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**Laguna Colorada, Bolivia** – the red color of water is caused by red sediments and pigmentation of algae

## EcoBytes

### Ecosystem Approach to Integrated Water Resources Management

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#### Content

**Issue Focus** – Ecosystem Approach to Water Management *Some Thoughts From Latin America*

**CEM Member Contributions**

**What's happening @ IUCN**

**Announcements & Events**

**Publications**

#### Issue Focus

##### **ECOSYSTEM APPROACH TO WATER MANAGEMENT**

##### **SOME THOUGHTS FROM LATIN AMERICA**

**BY**

Eduardo Guerrero, CEM member

Water supply, water purification and flood regulation are perhaps the most precious services provided by ecosystems. The perceptions people have about water being a valuable resource are varied. In Latin America, people who live in desert and arid areas like Peruvian and Chilean coasts, north-eastern Brazil and northern areas of Colombia and Venezuela have a social valuation of water, different than Amazonian and Chococoan people, who live in some of the world's wettest rain forests. Nevertheless, at a national and regional level, Latin American society has increased its social valuation of water as a strategic resource. This renewed social estimation of water is influencing decision makers all around Latin America to re-design or design relevant policies, laws and plans.



Nahuel Huapi National Park,  
Argentina  
© Guerrero

Similar to other regions, comprehensive and strategic environmental management in Latin America is more critical than ever. Integrated approaches are essential in order to respond to the challenge of reconciling economic growth goals with the goals of social inclusion, poverty reduction and nature conservation. A more integrated and just management of the water related services provided by ecosystems may substantially contribute to breaking the vicious circle of inequity, provided fair access to and sharing of the benefits are promoted.

Integrated water management approaches have gained relevance during the last few decades. Theoretical frameworks and plentiful pilot experiences have been accumulated. Now the question is how to scale up and broadly apply this holistic philosophy. Ecosystem Approach is an effective tool that has the potential to greatly enhance integrated water management efforts. Ecosystem Approach, 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way', is not just about the physical environment. Ecosystem-based management is essentially concerned with ensuring people achieve their needs through socially fair, wise economic, and ecosystem friendly processes.

IUCN and UNEP (2006) evaluated eight case studies regarding application of Ecosystem Approach to water resources management in Latin America. The survey included different scales of projects, from local to transboundary. Countries involved were Argentina, Bolivia, Brazil, Colombia, Ecuador, El Salvador, Guatemala, Mexico, Paraguay, Peru, and Uruguay. Results showed that Ecosystem Approach principles were frequently applied either in an explicit or an implicit way. All case studies had applied at least 6 principles. However, only one case used all the principles of the package. Considering the survey showed that applying Ecosystem Approach to water management was promising, there is a need to reinforce specific use of its principles with all water stakeholders in order to accomplish its full potential and benefits.

Furthermore, Integrated Water Resources Management (IWRM), Integrated River Basin Management (IRBM), Integrated Coastal Zone Management (ICZM), and Ecosystem Approach are convergent entries to the same

purpose. Therefore, there is an urgent need to improve coordination among the various international existing networks and organizations that promote integrated water management. FAO, UNEP, UNESCO, GWP, IUCN-WANI, and similar, can be summed up as the international team of water management 'forces', which should cooperate rather than compete due to the common objectives. On the other hand, there is also a need for coordination among the approaches. In fact, Ecosystem Approach is presented as an opportunity to reinforce IWRM, IRBM and ICZM. At the field level, some confusion regarding actual association between these related 'brand names' remains.

There is also a need to better disseminate these systemic approaches far beyond environmental organizations. Agricultural, energy and mining sectors are not incorporating these approaches enough as part of their policies and activities. We need to 'sell' the Ecosystem Approach to key stakeholders such as water supply and irrigation companies, farming associations, sanitation providers, oil companies, electric companies and mining companies. Simultaneously, we need to promote the Ecosystem Approach at a local level, with local governments and communities. Assimilation of the Ecosystem Approach in local developmental plans and community led activities is also required with adaptation to local contexts by means of the proper participatory processes.

In an integrated approach towards water resource management, we also need to increase awareness in the society about how crucial the health of ecosystems is to the sustainable supply of fresh water. People need to be aware that - as part of a vital cycle - ecosystems provide water but also need water for their survival. People and decision makers also need to better understand that building of aqueducts, sanitation units and other water-linked infrastructure is not enough to guarantee current and future access to water.

For further information contact: Eduardo GUERRERO: [eduardo.guerrero.f@gmail.com](mailto:eduardo.guerrero.f@gmail.com)

## CEM Member Contributions

### A Natural Resource (NGO for Water Resource)

We wish to invite you and CEM members to browse our newly revised website at [www.anaturalresource.com](http://www.anaturalresource.com). We are a partnership of professional, Community and Non-profit entities and a consortium member of AWISH (A world institute for a sustainable humanity) for our "Action in Sustainability" project. Our education/training programs have been expanded with a host of ecosystem-based, interdisciplinary and cross-cultural resources and activities. We have been invited to present some of these themes at the upcoming WCC meeting in Barcelona, and welcome any ideas and collaboration in working together there. Our "WaterWorks" website link has included poetry, photos and comments on working together among our many interests from across the globe. We are also currently on the agenda for the upcoming European Geophysical Union assembly, Western Snow Hydrology meetings, Engineers without Borders and we are looking forward to linking our science, education and creative work during World Water Week.

For further information contact: Susan Toch: [anaturalresource@gmail.com](mailto:anaturalresource@gmail.com)



Prawn seed collection – ecosystem threat © Mitra

### Blending Mangroves and Livelihood : A March Towards New Dimension

The Intergovernmental Panel on Climate Change (IPCC) stated with high confidence in their report of 2007 that anthropogenic causes are mainly responsible for global climate change. This real, but indigestible issue has converged two US presidential candidates of opposite polarity into one principal focus. Obama says that the US is responsible for leaving the planet in better shape for future generations while Clinton points towards the moral issue in context to global warming. She considers replacing the Kyoto Protocol, which is set to expire in 2012.

The heat of these statements hardly reaches the poor villagers of Amalamethi, or Kalidaspur, which are located in the remotest corner of this planet at the apex of the Bay of Bengal. The places in the deltaic complex of Indian Sundarbans are known for magnificent mangrove vegetation, tiger habitat, man-animal conflict, tiger prawn seed collection and frequent natural calamities due to cyclonic depressions, and tidal surges. Nitai Gayen, a son of the mangrove soil, was a poacher, but after witnessing the repeated natural disasters, he now thinks of changing to a new livelihood pattern. Similarly, a large fraction of the people of these islands are thinking of adapting new livelihood schemes like oyster culture, seaweed culture or fish feed preparation from mangrove flora.

It is in this context a study was undertaken at Kalidaspur village in the eastern part of Indian Sundarbans during 2007 to establish the significance of specially formulated feed prepared from *Porteresia coarctata* (commonly known as salt marsh grass) to boost up the growth of fresh water prawn, *Macrobrachium rosenbergii*. This mangrove associate species is abundantly available in the mudflats of Indian Sundarbans and is noted for its rich protein content. The Department of Marine Science, University of Calcutta became a partner in this project to facilitate technology transfer. A significant profit was obtained after the final harvest through this innovative scientific venture.

For further information contact: Dr. Abhijit Mitra [abhijit\\_mitra@hotmail.com](mailto:abhijit_mitra@hotmail.com)

### Qura'nic Botanic Garden in Qatar

Qatar Foundation for Education, Science and Community Development (a non-profit organization) "[www.qf.org.qa](http://www.qf.org.qa)" in collaboration with UNESCO (Doha Office, Qatar) is going to establish a "Qura'nic Botanic Garden". Plants mentioned in the Holy Qura'an and the Sayings "Hadith" of the Prophet (PBUH) will be cultivated in harmony with the environment, especially in terms of their water requirements. This will be a significant contribution towards the conservation of the genetic resources of these plants.

The garden's plants, infrastructure and components will emphasize the teachings of Islam and their role in nature conservation. An integrated ecosystem management concept comprising education, research, recreation, entertainment, tourism, conservation and environmental ethics will be adopted in the cultivation and use of this garden. The master plan is currently being prepared. A team has been formed under the guidance of Prof.

Batanouny to undertake studies for the propagation of these plants and for compiling the Qura'nic verses and Hadith mentioning these plants. Research regarding the heritage of these plants through poems, practices, involvement in land use, etc is also being compiled, in support of the conservation of heritage and traditional practices of land use. For further information contact: Dr. Saif Alhajari , Vice-Chairman, Qatar Foundation [salhajari@qf.org.qa](mailto:salhajari@qf.org.qa) and/or Prof. Kamal Batanouny, Scientific Advisor, QF [kelbatanouny@qf.org.qa](mailto:kelbatanouny@qf.org.qa)

### Sacred Groves of Northern Western Ghats of India: Approaches and Challenges for Protection of the Small Ecosystems

The wise ancestors of traditional communities have developed systems such as maintaining sacred forests and sacred lakes and worshipping natural elements, including mountains and rivers. Such elements in isolation and as a congregation of many elements were most important ecosystems of past days. These ecosystems survived through generations but due to forces like development, greed and modernization, coupled with fast deterioration of culture, such traditions are fading. Overgrazing, land conversions and shifting agriculture are also responsible for disrupting these ecosystems. These age old ecosystems are becoming more critical for the well being of people, landscapes and biodiversity. Maintaining a patch of pristine forest in the name of deity is a common practice in India that has helped in maintaining biodiversity. In the northern Western Ghats of India such community managed biodiversity rich forests play an important role in the socio-cultural and spiritual life of the village. Since time immemorial the deities and the vegetation have held equal importance and therefore many rare and endangered species have been protected in many sacred groves. The Applied Environmental Research Foundation (AERF) has been working with communities in the northern Western Ghats region for the last 13 years, for conservation of these valuable systems. The AERF has been successful in reviving the tradition of maintaining these ecosystems that are scattered in the village landscapes and continues to work with more communities.



For further information contact: Dr. Archana Godbole, Director AERF [archanagodbole64@gmail.com](mailto:archanagodbole64@gmail.com)  
[www.aerfindia.org](http://www.aerfindia.org)

## What's happening @ IUCN?

### IUCN's new look



IUCN launched its new logo on March 10<sup>th</sup> in Gland. IUCN President Valli Moosa, VP Javed Jabbar and DG Julia Marton-Lefèvre raised the new IUCN flag outside the main HQ building on this day. IUCN has also revamped its website which can be viewed at: <http://cms.iucn.org>

### IUCN provides support to the introduction of the Ecosystem Approach, and policy development process in Vietnam

A national workshop to discuss the pilot application of the Ecosystem Approach in wetlands and protected area management, the lessons learned, and the national level policy issues which needed to be addressed was conducted in January 2008 in Ha Noi. Funded by the United Kingdom's Department of Environment, Food and Rural Affairs (DEFRA) and jointly organized by IUCN Commission on Ecosystem Management (CEM), IUCN Viet Nam and the UK Joint Nature Conservancy Committee (JNCC), this workshop was a follow-up of two earlier field-level workshops with protected area managers held in the Mekong Delta in 2006. From previous field level workshops it was noted that if the Ecosystem Approach were to have practical application at field level, then policy issues also needed to be addressed at much higher levels.

The first part of the 3-day workshop brought together more than 60 national park managers, national and international scientists and experts who work in ecosystems management-related areas, while the second part was a small high-level meeting for Government decision-makers to consider next steps.

The workshop came up with concrete recommendations for improvements in Viet Nam policy regulations and their implementation in the field that will guide wetlands and protected area policy priorities in the country in the future. These are to be incorporated into a Ministerial Circular and Policy Brief, and launched at CoP 9.

### Business and Biodiversity?



Recently, **IUCN** and **Shell** published an extensive review of initiatives and opportunities to build biodiversity business -- i.e. commercial ventures that generate profits via activities which conserve biodiversity, use biological resources sustainably and share the benefits equitably.

They are now developing a pilot pipeline of biodiversity investment opportunities -- at both the enterprise and ecosystem levels -- and identifying biodiversity potential finance partners.

**Do you know of a biodiversity business investment opportunity?**

**Can you recommend a biodiversity finance partner?**

Contact: [fvorhies@earthmind.net](mailto:fvorhies@earthmind.net)

## Announcements & Events

### "Land of Thorns"

In April 2008, the French NGO ACTED ("Agency for Technical Cooperation and Development") produced a documentary film to raise awareness about Karamoja, a semi-arid region North-East of Uganda. The region is in crisis, plagued by small arms (AK-47), border conflicts, environmental destruction, climate change effects and difficult development issues. The film focuses on the cycle of unsustainable development taking place in the region. Jonathan Davies, from the IUCN World Initiative for Sustainable Pastoralism (WISP) dispels some common myths on pastoralism in this film.

For more information on the film: David Knaute [karamoja@acted.org](mailto:karamoja@acted.org), or view: [www.karamoja.film](http://www.karamoja.film)

### Workshop on Ecosystem Services - Solution for problems or a problem that needs solutions? Salzau Castle, Germany, 13-15 May 2008

The aim of this workshop is to discuss the available and needed applications/methods/models that will assist in improving the use of ecosystem services as a natural resource management tool.

Further information: Dr. Benjamin Burkhard [salzau2008@ecology.uni.kiel.de](mailto:salzau2008@ecology.uni.kiel.de)

### Side events for Drylands and IWRM at the upcoming session of the CSD-16, New York, 5-16 May 2008

#### 1. Policy Options for promoting alternative Livelihoods in Drylands - Perspectives from an interregional Context

This side event will provide practical policy guidance emerging from the "Sustainable Management of Marginal Drylands" (SUMAMAD) initiative. The side event will highlight some of the groundbreaking community based projects throughout Northern Africa and Asia. The case studies fostered conservation and sustainable management of drylands, along with the creation and restoration of livelihoods based on local, traditional knowledge and the latest scientific research. **Co-organized by:** United Nations University's International Network on Water, Environment and Health (UNU-INWEH) and UNESCO-Man and Biosphere Programme (MAB) Further Information: Dr. Brigitte Schuster [schustb@inweh.unu.edu](mailto:schustb@inweh.unu.edu)

#### 2. Learning Centre: "E-Learning: An approach to Capacity Development for IWRM"

This course will help participants upgrade their knowledge and skills in using modern water management approaches e.g. Integrated Water Resources Management (IWRM) as a tool for planning and its application in water-scarce regions. It will also present an array of available virtual learning approaches to IWRM, if the participants want to further their knowledge. **Co-organized by:** United Nations University's International Network on Water, Environment and Health (UNU-INWEH), UN-Water Decade Programme on Capacity Development Further Information: Dr. Velma I Grover [grovervi@inweh.unu.edu](mailto:grovervi@inweh.unu.edu)

### Indigenous Peoples and Nature Conservation Seminar 17 April, Akantes Amsterdam

Gonzalo Oviedo, senior policy advisor for IUCN, will be speaking at the Indigenous Peoples and Nature Conservation seminar organised by IUCN National Committee of the Netherlands in cooperation with the Netherlands Centre for Indigenous People. The seminar will address some major developments concerning the implementation of the Durban Action Plan resulting from the Fifth World Parks Congress and discussions on United Nations Declaration on the Rights of Indigenous Peoples.

For further information: Aukje ter Horst: [aukje.terhorst@iucn.nl](mailto:aukje.terhorst@iucn.nl) OR [Gonzalo.Oviedo@iucn.org](mailto:Gonzalo.Oviedo@iucn.org)

## Publications

Arico, S. (contributor) 2008. **The Value of Nature: Ecological, Economic, Cultural and Social Benefits of Protected Areas.** Secretariat of the Convention on Biological Diversity, Montreal: 30 pp.

<http://www.cbd.int/doc/publications/cbd-value-nature-en.pdf>

Persic, A., Arico, S. and Ishwaran, N. 2008. **Ecosystems and human well-being: UNESCO Biosphere Reserves as learning laboratories for sustainable development.** In: Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet. CBD Technical Series no. 36: 87-95

<http://www.cbd.int/doc/publications/cbd-ts-36-en.pdf>

IUCN (2006) La aplicación del enfoque ecosistémico en la gestión de los recursos hídricos: un análisis de estudios de caso en América Latina <http://www.iucn.org/dbtw-wpd/edocs/2006-003.pdf>

IUCN (2007) Aplicación del Enfoque Ecosistémico en Latinoamérica (Includes a chapter about Ecosystem Approach and Water Management) <http://cmsdata.iucn.org/downloads/423.pdf>

## EcoTip from My Green IUCN!



**When traveling by air book direct flights where possible. Take offs and landings require more fuel!**

If you would like more information on any of the items included in this issue or wish to submit an item to future issues, please contact Radhika Murti on [radhika.murti@iucn.org](mailto:radhika.murti@iucn.org) OR [cem@iucn.org](mailto:cem@iucn.org).