** a presentation by M. Cs. Alejandro Juarez. Corazon de la Tierra, Mexico.

Lake Chapala is the largest lake in Mexico, and the third largest in surface area in Latin America. The Lerma-Chapala basin, which provides water for the lake, is a very complex, important and degraded territory, with many stakeholders focusing solely on their own interests (basically for water access), and lacks a common management plan that could integrate these different, often conflictive users.

Although there have been five attempts since 1955 to create a basin management plan, it hasn't been possible to apply it since stakeholders exerted pressures not to be “damaged,” as they perceived it. A characteristic affecting the process is that no one wants to provide resources that could benefit others, being linked to a very shattered political vision. As a way to overcome this obstacle, a sub-basin management approach is being fostered as part of a whole basin vision. With this focus, an international workshop was conducted in 2006 to create a Proposal of Action Plan for the Basin, creating coalitions with federal and state groups. This process exhibits good progress, with the intention of starting implementation of the management plan of the two sub-basins in the second half of 2009.

**16:45-17:45 Hr**

***“Mobilizing Sustainable Financing,”*** a presentation By Masahisa Nakamura.

This discussion focused on Chapter 9 of the ILBM Report. Emphasis in this presentation focused on creation and operation of locally-generated funds, as a means of directly linking people who use the lake and basin resources. An important issue to remember is that clarity in the utilization of collected resources must be complete, to create positive perception and trust. Creation of multi-participative organisms is a good alternative, accompanied by clear rules that allow positive coordination and feedback.

**FRIDAY, 21 November**

**09:30 Hr**

**Experiences from Workshop Participants.**

***“Sustainable Development at a Regional Level; Evaluation of the Lerma-Chapala Basin Council,”*** a presentation by Dr. Rodrigo Flores. Technological Institute of Higher Studies (ITESO), Mexico.

This presentation was an evaluation of the conflicts generated inside the basin council, analyzing how the term “sustainable development” has frequently been used in contradictory ways. Derived from the shrinking crisis on Lake Chapala (2000-2003) happened several quarrels between urban users (related to ecologist movements) and farmers. The situation acquired political facets that forced restructuring inside the council, even if only at a limited decision level. As result of the crisis several sectors strengthened themselves, changing relations structure inside the council.

***“Environmental Management of the Wetlands Technical Committee, Jalisco State,”*** a presentation by Bs. Antonio Ordorica. SEMADES (Secretary of Environment and Sustainable Development, Jalisco State), Mexico.

Mr. Ordorica discussed the structure, goals and activities of this group, comprised of universities, civil organizations, state and federal agencies. Attributes of this organization include promotion of scientific research, fostering social involvement, and structuring management plans, especially in the 11 Jalisco wetlands with Ramsar categorization. Among the activities currently being accomplished by the Committee is promotion of Lake Chapala as a new Ramsar site.

***“Evaluation of Water Quality for Aguamilpa Dam,”*** a presentation by Yazmin Jarquin and Juan Gallardo, CIATEJ, Mexico.

This huge dam, located in the state of Nayarit (Mexico), receives inflow from the Santiago and Huaynamota rivers. Water analysis has been developed as a means of monitoring problems, and detecting changes in its physico-chemical patterns. Results of this research include the observations that the dam exhibits a eutrophic condition, that its water is mainly alkaline, being derived from apportions of Santiago River (which carries a high concentration of chemicals from Guadalajara City industries), and that decreased oxygen concentrations have been affecting fish populations.

**11:30-1200 Hr**

**Experiences from Workshop Participants**

***“The Xaya-Pixcaya Sub-basin Experience,”*** a presentation by Bs. Melvin Navarro. Association of Private Natural Protected Areas, Guatemala.

A coalition of federal and state government agencies, together with civil groups (both national and international) have started a process for managing this sub-basin, which is

part of the Xaya River system. As part of these activities, a basin characterization was conducted, finding that principal sources of the sub-basin problems were deforestation linked to increasing farming and cattle raising activities; wastewater pollution that threatens freshwater provision; and depletion of underground water. The process currently involves a geographical delimitation of micro-basins, with the creation of a micro-basin council to be used as model for the rest of the sub-basin; and a general Action Plan including water treatment plants; environmental education; forest soil conservation; and strengthening of stakeholder's organization skills as general themes.

**12:00-13:20 Hr**

***“Experiences of Integrated Basin Management in Mexico,”*** a presentation by Helena Cotler, Director, Integrated Basin Management Office, INE (National Institute of Ecology), Mexico.

There are several integrated basin management experiences in Mexico, most being short term in nature. A problematic concern is the poor understanding of this concept by decision makers on all levels of government, and by the general population. Another major problem is the lack of reliable data. In this regard, there is an important document that was recently finished and presented; namely, the “Atlas de la Cuenca Lerma Chapala” (Atlas of the Lerma-Chapala Basin), which integrated the results of the work of 20 researchers from universities, private centers, civil organizations and federal agencies. The information in the atlas is presented in a clear, easy-to-understand manner, and containing relevant maps and tables. Construction of the atlas implied tracking of a large quantity of information, and synthesizing and translating it into a readily-understandable language.

The INE has been working with other federal agencies of the environmental sector to identify five Lerma-Chapala's sub-basins of high priority, recognizing the approach to solve the problematic conditions of the whole basin is quite difficult to achieve because of conflicts, the basin's large size, and the discontinuity of managers and administrative offices. Further, this integrative approach generates slow changes that are not easily perceived by lake basin dwellers. These conditions make the sub-basin approach more positive and easy to apply, making easier to train local technicians, construct agreements with local actors, cement compromises, and create awareness among the general population.

**13:30-14:00 Hr**

### **Experiences from Workshop Participants.**

***“Water body Network of the Federal District: A Replicable Experience,”*** a presentation by Bs. Constanza Mora. Red de Cuerpos de Agua del Distrito Federal, Mexico.

Mexico City is located on a surface originally occupied by a great lake. The administrative figure that currently manages the territory is the Federal District (equivalent to a state). There is a multiplicity of small water bodies as remnants of the original lake, some natural and others artificially made, facing similar management deficiency problems. Many of these lakes have strong cultural significance (e.g.,

Xochimilco lagoons, declared Human Patrimony by UNESCO), and even productive and recreational use. Taking community participation as a major element, this organization promotes its management to keep and sustain their unique features in a heavily-populated city. As an example, they promote the use of artificial wetlands to solve pollution and eutrophication processes that affect the Virgilio Uribe canoeing area, created in 1968 as part of the infrastructure for Olympic Games. This group subsists entirely on its own resources, and has financial problems it is trying to solve in order to offer their advisory services.

**15:30-18:00 Hr**

### **Participative Workgroups: Making ILBM Real**

The goal of this portion of the workshop was directed to generate feedback from all workshop participants, and to define the kind of knowledge acquired, the particular conditions of their basins, the possibilities for applying ILBM in their work areas, and the kind of proposals and compromises they were able to define.

Three working groups were integrated for this purpose: one for the Santiago River, a second for the Lerma-Chapala Basin, and the third from the remaining participants. The group of speakers remained together, being accessible to help participants as needed, and to provide clarification on particular points or information.

The three groups utilized a number of questions to guide their deliberations and conclusions, as follows:

- Which of the ILBM six pillars are currently well developed in your basins?
- Which pillars are weak in your basin?
- What is the process of the last ones?
- What is necessary to foster a management process in your basin, using ILBM as the model?
- What can you and your institutions provide to the process?
- What kind of compromises can be made to foster this approach?

**SATURDAY, 22 November**

**9:00 Hr**

### **Continuation of Participative Workgroups: Making ILBM Real.**

**12:00 Hr**

### **Presentation of Participative Workgroup Results.**

Following completion of individual participative workgroups, a joint session was conducted to present the results of all the workgroups. The products were used to develop a common declaration, the “Chapala Statement 2008”.

**13:45 Hr**

### **Workshop Declaration.**

Summarizing the work of the three participative working groups, “The Chapala Statement 2008,” was prepared. It was read for the whole group to check its coherence and integrity. The complete text is as follows:

Participants in the First Latin American Workshop on Integrated Lake Basin Management held November 17 through 22, 2008 in Chapala, Jalisco, having received training in the different components of integrated lake basin management (ILBM), participated in the analysis of cases from Latin America and other parts of the world, analyzed the conditions in the watersheds where we carry out activities, identified problems, needs and key elements to structure ILBM processes that permit the restoration and conservation of our lakes and the basins of which they are a part, that foment broad stakeholder participation, with clear rules and well defined management policies, that identify the most suitable technologies to address diverse challenges, and that generate and apply the necessary resources for their sustainable management, hereby declare that:

1. We identify ILBM as the fundamental framework for solving the diverse and acute problems experienced within our watersheds, due to its comprehensive approach to social and ecological factors and its integrating and practical methodology based on the analysis of case studies worldwide.
2. We recognize the construction of governance processes as a key element of IBLM given that environmental problems stem from human activity and their solutions call for linkage and cooperation among the different stakeholders for the management of water bodies and the territories of which they are a part.
3. We have been strengthened by the Course-Workshop activities and contents, having generated and deepened communication and exchange networks with representatives of academic institutions, NGOs, government agencies and international groups.

### **Proposals**

1. To utilize the ILBM as a basic tool for territorial ordinance in Mexico and the whole of Latin American countries, considering that water bodies and their watersheds are complex and indivisible spaces, keeping in mind that the management of watersheds is a much broader issue than the mere distribution of water resources captured within them.
2. Given the difficulty of imbedding effective management processes in watersheds that extend over large surface areas, it is important to consider and give impetus to the management of sub-basins located within them as a way to generate the involvement of regional groups and to obtain short-term results, without losing sight of the integrity of the watershed as a whole.
3. That the federal government or the Michoacán state government carry out the process to obtain the declaration of "La Alberca" Lake as a Ramsar site for its character as a reserve for fish species that are probably unique in the world considering that its location makes it a relic of what was the full extension of Lake Chapala prior to 1908.

## **Agreements**

### General

The group of participants is committed to generating and operating a task network that will allow us to maintain an exchange of data, share experiences and contribute knowledge in a rapid and effective manner.

### For the Santiago River watershed:

- Produce a guide of responsibilities and attributions of the institutions involved in the watershed's management in order to orient stakeholders on how to request information, facilitate decision-making and reduce conflicts.
- Strengthen the internal structure of NGOs to improve their levels of communication between institutions and produce common working platforms, as well as to strengthen the degree of dialogue among one another and with the rest of the stakeholders that are involved.
- Draw up a list of research topics that will allow academic institutions and other entities to organize their work in such a way as to avoid duplicity and overlapping, favoring concordance and the best use of resources, and assuring the practical application of research findings.

### For the Lerma-Chapala Basin:

- Create specific alliances to involve the different stakeholders in structuring and applying an action plan for the direct Lake Chapala sub-basin.
- Promote the creation of an Environmental Education Center in the Chapala-Jocotepec corridor.
- Organize an annual general meeting to verify the follow-up and progress of the proposals and commitments defined in this document. This meeting will be scheduled on a rotating basis in each of the five basin states.
- Integrate a descriptive case study of Lake Chapala so that it may be divulged worldwide by ILEC and other similar organizations.
- Analyze, systematize, link and socialize existing information through the creation of a center for documentary research.
- ILEC assumes a commitment to promote the case of the Lerma-Chapala watershed as an ILBM focal point for Latin America, linking to the process that is being developed by persons and institutions in the region over the next two years.

With the above, the participants are confident that the process of restoration and management of the watersheds of the Suquia River and San Roque Lake (Argentina), Atitlan Lake (Guatemala), Lerma-Chapala, Santiago River and others in Mexico will substantially improve in levels, favoring the conservation of ecosystems and the well-being of human populations. A list of participants is attached.

14:00 Hr

Closure of Workshop, and group photograph.