

WATER PROGRAMME

IANSA's Water Programme will comprehend two types of action:

1. Research and Development on eutrophication.
2. Capacity building on research and especially on hydrologic resource management and river basin management.

1. Eutrophication

Eutrophication is a global problem that results from the permanent discharge of residuary water from home sewage, discharge of irrigation with fertilizers and industrial residues.

The excess of phosphorous introduced in rivers, lakes, dams and coastal waters produces an unbalance on the Carbon: Phosphorous: Nitrogen relation, resulting in a fast and abnormal growth of green-blue cyanophyceae algae, that produce toxic strains which are noxious to aquatic organisms and human beings. The toxins produced by these toxic cyanophyceae strains are hepatotoxic or neurotoxic.

Eutrophication increases the risk of diseases propagated via water, increases the cost of water treatment and degrades water bodies in such a way that economic losses are inevitably generated due to losses in leisure and fishery capacities, interference in navigation and compromising of other possible uses. Costs associated to the degradation of hydrologic resources by eutrophication are elevated and even higher are the costs for recovery. For the prevention of this problem, research for the detection of cyanophyceae flourishing formation conditions and on ecological and mathematical modeling for predicting flourishing are necessary, as well as programmes for the recovery and treatment of river basins. The topic is broad, of global scope, and involves the areas of Limnology, Sanitation, research on phytoplankton and biogeochemical cycles, and studies on conservation and protection of hydrologic resources. These researches involve researchers from several areas (Biologists, Engineers, Chemists, Physicists and Mathematicians) and investments in research and development in this area are necessary.

2. Capacity Building

For capacity building in management of hydrological resources and in research and development in eutrophication, 30 to 90 days specialization courses, with strong emphasis in theory and practice, are necessary. These courses, to be offered in Training Centers specially established for this purpose, will be aimed to train and quickly update researchers and hydrological resource managers. Presently, there is a huge deficiency in managers apt to deal with questions related to hydrological resources in a broad and systemic way. The

proposed courses will have a strong scientific, technological and technical engagement, focusing on practical and field training, lab work, case studies, conferences and advanced seminars with specialists. The courses will be given to hydrological resource managers, researchers in Limnology and engineers with responsibility in environmental management. These will always emphasize a systemic and integrated vision, accentuating prospective management and problem solution. Although capacity building will focus on eutrophication, due to the amplitude and importance of this topic other themes will also be discussed: water quality; cumulative impacts; impact and risk assessment; eutrophication and human health.

