



SIL news

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Contributions on PC formatted disk, in any standard word processor or DOS (ASCII) text, or as e-mail attachments, will assist the Editor.

Editor's note

Hope you have noted the changes in the SIL Secretariat that became effective since the last triennial SIL Congress at Budapest in August last year. The main changes in the composition of Secretariat were reported in the newsletter63 that was posted on the SIL Web page in December 2013. The web page is updated periodically: it keeps you informed with WG and other scientific meeting reports, announcements of international and national meetings and symposia, book reviews and obituaries. The newsletter strives to keep you informed about SIL's scientific activities, i.e. all that is new and happening under the SIL umbrella. Both our new SIL President Dr. Yves Prairie and General Secretary Dr. Tamar Zohary send some important and interesting messages for our readers. I therefore, have put them at the start of the newsletter. Also, there is encouraging news from Dr. Jack Jones, Editor-in-chief of *Inland Waters (IW)*. This Journal has already picked up quite well and provides an update on the contents of Volume 4 (Issues 1, 2), which deals with the Proceedings of SIL Congress at Budapest in 2013, including also a couple of papers emerging from plenary lectures. We also welcome in this newsletter some news about the recently baptized SIL WG Asia (WG Chairperson Dr. Brij Gopal), to boost limnology in Asia. I am also happy to apprise you that I was able to get from Pakistan some news for the first time. For this, I thank Dr. Rahat Jabeen who provides some interesting information about different types of waterbodies from Pakistan and research potential for aquatic sciences developing in the near future. I think in the upcoming period more will come from Asia, especially China, Korea, India, and many other Asian countries. I am sorry to share some sad news from Russia, USA and France: I have included three obituaries in this newsletter.

I hope our WG chairpersons will get my reiterated request to contribute more often

than so far to the scientific activities of their respective working groups. However, the information contained in the present newsletter, especially in the Announcements section, shows that we have some hectic scientific activities going on in the form of upcoming workshops and symposia both in 2014 and a part of next year. Reports on these meetings are welcome in the newsletter. Two book reviews make the story complete.

I wish our readers a pleasant summer vacation period and good luck with their scientific pursuits.

Ramesh D. Gulati

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Message from the SIL President Yves Prairie

SIL: the road from relevant to essential

In over twenty-five years as an active participant in scientific societies, I've frequently found myself questioning their exact role and relevance in the development of our science. Never has the landscape in which international scientific societies evolve been under such pressure as now, as they are faced with an interconnected world where members can be totally independent regarding their knowledge acquisition, educational opportunities and experience sharing. This is coupled with a growing competitive environment generated by the expansion of national societies onto the international scene and the multiplication of influential voices onto the scientific public space. Having to face the changing needs of its constituents, associations are forced to redefine their missions, how they communicate with stakeholders, and first and foremost, what their unique value proposition is. This SIL leadership recognizes these challenges and is committed to the development of the society's truly unique mission.

polluting the water bodies and water quality, etc.

The limnological situation of water bodies in the country is deteriorating since most of the population exploits the water and its biological resources directly for their consumption. On the other hand, the sanitation system is not adequately constructed so the usual practice is to use the nearby water bodies and canals for dumping the human and agriculture wastes. As a result, the water quality and aquatic fauna of these water bodies suffer from many environmental and ecological problems, including eutrophication and high level of pollution etc. Last but not least, the lack of scientific research and approach in managing the ecosystems and biodiversity appear to be the main reason for our ignorance of many such problems.

Since the developmental activities increase indiscriminately in the country they lead to an increase in pressure on these natural ecosystems particularly the aquatic resources. The situation can be improved if the sustainable management practices of natural resources are adopted in developmental projects and planning.

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How To Save Urmia Lake in Iran ?

Introduction to the lake

Lake Urmia is a salt lake in northwestern Iran near its border with Turkey. It is the largest lake in the Middle East and the sixth largest saltwater lake on earth with a surface area of about 5,200 km², and it is 140km long, 55 km wide and 16 m deep. The lake has more than 100 islands and is protected by the Iranian Department of Environment. Like the Dead Sea, it is remarkable for the extreme salinity of its waters. Since 1967 Lake Urmia has enjoyed the status of a protected wetland. and the Iranian government has made efforts to increase its wildlife. The shoreline of the lake varies with the lake's waterlevel; when the water is high, it extends into large salt marshes to the east. The lake's south shores are largely uninhabited. The lake is divided into north and south, separated by a dyke in which a 1,500 m gap provides little exchange of water between the two parts. Due to drought and increased demands for agricultural water in the lake's basin, the salinity of the lake has risen to more than 300g/litre during recent years, and large areas of the lake bed have been desiccated and are dry now so that lake's water area has considerably shrunk. The Na⁺ and Cl⁻ concentrations are roughly four times

the concentrations of natural . Because Lake Urmia's waters have no outlet, they are highly saline. The lake is one-fourth as salty as the Dead Sea, with a salt content ranging from 8 to 11 per cent in the spring to 26 or 28 per cent in the late autumn. The lake's hydrography is governed by the lack of an outlet. It forms the dead end of a large drainage system that covers an area of about 52,000 km² and is subject to great seasonal variations.

Integrated Lake Basin Management (ILBM)

Based on years of successful work on lakes and reservoirs in various countries, ILEC (International Lake Environment Committee) formulated the ILBM platform (Nakamura and Rast, 2011). ILBM is based on six fundamental governance measures including: (1) policies; (2) institutions; (3) participation; (4) information; (5) technology, and (6) finances.

Based on these six measures, it is possible to build a healthy Urmia Lake. ILBM is an instrument that assists lake basin managers and stakeholders in achieving management of their lakes and basins for their sustainable use. It assumes that lakes have a great variety of resource values, whose sustainable development and use require special management considerations characteristic of their lentic (static) water properties. Good lake basin management can be realized only through ILBM, which represents continuous lake basin governance for improvements. ILBM integrates institutions, policies, participation of science, technology and finances. ILEC promotes ILBM globally, with long-term and strong political commitment, in order to improve the state of world's lakes. A primary characteristic of ILBM is that it is not a prescriptive planning procedure. Rather, it is the result of a compilation of lessons learned from the global experiences of past lake basin management. They were synthesized to address complex planning issues with a basin governance framework reflecting the unique features of lentic waters such as lakes and reservoirs. These features of lakes and reservoirs include a long water retention time, complex response dynamics, and an integrating nature of the management measures (Nakamura and Rast, 2011).

Successful lake basin management requires that we fill the gaps between what has already been done, and what remains to be achieved in facilitating its application, based on long-term and strong political commitment. Continuous efforts will be necessary to further expand and refine the ILBM concept to achieve a brighter future for lakes and other water bodies experiencing serious degradation threats, particularly those attributable to human activities and climate change (Nakamura and Rast, 2011). To achieve this goal, the following governance pillars, which constitute the basic components of ILBM, and which are all potentially available for Lake Urmia in Iran, must be addressed. These include: 1) A management system with an appropriate organizational setup will help ensure sustainable benefits for lake basin resource users; 2) Policy tools must be better developed to facilitate concerted societal actions for sustainable lake basin management; 3) All lake basin stakeholders should participate in the decision-making process for managing the lakes and their basins for sustainable use; 4) Technologies.

Although such effects often tend to be limited in certain areas and over short time periods, physical interventions, such as shoreline and wetland restoration, provision of sewerage and industrial waste treatment, water treatment systems, afforestation, and mitigation measures for siltation control, can play a significant role in improving the lake environment. It also will be necessary to initiate actions for



Bridges over Urmia Lake.



A coast of shrinking Urmia Lake.

Irrigation Revolution (best practice of irrigation) and Green Revolution (using newly-selected domestic plants requiring less irrigation water); 5) Information. Scientific and public perceptions regarding lake basin management can differ from case to case. Without knowledge generation and sharing, human and financial resources mobilized in the lake basin management efforts may not be effective; and 6) Finances. Financial resources should come from all basin stakeholders that directly or indirectly benefit from the use of lake resources. Efforts must be made to develop innovative approaches for generating locally usable funds.

Based on these ILBM elements, the roadmap for Saving Urmia Lake should be as follows:

- 1) Only the water resources in the local catchment area should be used. There is no need to import water from areas outside the Urmia Lake catchment area;
- 2) Only animals and plants in the local area should be used. There is no need to import or bring in animals and plants from outside the catchment area;
- 3) Only local people and local nations should be involved. There is no

- compelling need to bring people from outside the catchment area;
- 4) Only local people and local leaders should have the authority to decide how to save Urmia Lake and its catchment area. Any experts sought from abroad should only be requested to evaluate the positive and negative parameters of restoration efforts;
- 5) Professional bodies from throughout the Islamic Republic of Iran should be invited to participate in saving Urmia Lake and its catchment area. In addition to scientists and decision makers, religious leaders, philosophers, historians, artists, writers, sportsmen, etc., of all ages (young and old), and from all parts of Iran should be involved.

The above type of approach was used to save the Northern Aral Sea, which is now exhibiting the first signs of success of the management measures. As stated at the onset of this message, it will not be possible to achieve a healthy Urmia Lake and basin without creation of the six fundamental ILBM pillars (measures) mentioned. To this end, the six ILBM governance pillars within Urmia Lake and its basin should be evaluated and refined during 2015–2017. This approach would work for all continents, and should also work for lakes in Iran. Indeed, it would be very beneficial to develop appropriate policies, create the institutes for such policies, and allocate the necessary funds to develop capable staff to accomplish the desired goals. Indeed, it would be inspirational to build a symbolic ILBM “Pavilion” on the shores of Urmia Lake. This would be a first step towards developing a healthy Urmia Lake with expected rise in water level by 2017. It will be one small step for people inhabiting the Urmia Lake catchment area. This Pavilion will become a physical symbol for all people involved in the restoration of Urmia Lake and its catchment area.

It would be desirable to write new poems and songs about Urmia Lake and its catchment area. New films and new photo albums about the Urmia Lake landscape should also be developed. New books about the lives of people inhabiting the Urmia Lake surroundings and within its catchment area should be written. Further, it is not sufficient only to write scientific and technical papers about the problems of Urmia Lake and its catchment area. Rather, hymns and songs also should be written that would become spiritual symbols for all people in the Urmia Lake ‘Rescue Team.’

In order to overcome the Urmia Lake crisis, people engaged in scientific and cultural activities relevant to the lake and its catchment area should unite in developing a common approach directed to the better future of this lake.

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