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Point for discussion this month **Protection of wetlands**

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Eternal Words

I would feel more optimistic about a bright future for man if he spent less time proving that he can outwit Nature and more time tasting her sweetness and respecting her seniority.

~Elwyn Brooks White, *Essays of E.B. White*, 1977

The insufferable arrogance of human beings to think that Nature was made solely for their benefit, as if it was conceivable that the sun had been set afire merely to ripen men's apples and head their cabbages!

~Savinien de Cyrano de Bergerac, *États et empires de la lune*, 1656

Dear Readers,

Once again it is the Ujjani Reservoir (cover photo) that has caught the attention of world communities by its inclusion in the World Lake Vision (WLV) developed by the International Lake Environment Committee (ILEC). Locally, being source of water for drinking and crops in Solapur district and southeastern part of Pune District, it always finds place in print and electronic media. Last time's visit (2 years ago) by Dr. Masahisa Nakamura, Chairman, SCICOMM, ILEC and Dr. Walter Rast, Vice Chairman, SCICOMM, ILEC to a village - Padasthal near Indapur (135 km from Pune by road) on the shore of Ujjani Reservoir is still remembered by the villagers.

This time also they will visit Ujjani Reservoir where they will meet victims of Ujjani pollution in the command area. As Dr. Mohan Kodarkar writes in one of his master pieces that while studying or implementing ILBM one has to integrate upstream (catchment) and downstream (command) so that the sustainable water-use circle is completed. That is why, Anil Patil, water activist and civil engineer working in Ujjani has taken up the responsibility of organizing a programme to converge urban and rural interests to Save the Ujjani.

Dr. M. A. Chitale, Stockholm Water Prize winner, is guiding the organizing team of IAAB, IEA, Punya Nadi Sansad, Jal Biradari & Maharashtra Vikas Kendra. Dr. Chitale is known for his international work and judicious approach in water sector. He had been invited by Maharashtra State Government for advice on the Mithi River problem in Mumbai after the torrential rains of July 2005.

Thank you,
Chief Editor

P. S.: **Dr. Mohan S. Kodarkar**, internationally acclaimed Indian limnologist of ILEC, SCICOMM passed away on 9th Aug. 2010. All those who knew him and his work will admit what a great loss his death is to India because today, the concerned authorities are slowly beginning to understand the ecosystem approach to deal with pollution after the failure of Ganga Action Plan I due to unavailability of adequate electricity. He was a staunch supporter of ecotechnological systems. SERI mourns his death.

**“Saving the Ujjani”
International Programme on ILBM
Ujjani and Pune, Maharashtra, India**

(26-27th August 2010)

Indian Association of Aquatic Biologists (IAAB) Pune-Mumbai Chapter with its associate organizations is organizing a two day programme in understanding and reviewing the current issues and activities undertaken to restore the water quality of Ujjani Reservoir by various stakeholders in the catchment and command area of the lake.

Introduction

The term “lake” could be applied basically to three kinds of surface water resources viz.

- A. Natural water bodies of varying dimensions,
- B. Man-made riverine impoundments and
- C. Reservoirs impounded taking advantage of topography.

A lake could be natural, man made with fresh, brackish or saline water and has three important attributes; a well defined catchment (Lake basin), the water body and down stream command area. While catchment influences the water body, the latter, in turn, influences the command area. The International workshop will focus on the first attribute i.e. the lake basin, as ultimately a water body is reflection of its catchment and its effective management holds key for enjoying benefits from lakes and reservoirs.

The global experience of Lake Basin management encompasses a wide variety of lessons. Regardless, depending on the way in which the stress is exerted from the basin on the water body, integrated approach is needed to address wide ranging issues in Lake Basin management.

ILBM is a conceptual framework for assisting Lake Basin managers and stakeholders in achieving sustainable management of lakes and their basins. It takes into account the biophysical features of as well as managerial requirements for lake basin systems, that are associated with the lentic (standing or static) water properties of lakes as well as the inherent dynamics between humans and nature in the

process of development, use and conservation of lake and basin resources.

Importance of Basin Approach:

As is pointed out in the ILEC publication on ILBM, lake management does not stop at the lake shore, but must extend into the basin, and often beyond. It has been observed that the largest number of lake issues have their genesis in upstream or downstream basins.

Apart from institutional arrangements, policies, technological interventions, input of knowledge-based resources and finances, success of ILBM basically depends on involvement of stakeholders. Often degradation of the lakes results from unsustainable human interventions in the process of resource development and utilization. Thus, sustainability can be best achieved when diverse stakeholders fully understand and appreciate their roles in protection, conservation and sustainable management of lake ecosystems.

Theme:

Basin management: understanding multiple dimensions and formulating appropriate actions for sustainable management of lakes and reservoirs - The case-study of Ujjani lake, Maharashtra, India.

Reach:

Departments of Central/ State/ Local Government, planning and regulatory agencies including environment, water and urban development, tourism, agriculture, private sector including industries and construction houses

Professional services – architectural, engineering and environmental

Urban and rural citizens

Journalists – print and electronic media



Managing Institutions

Indian Association of Aquatic Biologists (IAAB)

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URL : www.iaabonline.org E-mail : aquabiol@gmail.com

IAAB, a registered body was established in 1981 for complimenting on going teaching, research, training and extension activities in the field of Aquatic Biology. With more than 700 Life Members from Universities and Colleges, Central and State Research Institutions, Corporate sector and Voluntary Organizations (NGO), the Association has developed into a forum that helps in generating, exchanging and sharing new ideas in the field of Ecology and Environment in general and Aquatic Sciences in particular.

International Lake Environment Committee Foundation

1091 Oroshimo, Kusatsu, Shiga, 525-0001 JAPAN

URL: www.ilec.or.jp E-mail: tuda@ilec.or.jp

ILEC was founded in 1986 as an International NGO with initial objective of continuing to organize and convene the World Lake Conference. It was given legal status in 1987 by Environmental agency and Ministry of Foreign Affairs, Japan. Its continuing mission is (i) to advance International cooperation for (i) Conservation of lake environments and (ii) to promote environmentally sound management of lakes around the world, based on scientific knowledge gained through survey, analysis and research. The organization developed and promoted the World Lake Vision and Integrated Lake Basin Management (ILBM) initiative to further its vision and goals.

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SERI was founded in 1995 with an aim towards the clean environment for all with the help of natural treatment systems - eco-technologies to treat the wastes. In last 15 years SERI has successfully demonstrated the effectiveness of ecotechnological systems for domestic and industrial wastewaters. SERI has worked for ecological restoration of a number of lakes and polluted streams in India. SERI has organized a number of environmental awareness and education programmes since its inception. Ecology day is the result of such activities.

available water resources.

Development vs. Pollution in Ujjani Catchment

Population explosion and industrialization could not be managed by the civic systems and services in Ujjani reservoir's huge catchment totalling about 14500 sq. km, where 56% population is residing on just 4% land. Wastes arising from such profusely populated areas finally find their way down to Ujjani reservoir about 200 km downstream. It is found that the waste streams from the residential, commercial and industrial establishments finally reach the Ujjani reservoir through the "sewage-made" perennial rivers and streams in the basin. The tributaries of Bhima River, Mula-Mutha are noted as ecologically ruinous rivers by various scientific and government reports. The reports noted that there were high concentrations of critical pollution and health parameters in the water bodies against the prescribed norms stated by regulatory agencies.

In the urbanised areas, water consumption almost tripled in last 20 years. Presently it is about 1500 MLD as confirmed by authorities. About 80% of it is released into the urban natural streams as wastewater reaching the rivers. These huge mixed liquors of wastes are drained down to Ujjani reservoir every day in addition to the agricultural runoffs. Water-use and wastewater generation have been reported by government agencies in a recently prepared report on Bhima River Pollution Control (Aug. 2010). Downstream areas, on the other hand, are dependent on this low-quality water (waste released into the river upstream) for irrigated agriculture and other water uses. In the last 50 years accelerated pace of industrialization has added further stress on the water-quality making the water unsuitable for any purpose. The polluted water also has an adverse impact on the health of the Ujjani Lake. In addition to human consumption, a lot of water is used for agriculture also. In this area, the sugarcane is major cash crop, which dominates the farming practices, with lot of use of chemical fertilizers and pesticides. These chemicals finally enter the lake water.

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Ujjani Reservoir: Merging of Lentic and Lotic Systems

Ujjani Lake is the terminal reservoir on the river Bhima the catchment of which lies in the intensively urbanized and industrialized Upper Bhima Basin. The river basin has a slope west to east from High Ridge (Mountains of Sahyadri about 1000 m msl to plains of about 450 m msl). Ujjani's catchment has extreme physiographic and agro-climatic variations. Rainwater precipitated on Sahyadri's crest partly goes to Konkan (towards west) and partly flows to Desh (towards east). A total of 14,500 sq. km of Ujjani's catchment lies in Pune District itself. The lake is an essential source of water for Pandharpur – the major pilgrimage centre situated down stream and visited by millions of people throughout the year. Thus, pollution of Ujjani Lake has immense consequences for downstream communities.

Average rainfall significantly lessens from west (4000 mm) to the east (500 mm). As a part of water management strategy in Pune District, a number of reservoirs were built on the upper reaches of the basin. Water from the same was mainly allocated to irrigation. However, in recent years, there is a noteworthy swing in water allocation from irrigation to the ever-expanding urban areas. Upper Bhima Basin can be divided in to three zones based on the topography - Northern, Middle and Southern. Three rivers in the northern zone are Kukdi, Mina and Ghod which join Bhima near Daund city. Middle zone has the major river of the basin – Bhima which joins Ujjani Lake after Daund city. Southern zone is heavily impounded with 5 reservoirs.

Pavna river having Pavna reservoir, River Mula having Mulshi reservoir and River Mutha having Panshet, Varasgaon, Temghar and Khadakwasla dams finally flow down to meet Bhima River before Daund. In this zone at present major quantum of the stored water in the reservoirs is supplied to Pune city and its adjoining Pimpri-Chinchwad industrialized townships. An alarming scale of urbanization and industrialization is putting increasing pressure on