

SERInews

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*With you in Pursuit of Sustainable
Management of Finite Water Resources*

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Point for discussion this month **What kind of rivers are we going to give to Gen next?**

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Shrishti Eco-Research Institute, Pune

Eternal Words

We have to shift our emphasis from economic efficiency and materialism towards a sustainable quality of life and to healing of our society, of our people and our ecological systems.

~Janet Holmes à Court

We never know the worth of water till the well is dry.

~Thomas Fuller

We're finally going to get the bill for the Industrial Age. If the projections are right, it's going to be a big one: the ecological collapse of the planet.

~Jeremy Rifkin

Dear Readers,

Wherever you go, the sanctity and purity of rivers irrespective of its non-perennial flows, gives you immense connectivity with flow of the civility from thousands of years. Rivers were the cradles of civility and now they are the victims of rudeness! Now they are becoming the carriers of waste flows and eco-toxic materials. This is going to lead to huge economic losses in near future. Ecology is economy all the time as said by Sandeep Joshi.

Restoration of polluted water bodies is a key to sustenance of human life on the earth. Man cannot swim in a pool of his own wastes. He needs clean rivers. Everybody should think that he is upstream of somebody as well as downstream of somebody. If upstream somebody does not treat his waste then he's resources are polluted, and he himself does not take care of his waste then he will compel the downstream somebody to muddle in the pool of waste.

In a recent visit to Pune for African Sanitation and Sustainable Lake Management (AFSAN-SLM) programme, Dr. Masahisa Nakamura, Chairman of International Lake Environment Committee emphasized that upstream - downstream relationship needs to be strengthened for stress-free basin management. Dr. M. A. Chitale, water laureate of India, expressed a need for building up of a common vision of survival considering upstream-downstream conflicts.

SERI's associate organisation Shrushti Environment Academy (SEA) organised one programme on 'water and wastewater analysis' in collaboration with Aavnira Biotech Lab Pvt Ltd to build the capacity of water professionals in understanding the environmental status indicators scientifically to guide the non-environmental decision makers - may be engineers or administrators or politicians to arrive at better conclusions as far as impacts of the projects are concerned.

Thank you,
Chief Editor

Many Rivers One World

- Sandeep Joshi

Alvin Tofler's 'Future Shock' shocked the modern development with facts and figures of the speed of resources exploitation and waste generation. Economists kept cautioning about the economic costs of damage caused by pollution. With studies of 10 years of Ujjani Lake catchment, it is evident that pollution of rivers is not the local phenomenon. It spreads over huge geographical area of upstream - downstream of catchment. Cost of pollution eradication increases exponentially when it disperses over a large area. Its impact on health and agricultural production is taking toll.



It is not only Pune's urban growth stressing the very existence of rivers, but it is common all over the world. Finding of World Wide Fund for Nature conservation group are astonishing that 50 out of 69 river stretches in 16 European countries suffered from "poor ecological status." Some of them are worst polluted rivers such as Rhone and Seine in France, the Ebro and Segura in Spain, the Severn in Britain, the Danube in Austria, the Maas and Scheldt in Belgium etc. They all require rejuvenation actions to meet "good ecological status" before the end of 2015, as required by the EU Water Framework Directive. The study blamed the poor state of the waterways on continuing damming and channelization. It is also observed that European industries continue to dump waste into rivers, while the run-off of agricultural fertilizers is also seeping into rivers.

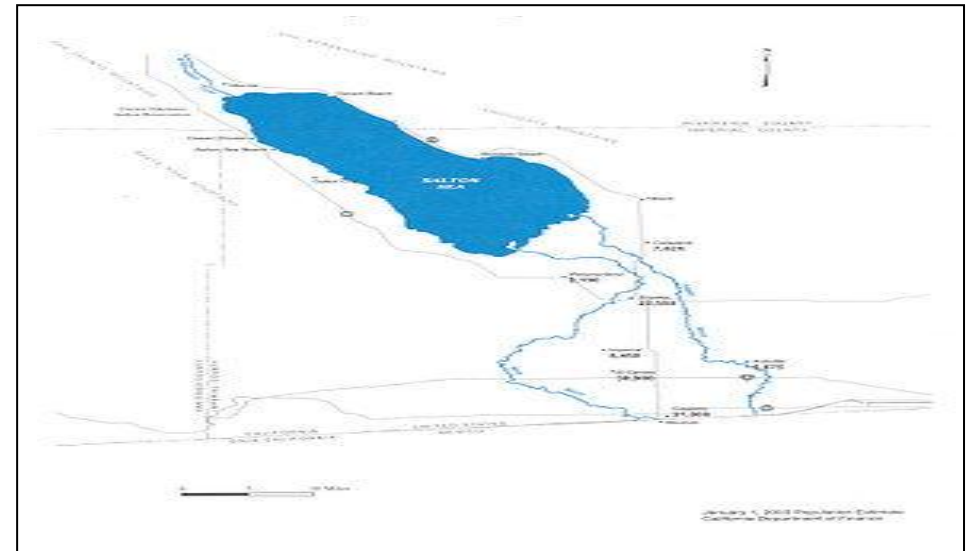
Rhine River having length 1232 km is one of the longest and most important rivers in Europe. It flows through six countries - Switzerland, Liechtenstein, Austria, Germany, France and the Netherlands before merging into the North Sea at Rotterdam.



Some time ago, the Rhine was one of the most polluted rivers in Europe. In 1986 the river was severely polluted by a chemical factory fire. Within 10 days the pollution had travelled the length of the Rhine and into the North Sea. After this accident in 1986 the Rhine Action Programme (RAP) was developed, and adopted by all the countries bordering the Rhine. The programme aimed at return of the salmon which once thrived there. The use of the river for extracting drinking water is also safeguarded.

There is similar story of another European river – Danube. Five major rivers and 165 million people in 17 countries are pouring pollution into the Danube River. The river received raw sewage from cities, pesticides and chemicals from farmers fields waste from factories and bilge oil from ships.

In American continent, the river is also reported. The New River (Río Nuevo in Spanish) flows north from near Cerro Prieto through the city of Mexicali, Baja California, Mexico into the United States through the city of Calexico, California towards the Salton Sea. The New River's flow is composed of waste from agricultural and chemical runoff from the farm industry irrigation in the U.S. (18.4%) and Mexico (51.2%), sewage from Mexicali (29%), and manufacturing plants operating in Mexico (1.4%). The river has been referred to as the most severely polluted river within the United State. Several projects have begun to reduce and mitigate the levels of pollution in the river, including upgrading sewage treatment infrastructure and enclosing the river channel.



River contains 100s of contaminants such as volatile organic compounds, heavy metals (including selenium, uranium, arsenic and mercury), and pesticides (including DDT) and PCBs. River water also carries the pathogens that cause tuberculosis, encephalitis, polio, cholera, hepatitis and typhoid etc.

The other river Neuse has pollution features as follows -

- Over 400 million litres of partially treated wastewater received each day
- many non-point run-offs polluting river
- one of North America's 20 most threatened rivers

- high levels of heavy metals like copper, zinc, nickel, chromium, and cadmium
- massive fish kills
- algae and vegetation clogging tributaries
- sedimentation from urban development

Major findings of the report on U.S. EPA's Toxics Release Inventory for 2007 include:

- Industrial facilities discharged approximately 35 tons of chemicals linked to cancer into the Catawba River
- A company released 1000 tons of toxic chemical waste into the Cape Fear River in North Carolina
- The New River ranked 2nd in the nation for most toxic discharges, with about 3000 tons discharged in 2007.
- The Cape Fear River is ranked 6th in the nation for most toxic discharges, with 1200 tons discharged in 2007.
- Nationally, 58000 tons of toxic chemicals were released to American waterways during 2007 by industrial facilities.

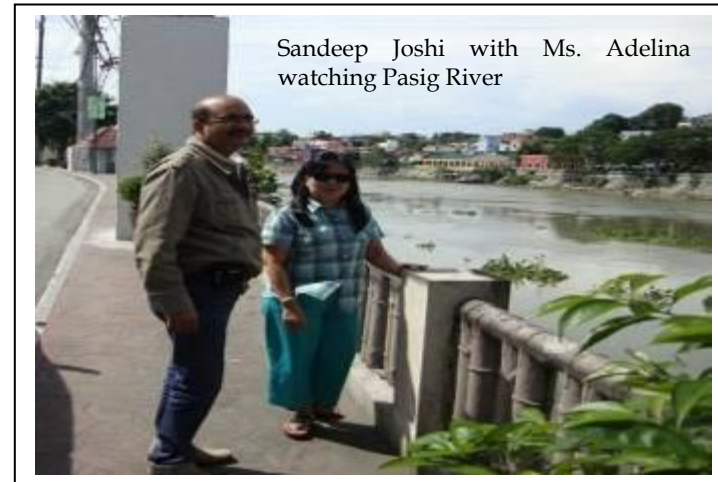
In order to curb the toxic pollution threatening North Carolina's waterways, Environment North Carolina recommends the following:

1. Pollution Prevention: Reduction of toxic discharges in to waterways
2. Tough permitting and enforcement
3. Protect all waters: Policies to apply Clean Water Act to all of our waterways. This should include the thousands of headwaters and small streams.

China's longest river Yangtze is "cancerous" with pollution and rapidly dying, The river, the third longest in the world after the Nile and the Amazon, flows from remote far west Qinghai and Tibet through 186 cities including Chongqing, Wuhan and Nanjing. It meets the sea at Shanghai. It has threatened drinking water supplies in 186 cities along its banks, including Shanghai, experts have warned. It receives more than 40 percent of the country's waste water, 80 percent of it is untreated. Experts observed that industrial waste and sewage, agricultural pollution and shipping discharges were responsible for the river's declining health.

The influx of population brought about by industrialization and urbanization of Metro Manila resulted in the transformation of Pasig River into a sewage and industrial effluents canal. Pasig River is glittering with oil slicks. The river has unpleasant odorous and dark coloured water. It blooms with hyacinth, floating

garbage and faeces. The river is also known to have high organic loads and contaminate with heavy metals, pesticides, nitrates, and phosphates. Other polluted riverine ecosystem in Philippines is Marilao-Meycauayan. These rivers are laden with wastes from tanneries as noted by Blacksmith Institute.



Sandeep Joshi with Ms. Adelina watching Pasig River



Sandeep Joshi with team on boat on MMO River

So, river pollution and its ecological, health and economic impacts are common in the world. It's necessary to adapt ecosystem approach with Integrated Lentic and Lotic Basin Management (IL²BM) to eradicate the pollution from water systems.

Glimpses of Workshop

Workshop was conducted by SERI in association with SEA, IEA and Aavanira Biotech Pvt. Ltd. on Water & Wastewater Analysis from 26th - 31st July 2011

