# BIOSTARTS VENTURES

Atri Green View, 5 E, Kamalgazi,
Kolkata – 700 103, West Bengal, India

Mob: +91 9903323469 I E-mail: prabio@gmail.com

*Climate friendly Bioinnovation*

**PROFILE**

Biostarts Ventures is an Environmental Biotechnology, sustainable Nature based Solutions (NbS), project management & Consultancy company based at Kolkata, West Bengal, India. Specialized in Smart Ecosystem Engineering using natural materials to protect & restore natural resources.

Biostarts Ventures engaged in practical applications of an integrated climate-friendly bio-engineering intervention by environmental biotechnology applications to create strong and durable climate resilient Water, Soil contamination & Air Pollution management by increasing the ecological footprints.

We have a range of innovative, scientific, sustainable, environment friendly & cost-effective environment management solution using low carbon Bioengineering techniques

- Restoration of Contaminated Lakes, Water bodies & Canals
- Integrated river pollution management & Riverfront front development
- River embankment Slope Protection & Stabilization
- Fly ash dump site pollution mgmt. and Mining area sustainable plantation development
- Solid Waste Management solutions
- Closed Solid Waste dump site stabilization, green capping & land recovery
- Contaminated site management & Land recovery
- Low Carbon Green Climate resilient smart city planning
- Blue Green Infrastructure (BGI) Projects
- Biodiversity Park developments
- Nature based Agri-horticulture developments
- Coastal Protection & Restoration
- Wetland Conservation

The Bio-engineering techniques are integrated technological interventions by environmental biotechnology to create strong and durable climate resilient Water, Soil contamination & Air Pollution Management by increasing ecological footprints.

We are providing the project planning, Concept design, DPR, ToR, & Report Generation with execution plan, project monitoring, Assessment & Reporting. Environmental Sustainability, Policy, Circular Green Economy, Climate change Adaptation & Mitigation stakeholder management & evaluation.

We are engaged in project management consultancy & implementation of smart eco-system engineering focused on Water & soil reclamation & air pollution projects for Urban development Dept. , Urban Development & Green City Mission, Irrigation & Waterways Department (I&WD), Municipal Engineering Directorate (MED), Govt of West Bengal, Lucknow Development Authority, Bokaro Steel & Thermal Power Plant, IEPL – ORICA ( explosive manufacturing company in Gomia, Jharkhand) Tourism Dept. Govt.of Kerala, and Corporate companies on Sustainable Greentech practices to minimize the environmental impacts.

Consultant to PricewaterhouseCoopers (PwC), India as Environmental Sustainability on Consulting Services for Climate friendly interventions, Policies, capacity building and Sustainability Governance on Low carbon & Climate Resilience. Blue Green Infrastructure (BGI) & Nature based Solutions (NbS) for Climate Change Mitigation projects for urban department & Smart City projects

## SUSTAINABLE ENVIRONMENT MANAGEMENT SOLUTIONS

**Waterbody/ Lakes Rejuvenation by Nature-based Solutions ( NbS)**


Floating Islands & Solar Aeration systems

**Project Consultant - Irrigation & Waterways Dept. Govt.of West Bengal**

## WATER & SOIL RECLAMATION USING BIOENGINEERING SOLUTIONS

## Canal Restoration, Kolkata

**Project Consultant - Irrigation & Waterways Dept. Govt.of West Bengal**

## Canal Restoration, Kolkata

**Project Consultant - Irrigation & Waterways Dept. Govt.of West Bengal**

## Akkulam Lake Rejuvenation using Bioengineering Solutions




**Lake Restoration Project – Tourism Dept. Govt.of Kerala** (Area - 225 Acres)
**Akkulam Lake, Trivandrum, Kerala**

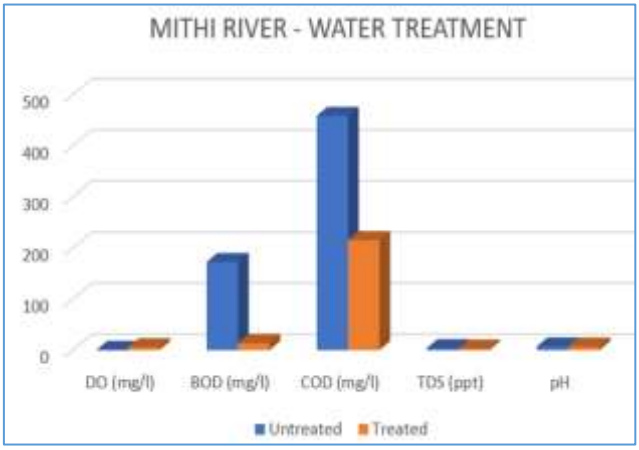
## Mithi River Rejuvenation Project, Mumbai

**Client: Mumbai Metropolitan Region Development Authority (MMRDA)**
**BKC, Bandra (E) Mumbai**

**Project Partners – University Mumbai**
**Biotechnology Dept. Mumbai**


**Mithi River Treatment system for Sewage. Effluent, Saline and Tidal Impacted area by In-situ Bio-phyto remediation**

| Sl.. No. | Parameter studied | Untreated | Treated |
|---|---|---|---|
| 1 | DO (mg/l) | 0.5 | 5.8 |
| 2 | BOD (mg/l) | 172.5 | 14 |
| 3 | COD (mg/l) | 458.45 | 215.3 |
| 4 | TDS (ppt) | 4.00 | 3.18 |
| 5 | pH | 7.287 | 7.0 |



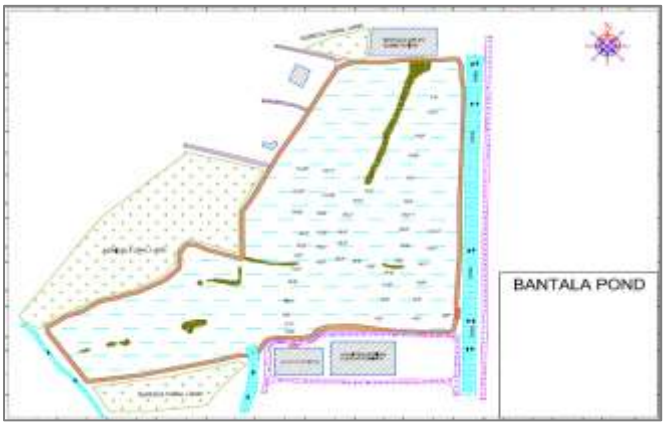

**Results of the water treatment performed in the Mithi river in 25 days**

In-situ Water treatment by Bioengineering & Microbial Consortium

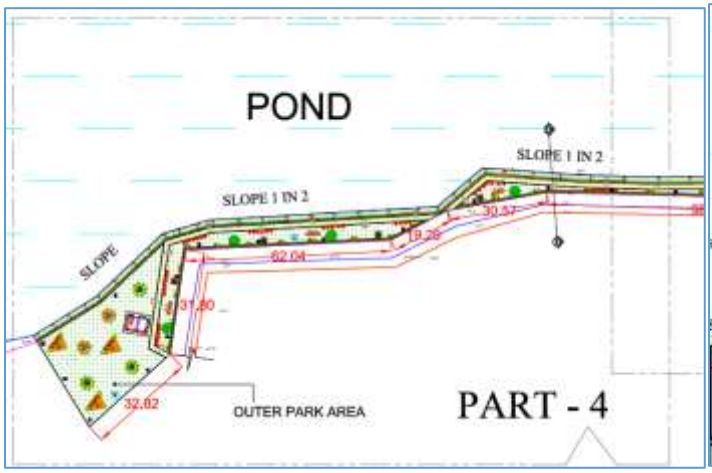
**Bantala Lake rejuvenation project, Kolkata, West Bengal**

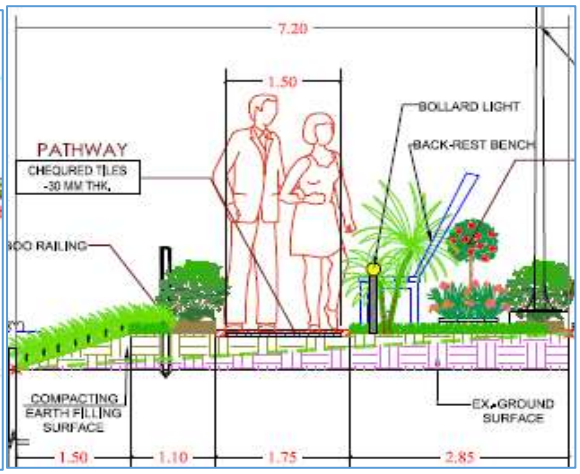
**Client: Nabadiganta Industrial Township Authority (NDITA) Salt Lake, Kolkata**

**AMRUT MISSION 2.0 ****


Lake Area 40 Acres –
Bantala Leather Complex Industrial water contaminated area




**Bantala Sector VI Lake Eco rejuvenation by in-situ treatment**
**Nature-based solutions & smart ecosystem engineering**

Project design & DPR consultant to

**NABARD Consultancy Services (NABCONS)**

Kolkata, West Bengal

*** DPR Approved*

**River / Irrigation canal embankment stabilization using Bio-engineering techniques**

**Slope stabilization using bioengineering solutions**

**Project consultant to IRRIGATION & WATERWAYS DEPARTMENT ( I&WD), Govt. of West Bengal**

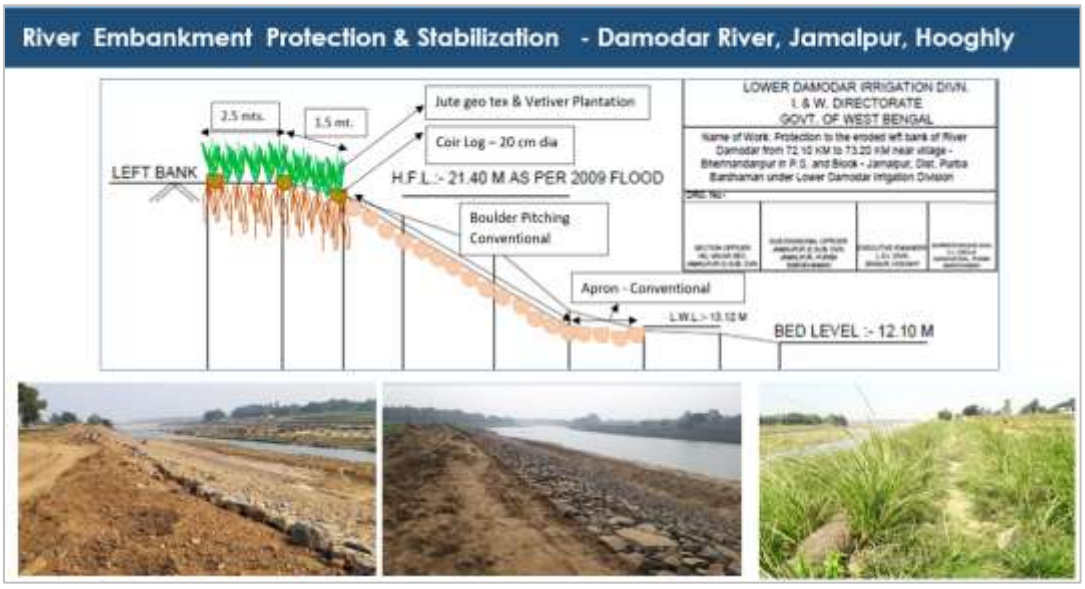
**Project Site - Irrigation canal embankment, Bankura, West Bengal**

**Irrigation canal embankment stabilization using Bio-engineering techniques**


**Project Site - Irrigation canal, Bankura , West Bengal**

**Project consultant to IRRIGATION & WATERWAYS DEPARTMENT ( I&WD), Govt. of West Bengal, India**

**River embankment stabilization using Bio-engineering techniques**



**Vetiver bioengineering on river embankment**

**Bokaro Steel & Thermal Power plant**
**Fly Ash Dumpsite stabilization & Green Capping**

**Project by: BOKARO POWER SUPPLY COMPANY (P) Ltd. (BPSCL)**
**Bokaro, Jharkhand, India**

**Project Site slope Area - 100 mt. Height x 80 mt. width (8000 Sq.m)**

**Flyash mount Stabilization by Vetiver Bioengineering & Nature-based Solutions (NbS**

**(Phase – 1)**



Area – 100 mt. Height x 80 mt. width - 8000 Sq.m

**Fly ash mount stabilization, Pollution control by Bioengineering & Green capping**

**Flyash mount Stabilization by Vetiver bioengineering & Nature based Solutions (NbS)**

**(Phase – 2)**



Area – 100 mt. width x 80 mt. Height - 8000 Sq.m

**Fly ash mount stabilization, Pollution control by Bioengineering & Green capping**

# BSL, BPCL join hands for first time Bio stabilization of fly ash

**PNS ■ Bokaro**

Fly ash dump site has a typical problem of spreading of fly ash by wind, water to create e severe air, water and soil contamination of surrounding area. This leads to a severe environmental impact and it is very difficult to restore and revive the land through conventional civil and partial remedial approach. In normal conditions green belt development & restoration is very difficult due to the high content of heavy metals in fly ash and complex texture of fly ash in terms of extremely less porosity and distinct properties of fly ash in summer season and rainy season. Thus to overcome such critical problem for the first time ever in Jharkhand BPCL with BSL join hands for Fly Ash Dumpsite stabilization & Green capping using bio-engineering components and thus collaborated this Bio stabilization project in association with M/s Biostarts Ventures whose belief is to explore opportunities to tackle ecological problems right at the source. This will prove beneficial in containing pollution due to fly ash. In fact, it is learnt that very few industries in the country have done bio stabilization of fly ash. It is a reflection of the commitment of both BSL and BPSCL for environment conservation.

At present this project has been executed for 5500 square meter area of fly ash dump site, the rest will also be done in a phased manner. Basically Jute Geo textiles, Coco Geo Log filled with coco fiber and outer coir net, Vetiver plants, Biomass Substrates, Microbial consortium, Fertilizers & Hydro gel, Fertilizers for plant growth , Watering & maintenance materials are used for green capping and ecofriendly stabilization of fly ash piles . The advantage of this method is that Vetiver plants become ready in just 4 to 5 months and take root. Thus, they prove to be helpful in controlling the air and water pollution as it's a special type of plant which takes root firmly on the fly ash piles and thus, controls the shade pollution.

**Media article on Thermal power plant Fly ash dumpsite stabilization by bioengineering solution**

## Fly Ash dumpsite area Green Capping & Phyto Stabilization to Control Soil, Water & Air Pollution


Project Site – National Thermal Power Corporation (NTPC) Dadri, UP

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**Applications – Eco Restoration of Fly Ash Dump Sites, Mining area, Closed Solid Waste dump site , Soil contaminated sites and Degraded land reclamation etc..**

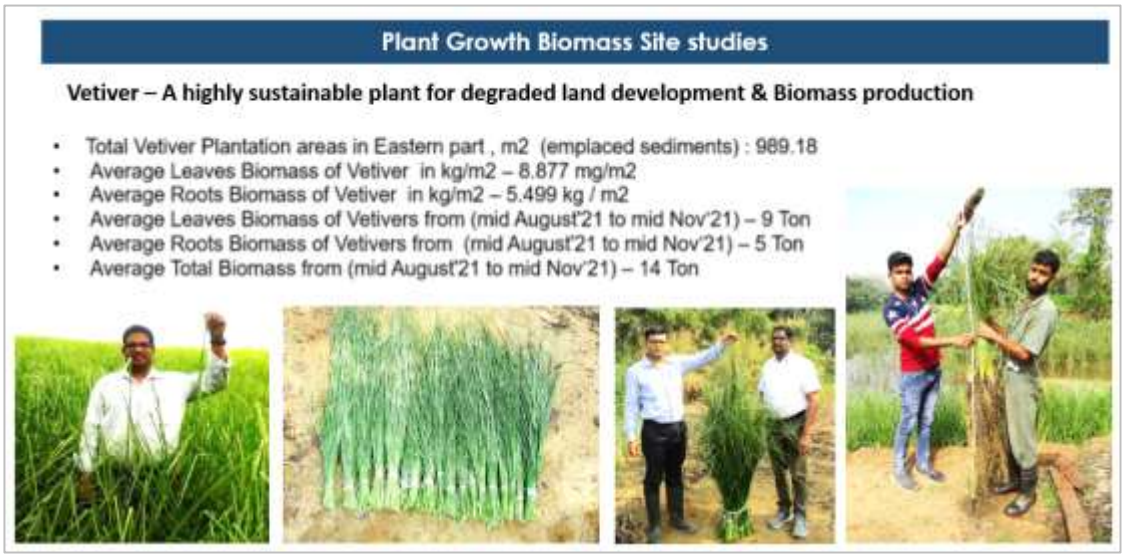
**Leachate Pond Slope Stabilization, Leachate & Sludge Treatment by Vetiver plantation by Nature based Solutions (NbS)**

**Leachate area contaminated site management**

**Project Site: Orica - Indian Explosive Pvt. Ltd, Gomia, Jharkhand, India**

## Vetiver plantation by Nature based Solutions (NbS)





## KEY OPERATIONAL AREAS

- ❑ Technology Development
- ❑ JV Projects
- ❑ Consultancy Services
- ❑ Corporate Social Responsibility (CSR ) Project Management

  Site Studies, Site Specific Designing, Material Resource Mgmt. Execution Support, Evaluation & Environmental Impact Assessment
- ❑ Material Resource Management

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## MEDIA & AWARDS


## Our clients

ADITYA BIRLA GROUP · pwc · Urban Dev. Govt of West Bengal · NABCONS · Irrigation & Waterways Dept. ( I& WD) Govt. of West Bengal · Kolkata Metropolitan Development Authority · सेल SAIL · WBPDCL · GLOSTER LTD. · एनटीपीसी NTPC · Biosfera · NxCity Sweden · एम एम आर डी MMRDA · ORICA India - Australia

*Contact us*

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Pradeep Kumar
Chief Sustainability Officer
M: +91 9903323469 I E: prabio@gmail.com