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Point for discussion this month

Does awareness solve the problems of pollution?

(For private circulation only)

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Dear Readers,

It's June again, parched land will receive showers of elixir and flourish with beautiful life. This photograph is of a small lake inside the dense forest near Dapoli, Dist. Ratnagiri on west coast of India. It's an evergreen forest in Western Ghats which has ample of flora and fauna to observer's delight. Water is so pure, serene that you can see it benthic communities clearly.

It's June again, world environment day 5th June is celebrated world over to remind that we love environment. A lot of programmes to create awareness among the masses are organized. SERI sends greetings to its all well wishers, clients, friends, colleagues, sponsors, government officials just to reassure that we are with you in pursuit of sustainable management of finite resources. You can be rest assured that we will try to reduce the pollution using eco-friendly technologies and contribute the betterment of global environment.

It's June again, a new education year begins in Indian schools and colleges. Joyous groups of students flock the schools and colleges. They are with full of energy, expectations and enthusiasm. Some of them plan for extra curricular activities. Students from post graduate environmental courses have joined SERI for summer training. They are working on littering habits of the people in common / community places. Their findings are surprising. Their report will be ready in month's time.

Thank you,
Chief Editor

Excerpts from previously published Article in TOI, Pune

Environment Education in New Century

- **Sandeep Joshi**

Emerging Discipline - Environmental Science

Environmental sciences encompass natural sciences as well as physical and chemical sciences because it is the study of all interactions and interrelationships among the living and non living things. So, the education in environment is very different and exhaustive as compared to today's pure sciences like physics, chemistry, botany, zoology, mathematics, statistics and engineering disciplines like civil, mechanical, electrical, electronics etc.

Environmental science is not only the documentation of observed facts and reactions, but it is an essentially applied science which helps man in achieving economic development in harmony with nature. Now it is well established that economic development spurred the exploitation and destruction of nature.

Education in Environment Science, therefore, should have central idea of restoration of environmental quality deteriorated by exploitation of resources and waste management. This multidisciplinary approach involves the ecology, geosciences, physicochemical, biological sciences and applied sciences like engineering, medical etc. So, any aspirant, who wants to work in the field of environmental sciences, no more belongs to his original discipline - say physics, physical chemistry, biochemistry etc.

The studies in the environment were introduced as a new science discipline in modern world only after environmental hazards like London smog, Los Anjelis photochemical smog, Minamata and itai-itai diseases etc. occurred in fifth decade of 20th century. Later on accidents like Bhopal, Chernobyl strengthened the roots of this so called new discipline.

Structure of Environmental Courses

Environmental courses should be designed according to the desired application or out

put, e.g. any course in biodiversity and ecology should consider man and environment relationship as a basic principle. The interactions and interrelationships of man with the flora and fauna of various habitats - aquatic or terrestrial - should be studied at length. Dependency of human economy on natural biodiversity should be discussed thoroughly. Then, the various techniques of restoration, preservation and conservation of biodiversity and ecosystems should be taught practically with theory in classes.

There are many other areas like industrial pollution, urban waste control and agro-waste management, in addition to amateur study of floral and faunal components of the environment which have been flooded with untrained or partly trained professionals. There are some socially sensitive areas like Environmental Impact Assessment (EIA) studies for proposed developmental projects. There is a scope in evaluation of pollution strength and its impact on animals, plants, ecosystems and human being also. All these works involving many scientific disciplines for the same task, make environmental courses interdisciplinary and exhaustive. Too many wise men from various disciplines if work with proper co-ordination, then the output will be better for society and a person, having in depth knowledge and training of environmental interactions and interrelationships, will co-ordinate the environmental activities and pollution control up to the mark for the society.

We can broadly categorize the environmental courses into the three distinct groups such as study of natural environment, environmental analysis and monitoring, pollution control and waste management. The last group of technologist has immense importance, as they are supposed to protect humanity and natural environments from the pollution due to waste accumulation. Then come the supportive group of analysers and monitoring teams. They will document all the physicochemical and biological changes in the existing environmental conditions. The last group of naturalists will take up the task of restorations, preservation and conservation of ecosystems damaged due to anthropogenic activities. Technologists group has great importance as far as the

very survival of human being and sustenance of life on earth is concerned. Naturalists' group, though has importance, may not remain on earth unless and until, the technologists' group do their task in a better way. Like dinosaurs after devastation of human being, life may be continued on mother earth. So, for the sustainable development of man, all the three groups of environmentalists - technologists, analysts and naturalists- should be given proper orientation.

Such an exhaustive training cannot be completed within a 2/3 years of post graduation courses, say M.Sc. or M.E. or M.Tech. Presently, at graduation levels in science or engineering disciplines, there are just one or two papers or some topic in a paper on environment. This is too incomplete to give an idea of even A, B, C of environment. But the clamour is much more by these halfboiled environmentalists who muddle in the highly sensitive pollution control field. They dare to enter this field, because according them pollution control business is very lucrative with no risk at all. Many of them are not all concerned with the real pollution control. Hence the risk for the society, region and nation goes on increasing and economic losses keep on mounting. That's why; there is need of concerted efforts of properly trained and oriented persons in the field of pollution control and environmental management.

People really believe in environmentalist as good as they believe in doctors. When a surgeon operates perfectly, then he saves one life and when an environment technologist works in a better way, then he saves thousands of lives, contributing greatly to the nation's economy the other way. So, the environmental courses in 21st century should be designed in a very responsible manner aiming at the sustainable development through harmony with nature.

- Sandeep Joshi

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News views

Removal of three lakh cubic meter silt from river Mutha

Municipal Corporation of Pune has claimed removal of 3 million cubic meter of silt from the bed of Mutha River from two years to

enhance water holding as well as carrying capacity of the river. This substantiates the conservative estimates of SERI's Sandeep Joshi regarding solids inflow in the river as 90 tons per day or annually 31050 tons which is quite huge as compared to the Ganesh idol immersion (accounts for only average 1.5 tons per day for 10 days) every year.

Say No to Bottle

Elimination of sales of bottled water will help one of the water prize founder companies to cut fossil carbon dioxide emissions by 160 tons per year. The company plans to become entirely Carbon neutral in its activities by 2025. Scandic hotels will offer its guests chilled, filtered, still of carbonated from the taps. This will ensure the valuable minerals and salts are not lost while unwanted chemicals are removed. Let others follow the suit to get 'watery' star while fading the carbon footprint.

Fast - unto-death for Rivers

Dr. G.D. Agrawal, a noted environmentalist has chosen a Gandhian Path to protest against damage to Riverine ecosystems due to infrastructural developments. River Bhagirathi Ganga is revered in Indian Culture, tradition, thought and action. Dr. G.D. Agrawal, former Member Secretary of Central Pollution Control Board is pained by the unrelenting destruction of Ganga River. There are 18 rivers in India which are grossly polluted as reported by CPCB. These need immediate attention and action and no planning. All concern departments should embark on innovative approaches and indigenous technologies rather than looking at West for the supply of systems. Then only we can say that Dr. G.D. Agrawal's fast has yielded for the betterment of Indian rivers and people's environment.

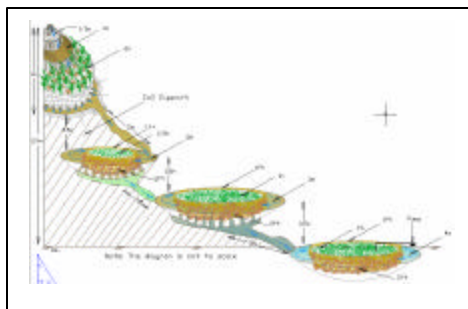
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From SERI's DESK

SERI's prestigious clients always encourage us for some innovative technique. And that's our tonic!

Recently SERI's Green Arch division has developed a treatment scheme for treated effluent still having high TDS. After

strenuous lab scale research, our team has developed this natural technology. And the company for whom it is developed is now preparing field for this Green Army. It's really fantastic to see effluent treatment without noise of any machine but with sweet sounds of birds and eye soothing colours of butterflies. It's Nature Power!



Schematic diagram of the treatment scheme.

Can you imagine COD reduction from 36,000 mg/l to 800 mg/l or from 16,000 mg/l to 270 mg/l without any external input of chemicals?

In a pilot plant study conducted for one chemical industry, SERI has achieved this tremendous success. Normally even after treating effluent by secondary biological treatment, the toxicity does not reduce sufficiently. This industry was facing huge problems of disposal of treated effluent. But as we say Nature is always there for your help. SERI achieved this by using Natural Technology only.



But it will take long period to realize the Nature's miracle as people has faith in machine power developed by human being. They won't realize the importance unless and until it is forced by Western Countries.

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Announcement

Greenself, Greenmovement & Greentech capacity building programme

SERI has commenced greenself, greenmovement and greentech programmes for value addition training for undergraduates, graduates, professionals and industrial employees. These courses will equip the candidate with in-depth understanding of environment and eco-responsibilities in his or her profession. For more details please visit website: www.seriecotech.com or write to envedplm@yahoo.com.

**Outreach Programme:
Enviro-legal Services**

Many industries, organisations, NGOs look for guidance and advice technico-legal matters of environmental monitoring and pollution control. Hence, SERI is in process to develop such outreach cell to help those who such services. This cell will guide organisations in activities to be undertaken as environment related CSR projects for the benefits of society. For more details please contact: Priya Kapole on seriworld@seriecotech.com.

Eternal Words

From Book Environment Management, for professionals, Businesses and Industries, by Sandeep Joshi.

"The profit motive has compelled all the modern world businesses to pay lowest possible prices for raw materials (for which the ultimate source is environment only), to externalise the costs of production as far as possible, to operate with minimal environmental controls, to avoid pollution control expenses, to get more incentives from the governments. In this way the production costs thus are always transferred to the environment, thus getting the huge hidden subsidy from the nature."

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