

TERMS OF REFERENCE TO STUDY THE WATER AND SOIL QUALITY OF ADYAR CREEK

I. Background

The Government of Tamil Nadu conceived an ambitious and pioneering project in wetland conservation in the restoration of Adyar estuary and creek (358 acres). In the first phase, the Government decided to restore the Adyar Creek which extends to about 58 acres. This is the first and largest restoration program in India to restore wetland Eco-system in urban environment.

The 58 acres Creek was previously used as a place for disposal of Sewage, Municipal Solid Waste and Construction debris which has led to degradation of surface water and ground water quality and destruction of habitats of Avi-fauna, reptiles and fishes. The Creek was infested with exotic species of *Prosopis juliflora*, Mosquitoes and bad odour which has led the nearby communities to stay away and led to hunting, vandalism and other illegal activities in the Creek. Chennai Rivers Restoration Trust in association with experts from nearby Institutions, NGOs, Architects and Ecologists have joined hands for the restoration of 58 acres of Adyar Creek

In the year 2007, a Master Plan was prepared for eco-restoration of degraded Adyar Creek and subsequently, the project was named as Adyar Poonga. In the year 2008, the eco-restoration works were started and the restoration works were completed by early 2011. In order to assess the level of restoration progress, continuous studies are very essential.

II. Objective

- To assess the surface water quality of 58 acres of Adyar Creek
- To study the eutrophication status of Adyar Creek
- To study the soil characteristics of Adyar Creek

III. Scope of Work

- The consultant shall collect surface water samples not less than 10 numbers and the samples have to be taken on monthly basis. The parameters to be tested are provided in annexure 1.
- The consultant shall assess the eutrophication status of water in the Adyar Creek.
- The consultant shall study the soil characteristic of Adyar Creek not less than 8 locations and the parameters to be tested are provided in annexure 1.

- The consultant shall conduct toxic study in water and soil only once preferably in April/may only.
- The final project report should contain all the findings of 12 months data with analysis, graph, interpretation and recommendations.
- The consultant shall identify and report any remedial measures on water management plan needed in the Poonga.

IV. Study Area

The study area in this assignment is Phase-I, 58 acres of Adyar Poonga located in Chennai

V. Data inputs by client:

Site Plan and enter upon permission to the consultant by the client.

VI. Key Personnel

S.N.	Key Professional	No. of persons	Experience
1.	Environmental Specialist	1	Doctorate in Environment Sciences/Engineering with 10 years experience in coastal environmental quality assessment works.

Suitable manpower viz., Research Fellows, Field assistants and other required specialist necessary for this project shall be included in order to adhere the objectives of the project and time lines.

VII. Outputs and related payment schedule:

The study duration will be 13 months and the stage wise tasks are given below:

S.No	Stage of Report	Time line	Payment
1.	First quarter report (Jan, Feb and Mar)	3 months	30%
2.	Second quarter report (Apr, May and June)	3 months	15%
3.	Third quarter report (July, Aug and Sept)	3 months	15%
4.	Fourth quarter report (Oct, Nov and Dec)	3 months	15%
5.	Final Project Report	1 month	25%

The consultant should submit 2 original copies of all the above reports along with soft copy (MS word, Excel, PDF) of the report. All the pages in reports shall be printed in duplex mode except for A3 pages.

Annexure 1

The parameters that are required to be analysed is listed below

General Parameters	Nutrients	Major Ions	Toxic Metals*	Microbiology
Colour, Odour Temperature, pH Electrical Conductivity Dissolved Oxygen, Total Dissolved Solids Salinity, Turbidity Biochemical Oxygen Demand , Chemical Oxygen Demand Total Suspended Solids	Ammonia, Nitrite Nitrate, Inorganic Phosphate, Total Phosphorus , Total Nitrogen	Mg^+ , Ca^+ Na^+ , K^+ CO_3^- , HCO_3^- Cl^- , SO_4^-	Cr, As, Pb, Hg, Ni, Cd. Fe, Zn	Total Coliforms, Faecal Coliforms

Soil

General Parameters	Nutrients	Toxic Metals*
pH, Salinity, Oil and Grease, Sodium Absorption Ratio, Sediment Texture, a. Sand b. Silt c. Clay	Organic Carbon, Nitrate, Phosphate	Cr, Pb, Hg, Ni, Cd, Zn, Fe