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Lake Basin Management Initiative  
Thematic Paper

## The Role of Communication, Education and Public Awareness (CEPA) in Lake Basin Management

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### **Main Lessons Learned:**

1. CEPA is often slow-acting, and is best understood as a series of investments for significant future returns.
2. CEPA actions must be placed within the larger economic & social context.
3. CEPA programmes should be sustained and sustainable.
4. Involvement of all stakeholders in identifying issues and their solutions will usually improve the effectiveness and efficiency with which CEPA can effect change.
5. Dissemination of information and data to the stakeholders is important.
6. A variety of CEPA methods may be needed within one CEPA programme.
7. Identification of the target group(s) is an important first step in designing an effective CEPA programme.
8. Integrated approaches should be considered in designing and implementing CEPA programmes.
9. Undertake situation analysis and problem identification before designing the CEPA programme.

10. Indicators of success, and monitoring & evaluation procedures are essential to assess the effectiveness of CEPA programmes.

## **Introduction**

The lake systems of the world have for centuries served as centres of population. Lakeside communities have become closely integrated with the natural cycle of lakes, adjusting to seasonal changes in fish distribution and availability, to vegetation growth and to changing water levels. In almost all lake systems, the local population use a diversity of direct resources, including fish for local consumption or export, vegetation for livestock or construction, and lakeshore substrate for vegetables and other crops. Long-term maintenance and management of the lake basin therefore require that due consideration be given to the needs and attitudes of the local population (Hook *et.al.*, 1988).

The lake systems provide a range of ecosystem services: supporting services (e.g. nutrient cycling, primary production), provisioning services (e.g. food, freshwater, fuelwood, genetic resources), regulating services (e.g. climate regulation, water regulation, disease regulation, water purification) and cultural services (e.g. spiritual and religious, recreation and tourism, aesthetic, inspirational, educational, and cultural heritage). Changes in these services affect human well-being through impacts on security, the basic material for a good life, health, and social and cultural relations.

The management and conservation of lakes for their sustainable use is a dynamic process. Narrowly-focused or static approaches that only highlight the elimination of specific threats to water systems, such as control of floods and pollution, are not sufficient. A visionary assessment of policy, planning, financing, technology and education is needed to provide fundamental guidance on managing and conserving the world's lakes (ILEC & UNEP, 2003). The World Lake Vision, produced by the International Lake Environment Committee (ILEC) and United Nations Environment Programme (UNEP) in 2003, provides the following assessment of the role of public awareness in lake management:

“Limited public awareness of the human impacts on lakes contributes to the degradation of the values and uses of lakes. Inadequate public awareness may result from insufficient knowledge, data and/or understanding on the part of citizens, local authorities, decision-makers, the media, industry and others of their roles, either individually or collectively, in causing lake problems or in helping to solve them. Further, in some cases, governmental agencies and/or decision-makers may believe that the only appropriate role for the public in such matters is to provide the required funds for the programs and activities to address lake problems, in contrast to the proactive approach of working with the public to identify and resolve current problems and/or avoid similar problems in the future. On the other hand, citizens may think they need to rely exclusively on governmental agencies and/or decision-makers for solutions to

such problems. Experience around the world, however, suggests that, where it is feasible, the involvement of the public can be beneficial in identifying lake problems and in developing sustainable and publicly-supportable solutions to them. A major contributor to the lack of understanding and awareness by the public and decision-makers regarding lake degradation is the subtle nature of many types of lake problems. Such problems can manifest themselves very slowly, often over generations. They may only become evident after the degradation has become very severe, and even potentially irreversible. This subtle nature of lake environmental degradation makes it harder to create awareness of lake problems among the public and decision-makers, and to initiate needed remediation or restoration activities in a timely manner.”

### **Investing in CEPA**

Communication, Education and Public Awareness (CEPA) is one of the major techniques available to lake basin managers. Any effort that depends upon a change in behaviour or compliance with new legislation relies on CEPA if the change is to occur. It has been suggested that the greatest and most depressing problem in conservation is not habitat loss or overexploitation but the human indifference to such problems (Balmford, 1999).

The five common objectives of a CEPA programme are (i) to encourage a general interest in conservation; (ii) to generate greater awareness of conservation issues; (iii) to bring about a specific change in opinion; (iv) to disseminate specific information; and (v) to build capacity (Sutherland, 2000).

CEPA is often considered separately from other aspects of conservation, but in practice most conservation programmes require one or more elements of CEPA and it is essential to consider the conservation objective of a relevant CEPA programme. For example, maintaining protected areas is easier if there is public support, which often leads to political and financial support and greater adherence to rules and regulations (Shepherd & McNeely, 1998).

The following are some of the opportunities and benefits that may arise from investing in CEPA (Ramsar Bureau, 2001):

- a) wetland issues can increasingly become part of the business of other sectors and not just that of the environment, thereby mainstreaming the conservation and wise use of wetlands into society and government;
- b) communities use resources sustainably as a result of engagement and agreement to collaborative plans, thereby reducing conflict;
- c) communities agree to invest in restoration and long-term stewardship of wetlands; and
- d) there is a public constituency that speaks for and helps set the agenda for wetland conservation and wise use.

## **Context and purpose of this paper**

The Lake Basin Management Initiative is being implemented by the World Bank with funds from the Global Environment Facility (GEF), and it is being executed by ILEC, in cooperation with LakeNet. LakeNet's participation is funded through a grant from USAID as a joint project with Saint Michael's College (Colchester, Vermont, USA) and through the GEF.

The general objective of this initiative is to strengthen capacity for improved lake and reservoir basin management at local, provincial, national and global levels. The project will assess and draw lessons from the achievements and implementation of several GEF/Bank and non-GEF projects. The particular objectives are to document experiences through case studies; facilitate the sharing of experiences between managers and stakeholders; accelerate learning and implementation of effective lake and reservoir management; and improve the quality of lake and reservoir management.

The project is expected to contribute insights on how to manage lakes and reservoirs sustainably. In doing so, it will also strengthen the ability to manage complex ecosystems sustainably, and address critical policy, investment and other issues constraining effective and sustainable lake and reservoir management. The expected outcomes of the project include lessons for improving GEF and World Bank- supported lake management projects; improved understanding and enhanced capacity for implementing and addressing the principles of sound lake management; and improved sharing and dissemination of information on lake management programmes to national and local governments, lake management practitioners, NGOs, and other stakeholders in lake basins.

The project is studying management experience on 10 lakes for which there have been GEF-funded international waters or biodiversity conservation projects and on 22 lakes for which there have been no GEF-funded projects. The study has commissioned an "Experience and Lessons Learned Brief" for each of 28 lake regions, with a total of 32 lakes (the five North American Great Lakes are covered in one brief).

This paper analyzes the "Experience and Lessons Learned Briefs" with respect to the treatment of the role of Communication, Education and Public Awareness (CEPA) in lake basin management. The purpose of the analysis is two-fold: (i) to evaluate the treatment of this topic in the individual experience briefs (presented as Appendix 1); and (ii) to develop an empirical global picture of the topic, on the basis of compilation of the treatment of the subject in all of the individual lake case studies.

## **Treatment of the topic**

In undertaking the assessment of the experience briefs, it is important to first establish what is meant by the term "Communication, Education and Public Awareness". The Convention on Wetlands (Ramsar Bureau, 2001) provides this advice, based on the *Mainstreaming Biological Diversity* publication (produced by UNESCO, the Convention on Biological Diversity, and the World Conservation Union – IUCN), and which is intended to give a sense of what practitioners in this field commonly mean by these terms:

- **Communication** is the two-way exchange of information leading to mutual and enhanced understanding. It can be used to gain the involvement of ‘actors’ and stakeholders and is a means to gain cooperation of groups in society by listening to them first and clarifying why and how decisions are made. In an instrumental approach, communication is used with other instruments to support wetland conservation, to address economic constraints, and to motivate action.
- **Education** is a process that can inform, motivate and empower people to support wetland conservation, not only by inducing lifestyle changes, but also by fostering changes in the way that individuals, institutions, business and governments operate.
- **Awareness** brings the issues relating to wetlands to the attention of individuals and key groups who have the power to influence outcomes. Awareness is an agenda setting and advocacy exercise which helps people to know what and why this is an important issue, the aspirations for the targets, and what is, or can be done to achieve these.

None of the 28 experience briefs have defined CEPA in this specific sense. However, instances of the more general meanings of communication, of education, and of public awareness are dispersed widely throughout the briefs. This thematic paper attempts to organize the generally scattered treatments of CEPA in the briefs according to established CEPA concepts and approaches, and from this, to draw lessons learned concerning the role of CEPA in lake basin management.

### **Lessons learnt concerning the role of CEPA in lake basin management**

***Lesson 1: CEPA is often slow-acting, and is best understood as a series of investments for significant future returns.***

Each CEPA investment must be strategically linked, to ensure direction, continuity and effect. Strategic thinking and coordination between activities and programmes should be important components of CEPA action planning, which should also be realistic about timescales.

The Lake Nakuru brief notes that donor driven projects are often put under pressure by both donors and partners to show results; whereas it has been easy to quantify certain activity outputs such as number trees planted, metre of terraces constructed and number of people trained, it is not always easy to demonstrate tangible impacts of many other activities such as education and training. The Aral Sea brief reports that experiences gained from the implementation of international projects in the region showed that the technical components of projects were usually implemented successfully, while the ‘soft’ components of the projects, aimed at developing public awareness were usually unsuccessful. The Lake Biwa experience shows that changing values and empowerment of local communities over time contributed to the increase in efforts to conserve the lake and its littoral ecosystems.

In the case of Lake Nakuru, it was found that despite 10 years of CEPA-related actions, practically all the partners are not sufficiently empowered to carry on with the work and while

some momentum has been built at the grassroots level, community organization and awareness creation have not reached a critical mass to become self-propelling.

It is important to note that effective application of CEPA can be short (such as when a trained facilitator is involved in a project to assist with a community participation event). Other CEPA input will need to be complex and sustained (for example a public awareness campaign to change a particular practice). As a general rule of thumb, a strong CEPA programme (with both short and long-term objectives) should be in place from the beginning to complement the planning and technical work of lake basin management; this point is made in both the Lake Champlain and Lake Toba experience briefs.

***Lesson 2: CEPA actions must be placed within the larger economic & social context.***

The Lake Baikal brief makes the point that watershed management policies and actions must link with regional economic development priorities, or risk being ignored. The authors maintain that policy-makers should work hard to show the economic and social benefits of proposed environmental conservation legislation, projects, or policies in the Baikal basin. This message also comes through in the experience brief from Lake Cocibolca. The Dianchi, Laguna de Bay, Malawi/Nyasa, Nakuru, Toba, and Victoria briefs recognize the lack of awareness about social and economic benefits as a limitation to successful implementation of lake management efforts.

CEPA solutions that are not socially acceptable cannot hope to achieve their goals. The needs of people (survival needs, responsibilities to family or employer, for example) are paramount in practice. The Laguna de Bay and Malawi/Nyasa experiences recognize the importance of making the link between raising-awareness and developing poverty alleviation actions to reduce pressure on the lake's resources and recommends that CEPA programmes be directed at people's interest and concerns. In the Lake Bhoj experience, the shifting of the idol immersion venue from the Upper to Lower Lake was a direct response to the need to reduce stress on the Upper Lake, but was only made possible because of efforts to understand and work within the existing cultural and religious context.

The Lake Toba brief notes that it is critical to bridge community awareness with real action toward sustaining the lake ecosystem, which at the same time also renders benefit by improving the social economic condition of the community; it also makes the point that behaviour change does not happen until people realize or experience the benefit resulting from the change.

***Lesson 3: CEPA programmes should be sustained and sustainable.***

This relates to the point made in Lesson 1 about the need to develop realistic timescales for CEPA programmes. Projects are often established on short-term funding or with a burst of enthusiasm. It is also often easier to get funding to set up a new project than to sustain an existing one. It is thus sensible to plan carefully, perhaps by linking with institutions that will give long-term funding, so that the project can persist in the long term. It is often an objective for externally organized programmes to devolve responsibility to the local community; it is important to remember that this may require training and capacity-building in order to be sustainable.

Small watershed and lake associations play an important role in CEPA but are unable to consistently maintain their efforts in restoration and education activities, because of financial limitations. The Lake Champlain brief notes that while Organizational Support Grants have done much to build capacity that will make small organizations become functional and sustainable; this kind of support has to be sustained. Both the Lake Ohrid and Lake Nakuru briefs report that donor-driven projects helped catalyse capacity-building within NGOs but this could not be sustained after the funds ran out. The Lake Victoria experience reports that community involvement in tackling the water hyacinths problem has been an important part of the successful outcome but there is a clear need for continuing investment in education and sensitisation programmes to maintain or revive people's interest. The Bhoj Wetland brief recommends that provisions for post project maintenance should be built into the original project proposal, with necessary funds allocated for this.

The Lake Toba experience notes the importance of investing in local capacity, recognizing that community members are the best influencers and communicators for change. Their approach in training environmental cadres from the local communities proved a very successful way of garnering trust and support; however they note that a scheme of small incentives to compensate the cadres for their time and energy would be important to sustain the initiative. The Tonle Sap experience recognizes that capacity-building initiatives in lake management typically require the strengthening of institutions both for promoting participatory management of natural resources and for effective environmental education, communication and awareness-raising on sustainable development and conservation of lake environments. For such initiatives to be sustainable, enhancement of basic human-resource capacity for implementing and addressing the principles of sustainable resource use is essential.

The Lake Constance brief notes that networking, campaigning and public relations are very often independent of concrete projects and require additional personnel and financial resources; programmes to co-finance these important activities are necessary.

The sustainability of the Lake Champlain Basin Program is reinforced through the employment of a full-time Education and Outreach Coordinator and a Communications and Publications Coordinator. In the case of the Great Lakes, the passing of the Great Lakes Legacy Act authorized \$1 million per year over five years for public information programmes.

The Lake Biwa, Tanganyika and Toba experiences recognize the advantage of mainstreaming environmental education as a means to ensure sustainability. In the Lake Biwa example, a "Floating School" has been established, onboard Uminoko, a ship built by the prefectural government exclusively for environmental education. Since the start of the programme in 1993, more than 300,000 children have benefited from the programme.

The Lake Ohrid experience notes the importance of using early successes to leverage investment in, and broad support for sustainable CEPA programmes. In the Lake Toba experience, the village-level tree planting effort won a national award and through this, received recognition at the highest level of government. Early successes were also used to leverage support for local NGOs through the Hanns Seidel Foundation (HSF), which provided the trainers and the

environmental education training materials for schoolteachers in the Lake Toba area. Similarly, the Lake Constance brief recommends that innovative pilot schemes be recognized and publicized to garner public support.

***Lesson 4: Involvement of all stakeholders in identifying issues and their solutions will usually improve the effectiveness and efficiency with which CEPA can effect change.***

The planning and implementation of a CEPA programme will be significantly assisted when local people have sufficient technical and local knowledge of the issues and CEPA approaches to be fully involved. The Soap Movement in Lake Biwa in the 1970s came about because people (and especially women) were made aware of the effect of phosphorus in synthetic detergents on eutrophication of the lake, and its implications. Their actions prompted the prefectural government to enact the Eutrophication Control Ordinance in 1979, the very first act for eutrophication control in Japan. In Lake Baringo, as a result of the project's awareness creation activities, the local people decided to establish four community-managed wildlife sanctuaries, with technical assistance from the Kenya Wildlife Service and the Department of Agriculture. Increasing local awareness about the social and economic impacts of environmental degradation in Lake Cocibolca has led to an increased call for national action.

A moratorium on fishing was instituted in Lake Baringo following discussions with the local communities, as a measure undertaken to improve fish stocks; the progress in fish production was monitored and the outcome disseminated to stakeholders through quarterly reports and stakeholder forums. In Chilika Lake, local fisherfolk helped disseminate information about the importance of using the right mesh size nets, and imposed a ban on juvenile catch, resulting in a significantly higher yield.

The importance of involving all stakeholders in lake basin management efforts is a common message through many of the experience briefs, and receives special mention in the cases from Lake Baringo, Lake Chilika, Lake Ohrid, Lake Sevan, and Lake Toba. The Lake Issyk-kul experience makes the point that local communities are often well aware of the need to protect natural resources and that problems will inevitably arise when decisions are made without their involvement and support.

Once actions move to the field, it is vitally important that the community plays a major role in data-gathering, analysis, implementation and monitoring of management interventions. Apart from the obvious benefits such as obtaining highly relevant data, involvement of the local community will make a very significant contribution to raising community awareness of resource values and help to confirm the real nature of resource issues. In many examples, Community-Based Organizations (CBOs) and Non-Governmental Organizations (NGOs) have a vital role to play at this level. This is particularly evidenced in the experience briefs from the developing regions of the world, where government resources are limited and understandably, focused on the necessary technical interventions for lake management. Participation and support from local community groups go a long way in spreading the conservation message and affecting the necessary management interventions. CEPA efforts in Lake Chilika benefit from the active involvement of NGOs & CBOs; similarly in Lake Victoria, collaboration with NGO's, CBO's, and other stakeholders has strengthened fishery resources management and increased public

awareness. The “Environmental Army”, a volunteer organization in Laguna de Bay, consisting mainly of fisherfolk and farmers, plays a vital role in raising environmental awareness and heightening motivation among various sectors to be involved in the rehabilitation effort. The programme was so successful that it has now been institutionalized by the Laguna Lake Development Authority. It is noteworthy that in many cases the existence of NGO/CBO CEPA programmes has come about with financial support from international sources.

Cross-sectoral and multilevel partnerships are necessary to achieve, and sustain effective CEPA efforts. Such operational arrangements are not common, so creative and exploratory thinking is needed to identify those opportunities with the most potential. The success of the Lake Champlain Basin Program is rooted in the maintenance of partnerships and collaborations, a multiple stakeholder approach, sharing of information with the public, and basing management decisions on good science. The Laguna de Bay experience recognizes that with a wide area of jurisdiction and with limited staff to carry out effectively its mandate, partnership is a key element in managing the resources of the lake; the formation of strategic alliance with the local government units, people’s organizations and non-government organizations is needed to gain wide support in the implementation of its plans and programs and in the implementation of its rules and regulations within the region. The Lake Peipsi experience notes that the role of regional transboundary groups (e.g. research cooperative groups, businesses or NGOs) in bridging differences in legal and institutional frameworks, cultures and languages, is critical if transboundary lake basin management is to be achieved.

Several of the experience briefs illustrate the benefits to be gained from involving the private sector (industry) in CEPA efforts. The "Shiga Environment Conservation Association", a private sector initiative in Lake Biwa, comprising more than 400 relevant local companies, actively contributes to, and supports lake basin management activities. In Lake Issyk-Kul, three pilot projects have been initiated for the development of ‘green’ industry and tourism. The Lake Champlain Basin Program has formed an outreach partnership with WPTZ, a network television affiliate in the Basin, and a sponsor, KeyBank, called Champlain 2000. Champlain 2000 features weekly news segments and occasional 30-minute specials on lake-related topics, and regularly reaches millions of viewers in the basin, with the costs shared between the three partners. The Conservation of Laguna de Bay Environment and Resources (CLEAR) is a tripartite partnership formed by the LLDA, Unilever Philippines and the Society for Conservation of Philippine Wetlands (SCPW) to ensure the continuity of efforts to conserve the lake’s resources and empower and educate the communities within the watershed. In some cases, private sector support has come about in response to public pressure, such as the case of PT Toba Pulp Lestari (PT TPL), a private industry operator in the Lake Toba region, which agreed to set aside 1% of its net revenue for environmental management.

The Lake Malawi/Nyasa and Tanganyika experiences note that in any partnership between stakeholder groups, good communication and transparency is essential, as is an agreement on common goals and objectives at the onset.

Finally, it is important to recognize that CEPA activity is not the sole responsibility of a single group of professionals. There will be benefits to working with professional or experienced

communicators and educators and these partnerships are encouraged in planning and undertaking CEPA programmes.

***Lesson 5: Dissemination of information and data to the stakeholders is important.***

This relates to Lesson 4, which stresses the need to involve all stakeholders in lake basin management efforts. The information and data gained from lake management programmes and experiences should be disseminated to national and local governments, lake management practitioners, NGOs and other stakeholders, and should be easily accessible. Many of the experience briefs recognize this as a critical component of efforts aimed at achieving lake basin management and conservation objectives, and one that is often overlooked.

The common message running through the briefs is that information needs to:

- a) be disseminated to a wide range of stakeholders and other interested parties (political leaders and decision-makers have been singled out in many examples as a vital target group);
- b) be easily accessible, and available in a form that is easily understood by the target audience;
- c) be consistent (this is recognized as a particular challenge across transboundary systems in both the Lake Champlain and Lake Peipsi briefs); and
- d) encompass the whole gamut of issues relevant to lake basin management, including the importance of the lake system, legislative and management process, and their goals, success stories and failures.

The Lake Naivasha brief notes that dissemination and communication of research results to stakeholders and decision-makers can sometimes be very difficult, but it has to be progressed in order to change attitudes and mindsets. A variety of tools have been employed to facilitate dissemination of information; some of these are described below to illustrate the range of tools and approaches available.

- The establishment of **resource, education or exhibition centres** where information generated through research and monitoring actions can be collected, collated and distributed through different media (e.g. print, internet, TV and other audio-visual means). These centres also provide a focal point for the organization of campaigns, public forums and socio-cultural activities; as have proven successful in Lake Chilika, Lake Biwa, Bhoj Wetland, Lake Nakuru (youth hostel), Lake Champlain (ECHO) and Lake Sevan. In Lake Ohrid, “Green Centers” were established in Macedonia and Albania to serve as clearinghouses to connect the NGOs to each other and to provide the critical information they need to mobilize public interest and public action.
- **Participatory Rural Appraisal (PRA)** programmes have been identified as one avenue for disseminating the information particularly to the local communities; this has been employed in Lake Baringo to disseminate information about the values of the lake system.
- The role of **models or pilot programmes** in demonstrating the possibilities and advantages of conservation actions has been highlighted in the Lake Naivasha brief.

***Lesson 6: A variety of CEPA methods may be needed within one CEPA programme.***

An effective awareness-raising programme must include an analysis of the target groups and the ways in which they can be influenced. Understanding of not only the conservation and management issues, at appropriate levels, but also of CEPA methods and cultural issues, will improve the chances of designing and implementing a successful CEPA programme. Specific groups, such as fisherfolk, students or politicians, usually require different approaches. It can be useful to consult members of the target audience and ideally involve them in designing the programme. The education message should be given by someone who understands the community and preferably by a figure whom they respect. Individuals also differ as to whether they prefer to learn from formal lectures, by being given the opportunity to think through the problems and solutions or by participating in exercises to illustrate the required approach. A range of such techniques is often most appropriate.

As is evidenced from the briefs, CEPA can take many innovative forms (interactive, participatory or passive), and be conducted at many different levels (local, regional, national or international). The Lake Toba experience has shown that a variety of small-scale, grassroots level CEPA programmes can produce tangible results. At the other end of the scale, the CEPA actions employed at Lake Nakuru were estimated to have reached a total of 130,000 rural and urban residents; the Lake Baikal project employed a range of tools to reach an estimated audience of 80,000 people; and the Champlain 2000 TV network is estimated to reach millions of viewers in the basin. Increasingly, Information and Communications Technology (ICT) is being effectively employed to reach the global audience, as reported in the Lake Toba, Lake Peipsi, Laguna de Bay, Lake Dianchi and Lake Chilika briefs. The Lake Tanganyika experience notes that e-mail links (and web sites) pay back the relatively small investment greatly in terms of increased communication within the region. In Laguna de Bay, water quality data is presented in a simple schematic diagram inspired by the work of a famous Dutch painter, Piet Mondriaan; the Water Mondriaan, as it is now called, is posted on the Laguna Lake Development Authority web site.

Any CEPA programme is likely to be more successful if it is enjoyable or entertaining. Possibilities include cartoons, puppets, drama, debates, art, jokes, games, quizzes, competitions and songs. In the Bhoj Wetland example, competitions, rallies, and street theatre performances are some of the more innovative approaches used to spread the conservation message; also cinemas in the urban area regularly show slides in support of the “Save the Lakes” campaign. The “Floating School” on Lake Biwa offers 5th-graders the opportunity to have fun while learning. In Lake Peipsi, an annual international children’s creative works competition, called “World of Water Through the Eyes of Children” has received enthusiastic response from more than 5,000 children in the region.

In Lake Baringo, awareness creation among stakeholders on importance and value of the lake and the need to conserve them was done through training, sensitisation and mobilization using Participatory Rural Appraisal (PRA) methods. Such methods include field trips, workshops, seminars and demonstrations in which the stakeholders learn through participation.

The Lake Champlain Basin Program has established sister lake exchange programmes with lakes in Albania/Macedonia and Indonesia, as a way of transferring knowledge and expertise, and spreading the conservation message. Through this partnership, Lake Toba has received training support, funding for the production of local language awareness material, and the opportunity for exchange visits. The brief notes that the “people-to-people” interaction has proven an effective media for learning.

Participatory approaches have also proven effective at increasing awareness and garnering support for lake basin management activities; it also has the added value of making the general public feel that they are making a direct contribution to the conservation effort. In Lake Champlain, the Lay Monitoring Program has conducted lake-wide monitoring of eutrophication parameters during the summer season using citizen volunteers every year since 1979. The Annual Waterbird Census conducted at several of the sites involves volunteers in a global effort to determine the status of, and threats to waterbird populations.

The Lake Baringo brief notes that it is important to incorporate a system of incentives into environmental awareness packages in order to build a conservation constituency at the grassroots level.

Increasing national pride in the national or global importance of species or areas can generate grassroots support for conservation. One approach is to build a programme around a flagship species (i.e. an attractive, readily identifiable species) which is linked to the major conservation issue (such as loss of habitat), but does not have negative associations, such as being considered a pest. International recognition of the site provides leverage for political and public support at the national level; several of the sites have benefited from being designated as World Heritage Sites, Biosphere Reserves or Ramsar sites. The Lake Naivasha Riparian Association was awarded the prestigious Ramsar Conservation Award in 1999, in recognition of 70 years of efforts to promote conservation and management of the lake.

It can be useful to examine the response of the target audience to a range of CEPA tools. It can similarly be very useful to test material while developing it and to decide what media (e.g. talks, television programmes, world wide web pages, posters, t-shirts, videos, leaflets or stickers) are the most appropriate for a particular situation and how material should be presented.

***Lesson 7: Identification of the target group(s) is an important first step in designing an effective CEPA programme.***

As detailed in Lesson 2, one of the most effective CEPA methods is to involve the community in a structured investigation of the benefits and values that they derive from the system. In order for this to be effective, awareness-raising initiatives need to utilize terms, concepts, and examples that are relevant to the target group. A common problem with awareness-raising activities at the community level is that they are not targeted at the groups who are most important in resource utilization and management and in forming community opinion. Those with the ability to improve the situation are not necessarily those that readily attend conservation programmes.

There is a tendency to focus on the easy parts of awareness-raising, such as education in schools, or on general presentations through posters.

Too often awareness-raising programmes are conducted on the basis that any educational activity will have a positive effect, so it does not matter if it is not optimally targeted. This is not necessarily true and, since the community's awareness of ecological and resource conservation issues is at the heart of its willingness to be involved in management, the success of this part of the process is vitally important to achievement of overall goals. As a result, many conservation education programmes drift in an aimless manner without clear conservation benefits and sometimes without any real educational benefits either.

Most of the briefs do not identify individual target groups for CEPA actions. Notable exceptions are in Lake Cocibolca, where students and the younger generation were identified as primary targets because they are more willing to change their attitudes and habits, and are effective conduits to transfer this to the household and community levels; in Lake Nakuru, Lake Chilika, Lake Toba and Lake Tanganyika where women were identified as a specific target group; and Lake Tanganyika, Lake Nakuru and Tonle Sap where political leaders and decision-makers were singled out as the primary target for awareness efforts.

The Lake Titicaca and Tonle Sap briefs note that a range of awareness actions has to be developed, targeted at particular groups and that these have to be tailored to the needs, and degree of involvement of each target groups.

The Lake Constance recommends that consumers (including holiday-makers) should be more informed about the connection between environmentally sound agriculture, healthy food, preservation of cultural landscape and nature protection.

### **Lesson 8: Integrated approaches should be considered in designing and implementing CEPA programmes.**

It should not be assumed that awareness-raising or even community education alone will stop unsustainable resource exploitation by community members. Experience has shown that this almost always does not work – there need to be several factors acting concurrently, such as changed community values, availability of alternative behaviours, and disincentives for unsustainable activities. Lake Biwa stands out as one example where increasing community awareness through community-based organizations, coupled with the necessary legislative frameworks helped to affect critical change for the conservation of the lake system.

The Lake Peipsi brief makes the point that water management in a transboundary context is much more complex and multifaceted than water management within one nation-state. In the situation where there is no one government to manage the transboundary waters and there are different states with their distinct political and economic interests, different histories, cultures; all water management aspects become very political. This political dimension should not be underestimated in the planning of water protection measures and much more resources should be allocated to transboundary water management projects (compared to projects in water basins

located within one nation state) to support transboundary communication, enable conflict resolution and initiate trust-building measures across borders. Parallel to the process of developing cooperation on the intergovernmental level between nation-states, it is important to provide support to transboundary networks of the local authorities and stakeholders specifically in communication within the networks and in developing their shared vision of the future for the whole water basin.

The Bhoj Wetland brief recognizes that lake management is very complex issue involving different disciplines and multidimensional activities and an integrative approach. Unfortunately the mind set of experts available for such work is quite different; technocrats consider lakes as physical entities and apply stereotypic technology based solutions, while scientists consider lakes as 'living systems' requiring specific solutions based on prevailing biological and physicochemical circumstances. This difference in perception sometimes leads to conflicts in project implementation. It recommends that the solution to this problem lies in imparting common core training to all the project staff that will cover diverse areas and interdisciplinary topics.

### **Further lessons**

In addition to the 8 lessons identified above, the 28 experience briefs also illustrate lessons which have not been recognized as such in the briefs, but which can be drawn from an assessment of the outcomes (successes and failures) of CEPA-related actions. These are provided below.

#### ***Lesson 9: Undertake situation analysis and problem identification before designing the CEPA programme.***

A basic principle of intervention in community affairs is that root causes of problems must be understood and agreed upon before actions are developed and implemented.

A period of research is necessary for gaining an understanding of the situation and helping the community to understand the root causes of the problems, and also to analyze their relationship to government, other communities, and middlemen.

Information from secondary sources can often provide a broader understanding of the situation and may allow preparation of a general draft framework for approaching issues. However it is important to remember that secondary information can be as misleading a poorly collected primary data. None of the briefs emphasizes the importance of using existing materials to research the situation. This is to some extent symptomatic of the 'trendiness' of techniques such as RRA and PRA, which has drawn attention away from the wealth of information that is often found in existing documentation.

#### ***Lesson 10: Indicators of success, monitoring & evaluation are essential to assess the effectiveness of CEPA programmes.***

As with other aspects of conservation, it is extremely valuable to assess the success of CEPA actions in relation to the measurable objectives, including changes in the community's attitude to

the need for resource conservation and co-management initiatives. With clear objectives it becomes obvious what the purpose of the teaching is.

A useful technique is to state objectives under five categories (from Braus & Wood 1993):

- Awareness (e.g. after the education programme the participants should be able to list the main threats to local lake resources in the community)
- Knowledge (e.g. should be able to identify the most important fish species and give their life histories)
- Participation (e.g. should be able to plan and implement a programme to teach tourists how to snorkel without damaging the reef)
- Skills (e.g. should be able to survey fish populations)
- Attitudes (e.g. should be able to describe how people's opinion of the lake differ)

Measures can vary from the number of people present, the results of questionnaires asking participants to evaluate the programme, or the changes in behaviour such as poaching. Such monitoring allows programme modification or creation of new programmes. It can be useful to monitor the 'ends' objectives (what is trying to be achieved, e.g. reverse the decline in fish populations), which show whether the project is achieving its goal, and the 'means' objectives (steps that need to be taken to achieve the ends objectives, e.g. reduce the percentage of fish caught to less than 25% or ensure that 80% of school children understand the importance of the fish) which show whether the proposed activities are reducing the problem. It is then possible to see if the conservation goal is being achieved, and if not, whether it is because of programme failure (the planned actions did not take place) or theory failure (the actions took place but did not produce the anticipated changes). It is also important to ensure that there are regular opportunities to consider changes; the facts may no longer be true, the material may look too old or the message may no longer be appropriate. It is easy to ignore outdated material, especially if seen daily.

Often resistance or outright opposition to participation is a useful indicator that the co-management regime being developed is not going to meet the perceived needs of the people in its present form. Instead of being taken as a failure, this should lead to a review of the activities and possibly also re-examination and redesign of project objectives – preferably with the participation of the resisting community members. Conversely, it is always a good idea to seek clarification of why communities or groups within communities are willing to participate; their motives may not always be consistent with sustainable resource utilization objectives of the project. Understanding the motivation of participants can provide a guide to ways in which involvement can be increased.

## List of References

Balmford, A. (1999). (Less and less) great expectations. *Oryx* **33**, 87-8.

Braus, J.A. & D. Wood. (1993) *Environmental Education in the Schools*. Washington: North American Association for Environmental Education.

Butler, P.J. (1995) Marketing the conservation message: using parrots to promote protection and pride in the Caribbean. In: Jacobson, S.K. (ed.) *Conserving Wildlife*. International Education and Communication Approaches. New York: Columbia University Press, pp. 87-102.

Dugan, P. (1988). The Importance of Rural Communities in Wetlands Conservation and Development. In: Hook, D.D. & others (eds.) *The Ecology and Management of Wetlands: Vol 2: Management, Use and Value of Wetlands*. Croom Helm Ltd, London & Sydney: Timber Press, Portland, Oregon. 394 pp.

ILEC & UNEP (2003). *World Lake Vision: A Call to Action*.  
[<http://www.worldlakes.org/docs/The%20WLV-Final.pdf>]

Ramsar Bureau. (2001). *Additional Guidance on Reviewing and Action Planning for Wetland Communication, Education and Public Awareness (CEPA)*, to assist Contracting Parties in implementing Resolution VII.9, the Convention's Outreach Programme, 1999-2002.  
[[http://www.ramsar.org/outreach\\_reviewsactionplansI.htm](http://www.ramsar.org/outreach_reviewsactionplansI.htm)]

Shepherd, D. & McNeely, J. (1998) Education and protected areas: a perspective from IUCN. In: Leal Filho, W., de Carvalho, C.A.R. & Hale, W.H.G. (eds) *Environmental Education in Protected Areas*. Carnforth: Parthenon Publishing Group Ltd, pp. 139-47.

Sutherland, William J. (2000). *The conservation handbook: research, management and policy*. Malden, USA: Blackwell Science, Inc. 278 pp.