

TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (TIES)

A Profile based on Water conservation & related projects

The Institute

TIES is a registered not-for-profit organization and research centre affiliated to Mahatma Gandhi University, Kottayam dedicated for environmental conservation through research, capacity building, education and community development programmes. It is registered as a non profitable organization under the Travancore-Cochin Literary, Scientific Charitable Societies Act, 1955 with 12 A and 80 G status as per the Indian Income Tax Act, 1961, and eligible for foreign contribution as per FCRA.

Affiliations

The institute is approved by Ministry of Agriculture, MOEFCC and Science and Technology of Government of India and is registered under *Niti Aayog*. It is a service provider for Jananidhi (KW RSA), Suchithwa Mission, Kerala and technical consultant for Suchitwa Kottayam project (A district administration initiative). TIES conducts short term courses as the partner of Ministry of Micro, Medium and Small Enterprises (MSME), Govt. of India, for Indian students and IISAC New York for Students from USA. TIES is a research partner for Kerala State Council for Science, Technology and Environment (KSCSTE) for several projects since 2006. TIES is the leading corporate partner in India for conducting Corporate Social Responsibility (CSR) projects and implementing environmental projects of Apollo Tyre Foundation, Gurgaon, New Delhi; Singanawa Conservation Foundation, Mandla, Madhya Pradesh; Tata Chemicals Ltd, Dwaraka, Gujarat; Chattisgarh Distilleries, Pithora, Chathisgarh; Hindustan Uniliver Ltd, Puthucherry *etc.*

Awards & Honours

TIES received Green Institution Award in 2011 by Kerala State Biodiversity Board, awarded as the Centre of Excellence in 2012 by Government of Kerala for Emerging Kerala Projects; received State Tourism Award for the most innovative project from Tourism Department, Government of Kerala in 2012-13; and Skal International Sustainable Tourism Award for Community and Government Projects in 2014.

Water Conservation and water literacy Programmes

Water Testing Laboratory- research & community service

TIES holds an approved water and soil quality testing lab and provides service in water quality analysis to more than 300 people, monthly (including those of institutions and commercials for the purpose of license). TIES' normal testing procedure for water quality covers 16 parameters that belong to physico-chemical and microbiological categories. Heavy metal and trace element analysis are also done for selected samples as per the requirement.

Water- Research and Community Development Programmes

The fresh water environment in Kerala, especially rivers and other drinking water resources are facing severe threat due to pollution, sand mining and depletion of water table because of several reasons including deforestation and land use changes in the watersheds. TIES has been conducting research programmes on these issues, extending the results to the stakeholders and implementing community development projects, especially through school community, with the support of national and international funding agencies.

River Conservation

TIES conducted studies on the water quality of Meenachil River which is the lifeline of Central Travancore area catering water needs of ~50 lakh people and recorded presence of >20 pathogens and alarming physico-chemical quality (Since 2005). TIES has initiated a project to conserve the river by giving stewardship to 20 schools (My River My Life Project, 2015-16) on the river bank through assessing the present and past river and riparian biodiversity, cleaning wastes, planting bamboos and introducing fingerlings of native fishes, which is supported by Korea Green Foundation. A similar project is currently progressing (2016-17) for Chalakudy River with the support of Apollo Tyre Foundation (ATF), involving 10 schools on the river bank.

Pamba River, the sacred river of Kerala thronged at the foothills of Sabarimala Temple which has been visited by >50 lakh pilgrims yearly, is heavily polluted including nearby open and bore wells (>500 m) and the plight was exposed through TIES' research programme, supported by KSCSTE, Govt. of Kerala (2007-2013). The morbidity rate and the incidences of acute and chronic diseases among the river bank community is almost double that of the state average. TIES exposed the miserable situation of Pamba River watershed through several recurring campaigns and that compelled authorities to take remedy measures, such as construction of more latrines and cleaning of river by involving various voluntary groups. It also led to the formation of Pamba River Protection Authority by the Government of Kerala.

Drinking water

Kerala boasts world's largest open well density but TIES' studies showed that open and even bore wells are heavily contaminated with coliforms. Results evoked strong public response that led to significant changes in the water management practices. TIES conducts extensive studies on potable water quality since 2007, besides providing public service. TIES conducted extensive studies of ground water resources like open wells and bore wells and found that 98 percent tested samples contains excessive level of coliforms and deteriorated physico-chemical qualities. The scare generated by the reports of these studies prompted a significant number of people to take remedial measures and check the water quality regularly. TIES has conducted elaborate awareness campaigns through media and other IEC methods.

Pond conservation

Under the technical expertise of TIES, unique water conservation project with community participation is successfully progressing in partnership with Apollo Tyres Foundation (ATF) at Kodakara Grama Panchayath, Thrissur for the restoration of a historically important ancient pond, the Peringamkulam pond, located on the sides of NH-47, to a way-side environmental education and

leisure centre. Peringankulam pond which held greater ecological and cultural significances in the past was the major source of water for the local community, especially for agricultural and domestic purposes (2014-15). However, it has lost its original ecology and pristine form due to invasive aquatic weeds growth and dumping of wastes. The current project has transformed the pond into a Centre for learning water conservation techniques. Five more ponds are under renovation, targeting rejuvenation and related community use (2016-17).

Community Participation

TIES research projects follows participatory mode involving school community primarily and other stakeholders secondarily. Hence, awareness and capacity building are inbuilt mechanisms. Research and community extension programmes involving school children helped them to be aware about community and ecological issues, to learn research methodology and to inculcate scientific temper. Students while taking up conservation activities, transforms themselves as vehicles of social change. As the success of ecological conservation programmes, especially water management programmes are very much linked to prevailing land use pattern and community lifestyle, this approach through students has showed excellent results.

For instance, when the stewardship of a fixed stretch of Meenachil River and Chalakudy river is entrusted to river bank schools, students got the chance to interact with community, especially aged people, to collect data on present and past biodiversity of the river including Traditional Knowledge. They cleaned the river, planted bamboos on the bank, and introduced fingerlings of native fishes. All these activities received wide media attention and expects to bring positive community changes. The project is still continuing and the final report will be submitted to the authorities. It is expected that this model will be replicated for the conservation of all the 44 rivers in Kerala.

Publications

A documentary was prepared, titled “Memoirs of a Jaundice Period” by TIES on Jaundice (Hepatitis) epidemic in Kottayam (2005), which exposed the nexus of pollution sources like sewage and drinking water sources like open and bore wells of Government Medical College area. The documentary pointed out the miserable lives of people living nearby the medical college, caused by hospital waste discharge to nearby water resources. The documentary exhibited the ways in which the wastes from medical college, hotels and other sources reaches the Meenachil River and also portrayed that the river sources has become unhealthy, causing diseases. Documentary was exhibited at schools, colleges and TV channels evoking strong public response that led to the implementation of a Sewage Treatment Plant at Medical College, Kottayam.

TIES publishes research reports of water quality studies, pollution *etc.* regularly through popular/mass media and submits them to the respective authorities, besides publishing in journals and presenting in conferences. The reports submitted have evoked significant response due to the media hype on the issue.

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