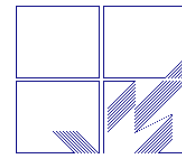




# PROFILE

## Disaster Management



**JPS Associates (P) Ltd**  
**New Delhi**

**ABOUT JPS ASSOCIATES**

JPS Associates is a consulting firm specializing in management, development, agriculture & natural resources management, and engineering. The company was founded in 1987 and incorporated as private limited company in 1995. JPS has amassed a reputation for improving and enhancing performance excellence of some of the most reputed clients and has been working in development projects directly with and funded by international and bi-lateral development agencies like the World Bank, Asian Development Bank (ADB), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), International Labour Organisation (ILO), Global Environment Facility (GEF), European Union (EU), United States Agency for International Development (USAID), Department for International Development (DFID), Japan Bank for International Cooperation (JBIC), Japan International Cooperation Agency (JICA), French Development Agency (Agence Française de Développement- AFD), Canadian International Development Agency (CIDA), Australian Agency for International Development (AusAID), Kreditanstalt für Wiederaufbau (KfW), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Norwegian Agency for Development Cooperation (NORAD). Our government clients include national institutions, central government, state government, local government and parastatals such as public sector undertakings and public sector banks.

We are a team with diverse range of expertise and experience. The Head Office in New Delhi is the driving force behind the Company activities, centralising the management specialists and design staff and providing overall direction and supervision to the on-going projects. We also have an extensive network of retained experts, who add strength to our team in sharing commitment to deliver exceptional results for our clients.

We leverage our more than 30 years of experience, deep knowledge of processes, insights, and best practices internalised through implementing about 1000 projects. These are supported by strong IT/technology, reengineering, analytics and global delivery capabilities to deliver a comprehensive client solution. From strategy through implementation, our hands-on approach has achieved success in delivering quantifiable and value-driven results. Our partnership with our clients ensures a lasting effect which is ultimately their asset and knowledge. Our reputation for being leaders in specialised fields of central and local government has built us a solid clientele in our home base India, and a reach into the international arena.

JPS is an ISO 9001: 2015 certified company. We pursue our quality policy and all business units integrate the policy and further strengthened by quality surveillance and project monitoring team.





## FIELDS OF SPECIALIZATION

### Management

- Financial Management and Accounting
- Governance, Public Services and Policy
- Organisation Development & Institutional Strengthening
- Information Management & E-Governance

### Development

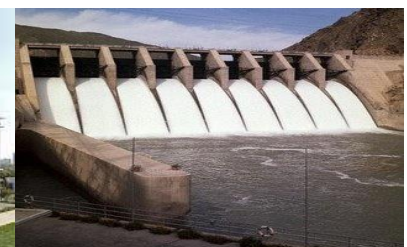
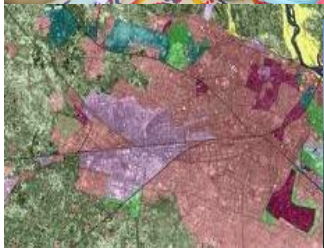
- Social Development & Surveys
- Public Health
- Urban Development Planning
- Regional and Rural Development Planning
- Tourism

### Agriculture & Natural Resources

- Natural Resource Management
- Environmental Management
- Agriculture and Agri-Business

### Engineering

- Water & Environment Engineering
- Transportation
- General Engineering





**RANGE OF SERVICES:**

JPS provides specialist sector specific services which are presented under each business units. The general services include the following:

- Policy
- Project Planning and Preparation
- Program Management Consultancy Services
- Master Planning & Conceptual Designs
- Field Surveys & Investigations
- Pre-Feasibilities and Feasibilities Studies
- Detailed Designs/ Detailed Project Reports
- Financial Management & Accounting Services
- Modelling for PPP, BOT/BOOT projects
- Project/Program Monitoring & Evaluation
- Capacity Development and Institutional Strengthening
- Human Resources Planning
- Manpower Analysis
- Business Planning
- Information Management Services/ Management Information System (MIS)
- Environmental Impact Assessment And Management
- Socio-Economic Studies & Social Impact Assessment
- Community Development
- Resettlement & Rehabilitation
- Livelihoods and Sustainable Development
- Efficiency Improvement/ Cost Reduction Study/ Profitability Improvement Studies
- Tender Documentation
- Concession Agreements
- Bid Processing
- Procurement Assistance
- Owner's Engineers and Independent Engineers Services
- Project Management / Construction Supervision
- Third Party Quality Control/ Quality Assurance
- Impact Assessment Studies

**Disaster Management Services:****Preparedness**

- Disaster-Specific Response Planning
- Flood Warning and Emergency Evacuation Planning
- Emergency Management Training for Multiple Public Safety Disciplines
- Emergency Operations Drills
- Threat Hazard Identification and Risk Assessment
- Incident Command System (ICS) Training

**Mitigation**

- Hazard Mitigation Planning
- Loss Avoidance Studies
- Floodplain Management Studies and Analyses
- Climate Adaptation Planning
- Comprehensive and Master Community Planning
- Land Use and Zoning Policy and Plan Development

**Response**

- Disaster Operations
- Incident Action Planning
- Incident Command System Report

**Short-term Recovery**

- Infrastructure and Residential Damage Assessment
- Economic Redevelopment Program Planning
- Program Management

**Long-term Recovery**

- Water and Wastewater Infrastructure design
- Flood control and Green Infrastructure Design
- Public Safety Facility Design
- Transportation System Design



**Location:** Uttar Pradesh, India

**Client:** UP Irrigation & Water Resource Department (UPIWRD) Government of Uttar Pradesh

**Funding Agency:** World Bank

**Period:** June, 2019 – March, 2021

**Associate Firm:** Nil

## RELEVANT EXPERIENCE

**Consultancy Services for Planning Community Outreach and Enhancing Community Participation for Flood Management in Targeted Areas of Rapti River Basin (Credit No.5298-IN) under Uttar Pradesh Water Sector Restructuring Project (UPWSRP) Phase II of U P Irrigation & Water Resources Department, Government of Uttar Pradesh**

### Brief Description of Project:

In the State of Uttar Pradesh, annually recurring floods in the Ganga, Yamuna, Ramganga, Gomati, Sharda, Ghagra, Rapti and Gandak rivers inundate about 2.7 million hectares, adversely impact more than 21.1 million people and cause INR 4.3 billion per annum as damages. More than 30% of the total geographical area of the state is flood prone including 23 districts in the eastern, western and central regions. Recurrent floods are devastating to the state economy and undermine poverty alleviation efforts. Floods affect lives, livelihoods, productivity and the security of existing investments, as well as acting as a disincentive for future investments.

The Government of India (GOI)/ Government of Uttar Pradesh (GoUP) has received a credit from the International Development Association (IDA) to finance the UP Water Sector Restructuring Project (UPWSRP) Phase-2 and JPS has been contracted for providing consultancy services for Planning Community Outreach and Participation in Emergency Flood Management in Rapti River Basin in Uttar Pradesh State.

### Objectives:

#### Part-A:

- To review national and international experience on community involvement in embankment surveillance and protection.
- To recommend the appropriate strategic approach in organizing community participation, taking note of the community's needs, capacity and practicable implementation, in order to send localized embankment and river status reports to UPIWRD's Embankment Asset Management System (EAMS). The Strategic approach needs to address the participatory process, resources maximization and motivation.
- Pilot Implementation in select field divisions and submit report for basin-wide implementation.

#### Part-B:

- To review national and international experience on community participation in emergency flood response.
- To recommend the most appropriate community outreach program for dissemination of the flood alert from the UPIWRD's FFMS, taking note of status of community- level contingency action plans of the Disaster Management Department, community's needs, capacity and practicable implementation.
- Pilot Implementation in select field divisions and submit report for basin-wide implementation.

### Services Provided:

Part A of the consultancy assignment covers communities adjacent to the embankments which are immediately impacted by any embankment breach or cut, that would need to be involved in surveillance of vulnerability or failure to take emergency action for strengthening. Community participation would include reporting on embankment vulnerability based on routine visual observations of embankment condition and river course changes during flood season and specifically in response to embankment alerts from EAMS on specific reaches. In Part B, communities in the flood prone area need to



have timely access to flood forecasts for better preparedness at the community level. For both parts (to be executed concurrently), the area coverage would be the main stem of Rapti River and four major flood causing tributaries (covered under the flood forecasting and inundation mapping consultancy).

- JPS is envisaged to interact with select communities on sample basis (making sure that the sample represents the varying degree and nature of flood hazard and vulnerability in the respective areas. The sample design will be based on sound statistical principles. JPS, as part of sample survey, is expected to also interact with concerned field divisions in the area for suggestions on how the community outreach for emergency flood management or inputs on embankment vulnerability can effectively supplement field staff inspection;
- JPS is to evaluate community participation modes for emergency flood preparedness or report on embankment vulnerability and recommend how the existing Panchayati Raj or other community institutions would be involved;
- Community outreach would include design of flood alerts from the flood model customized for community action, contingency planning and emergency management at community level; embankment surveillance and issue-reporting to supplement UPIWRD field offices; and targeted embankment and river surveillance based on predicted morphological changes from river morphological trend model;
- Review national and international experience to support the development of community participation mechanism. JPS is to also interact with the stakeholders to augment the findings and recommendations;
- Suggest types of embankment information to be transmitted by the communities in real-time and on need basis (as requested by the Irrigation Department) for integration in EAMS. The embankment information may include visual observation of river flow close to embankment, dramatic changes in river alignment, damage to river training works and embankment structures, wave action damaging the river-side slope of the embankment, seepage of water through embankment, rat holes, rapidly rising river water level, miscreants trying to cut the embankment, etc. In case of embankment failure they will report about the status of breach such as location, time, and approximate length. JPS is to take note of the means of community participation, the communication infrastructure at the community level, functional status and efficiency and community skill sets. JPS is expected to recommend whether the existing communication means will be utilized or new infrastructure will be needed;
- Recommend information flow to different identified recipients including EAMS, Irrigation Department Offices during normal and emergency situations;
- Develop community feedback mechanism by which the community can be kept informed about the action being taken by the department based on and after their reporting;
- Design flood alerts for effective use by the community, taking note of flood hazard, capacity and current status of community response;
- Evaluate typical communication infrastructure at the community level, functional status and efficiency, and community skill sets. JPS is to recommend how the existing communication means will be utilized and recommend additional capacity building that will be needed;
- Develop plan, approach, protocol and mechanism for community participation in embankment surveillance, pilot in select communities in the basin, and prepare plan for basin-wide implementation;
- Broadly assess the financial implications of community participation and recommend the appropriate mix of voluntary and funded participation;
- Develop the Action Plan for implementation in the whole basin and also a plan for piloting it in a selected portion (say, one Irrigation Department Division) in Rapti River Basin.



**Location:** Bihar, Odisha and Delhi

**Client:** Asian Development Bank (ADB)

**Funding Agency:** Asian Development Bank (ADB)

**Period:** 01 July, 2015 - 15th October, 2015

**Associate Firm:** Deltares, Netherlands, RMSI Private Limited (RMSI), India

## **TA-8089 IND: Operational Research to Support Mainstreaming of Integrated Flood Management under Climate Change**

### **Brief Description of Project:**

ADB's country partnership strategy for India (2009-2012) identified a need to focus on knowledge solutions, the preparation of operationally relevant knowledge products, exposure to best practices, and promoting learning across sectors and states. The ADB water operational plan (2011-2020) forecasts more frequent and severe extreme weather events in India and states that the effects of worsening of weather can be mitigated by structural and nonstructural measures such as water governance and flood management.

The TA is envisaged to undertake operational research to identify and test integrated flood mitigation and flood plain management strategies appropriate for India. The strategies will balance structural and nonstructural measures and provide the mechanisms for mainstreaming IFM at different government levels. The TA is expected to help promote change from a current narrow, structurally focused flood protection intervention approach in the country and support mainstreaming of integrated and holistic management measures. The TA is envisaged to study two sub-basin states (Orissa & Bihar) - one intra-states (within state) and another inter-state (more than one state). The study will develop strategies and approaches appropriate for implementation in the two sub-basins which are also replicable in other flood-prone sub-basins and states.

The expected project outcome is improvement of knowledge of IFM for decision making and program implementation.

### **Services Provided:**

JPS provided the following expert resources as part of the project team to undertake the assignment.

### **Water Resources Economist (WRE)**

- Identify the preferred measures of cost effectiveness and cost-benefit analyses, as applied to flood risk management;
- Review the data available to support value-for-money assessments in states and sub-basins;
- Bring existing data together for use in value-for-money assessments; and
- Prepare an outline approach to primary data collection and analytical tools.

### **Legal:**

- Review the current regulatory arrangements relating to the water and flood management practice in India;
- Assess gaps and potential requirements for integrated planning and management across stakeholders; and
- Outline the necessary legal arrangements to support the implementation of river basin organizations.

### **Environmentalist:**

- Review of the environmental impacts of flood management strategies in the focal and secondary sub-basins; and
- Proposals for integrating environmental conservation with flood and flood zone management during an IFM planning process and RBO operations.





**Location:** Patna

**Client:** Flood Management Improvement Support Centre, Water Resources Department, Government of Bihar

**Funding Agency:** World Bank

**Period:** 27th November, 2014 - June, 2016

**Associate Firm:** Nil

### **Consultancy Services for Developing Approach, Protocols and Mechanisms for Community Participation in Embankment Surveillance and Piloting in Select Communities in Kosi River Basin**

#### **Brief Description of Project:**

The Government of Bihar intends to strengthen the flood management and flood forecasting system (consequent to the impact of Kosi Flood 2008) under the 'Bihar Kosi Flood Recovery Project' (BKFRP) through a credit from the International Development Association (IDA). The credit amount of US\$220 million is envisaged to be used for the payments for goods, works, related services and consulting services to be procured under this project. The overall project objective is to support the flood recovery as well as future oriented risk reduction efforts of GoB through (i) reconstruction of damaged houses and road infrastructure (ii) strengthening the flood management capacity in the Kosi basin (iii) enhancing livelihood opportunities of the affected people and (iv) improving the emergency response capacity for future disaster.

The objectives of captioned consultancy assignment are as follows:

- To review past community involvement in embankment surveillance and protection, and identify reasons for subsequent failure of the involvement;
- To recommend the most effective modalities to effectively associate the communities for embankment surveillance in normal time and during flood, to patrol and send localized embankment reports to EAMS, support WRD flood fighting efforts, etc;
- To plan and conduct workshops in select communities to develop consensus on suggested modalities;
- Develop plan for basin-wise implementation and piloting in Kamla-Kosi basin; and
- Pilot Implementation in select field divisions to demonstrate and finalize strategy.

#### **The scope of work includes the following:**

- Interact with selected communities on sample basis (making sure that the sample represents the varying degree and nature of flood hazard in the project area). The sample size and selection of communities is envisaged to be designed by JPS based on sound statistical principles, and shall cover the embankments along Kosi and Kamla rivers. JPS, as part of sample survey, will also interact with concerned field divisions for suggestions on how the community feedback can effectively supplement field staff surveillance;
- Evaluate community participation modes for embankment surveillance in normal times and during flood to supplement the institutional efforts. JPS is envisaged to recommend how the existing Panchayati Raj Institutions would be involved;
- Suggest types of embankment information to be transmitted in real-time and on need basis (as requested by the WRD) for integration in EAMS. The embankment information may include visual observation of river flow close to embankment, dramatic changes in river alignment, damage to river training works and embankment structures, wave action damaging the river-side slope of the embankment, seepage of water through embankment, rat holes, rapidly rising river water level, miscreants trying to cut the embankment, etc. In case of embankment failure, JPS to envisaged to report about the status of breach such as location, time, and approximate length. JPS to envisaged to take note of the means of community participation, the communication infrastructure at the community level, functional status and efficiency, and



- community skill sets. JPS is envisaged to recommend whether the existing communication means will be utilized or new infrastructure will be needed;
- Evaluate typical communication infrastructure at the community level, functional status and efficiency, and community skill sets. JPS is envisaged to recommend how the existing communication means will be utilized and recommend additional capacity building that will be needed;
  - Recommend information flow to different identified recipients including BAPEPS, FMISC- EAMS, FMC, and field WRD Offices during normal and emergency situations;
  - To sustain the community participation, JPS to envisaged to develop community feedback mechanism by which the community can be kept informed about the action being taken by the department based on and after their reporting;
  - Hold workshops in selected communities in the basin area to reach consensus on the proposed participation modalities;
  - Develop a plan for the annual pre-season workshops for ensuring community preparedness;
  - Assess financial implications of community participation, recommend whether the participation would be voluntary or funded and assess the fund requirement;
  - International experience would be reviewed to further support the development of community participation mechanism. JPS is envisaged to also interact with the stakeholders and the consultant undertaking Establishment of Embankment Asset Management System to augment findings and recommendations;
  - Develop the action plan for implementation in the whole basin and also a plan for piloting it in a selected portion (say, one WRD Division) in Kosi Basin; and
  - The plan will be piloted in select field divisions to demonstrate and finalize strategy.

#### Services Provided:

- **Review of Current Status in Community Participation and Develop Plan for Consultancy:**
  - To review international, national and Bihar experience in community participation for embankment surveillance and identify possible approaches;
  - To review past community involvement in Bihar in embankment surveillance and protection, and identify reasons for subsequent failure; and
  - Develop plan for sample survey of communities to evaluate community capacity, and potential for optimal participation in embankment monitoring. The sample size and selection of communities will be designed by JPS based on sound statistical principles, and shall cover the whole length of embankments along Kosi-Kamla.
- **Develop Approach, Protocols and Mechanisms for Community Participation:**
  - Conduct sample surveys of communities along embankments, and concerned field divisions, on the most effective modalities for community participation in embankment surveillance in normal times and during flood, to patrol and send localized embankment reports to EAMS. The survey may include community level flood risk, motivation for participation, institutional set-up, communication infrastructure at the



community level, functional status and efficiency, community skill sets, etc;

- To suggest community participation modes in embankment surveillance in normal times and during flood to supplement the institutional efforts, and recommend how the Panchayati Raj Institution would be involved;
  - To recommend the nature, contents and format for the community reports, based on visual observations of embankment condition and river flow. Community reported embankment and river status data will be integrated with EAMS for developing the maintenance and planning module. JPS would refer Bihar Checklist finalized for inspection of embankments;
  - To recommend the modes and information flow to different identified recipients including BAPEPS, EAMS, FMISC, FMC, and field WRD Offices during non-flood and emergency situations;
  - To develop community feedback mechanism and formats by which the community can be kept informed about the action being taken by the department after their reporting; and
  - To assess financial implication of community participation and recommend whether the participation would be voluntary or funded.
- **Conduct workshop, training and piloting in select communities:**
- Conduct workshops in select communities, along with concerned field division staff, to develop consensus on community participation modalities, and finalize in stakeholder workshop in WRD in Patna;
  - Develop a plan for the annual pre-season workshops for ensuring community preparedness, and conduct pilot workshops to improve plan. The plan would include training material to be used in workshop;
  - Develop a plan for implementing recommended approach in the basin and to pilot in select communities; and
  - Pilot in select field divisions to demonstrate and finalize strategy.
- **Place of Performance for Different Tasks:**
- Area Covering Kamla-Kosi Basin and Patna

**Location:** Guwahati (Assam)

**Client:** Assam State Disaster Management Authority (ASDMA)

**Funding Agency:** Govt. of Assam

**Period:** 23.10.2012 – 2014

**Associate Firm:** Nil

### **Training Need Assessment & Development of Training Modules on Incident Response System (IRS)**

#### **Brief Description of Project:**

Conduct a Training Needs of the notified incident Response Team (IRT) members at different levels i.e. State, Districts, Civil Sub division & Revenue circle levels and senior Government officials of the Government of Assam associated with emergency response. Based TNA findings, prepare recommendations for training which will enhance the capacity at State, District, Civil Sub Division and revenue Circle levels to implement the incident Response System. Develop the separate training modules for all stakeholders for all levels as per the TNA findings.

#### **Services Provided:**

- Conduct Training Needs Assessment of functionaries involved in IRS (Incident Response System) as detailed in the guidelines gaps and suggestion training and non training interventions.
- Develop Training Modules for all stakeholders identifying as per the findings of the training needs assessment.



**Location:** Chamba  
(Himachal Pradesh)

**Client:** Government of  
Himachal Pradesh Forest  
Department

**Funding Agency:**  
Government of Himachal  
Pradesh Forest  
Department

**Period:** August 2010 -  
2014

## **Preparation of Comprehensive CAT Plan for the Ravi River Basin in Himachal Pradesh for Forest Department, Government of Himachal Pradesh**

### **Brief Description of Project:**

The Ministry of Environment & Forests has stipulated preparation and implementation of Catchment Area Treatment Plan in cases related to diversion of forest land for medium and major irrigation projects and for hydroelectric power projects under Forest Conservation Act, 1980. The Catchment Area Treatment Plan is an essential document as it portrays the ecological health of the catchment area and various soil & moisture conservation and watershed management programmes required to arrest soil erosion to improve free drainage in the area and to rejuvenate the degraded ecosystem in the catchment. With the demand for power on the increase, especially in the northern region, there has been considerable stepping up in the harnessing of the hydro power potential of Himachal Pradesh. The treatment of the catchment areas of the river is mandated to the H P Forest Department, which implements the approved Catchment Area Treatment Plans (CAT Plans) funded by the individual Hydro-Electric Power Projects (HEPPs). The Government of Himachal Pradesh, however, has switched over from individual project based planning to a more holistic approach involving river basin based planning and management.

The broad objectives for comprehensive catchment area treatment for Ravi river basin are:

- Checking soil erosion and land degradation by taking up adequate and effective soil conservation measures, both engineering as well as biological, in erosion prone areas (mainly under very severe and severe erosion intensity categories);
- Rehabilitation of degraded forest areas through afforestation and facilitating the natural regeneration;
- Rehabilitation of degraded slopes and landslide prone areas;
- Improvement of land capability and moisture regime in the watersheds;
- Promotion of land use to match land capability of the sub-watersheds;
- Prevention of soil loss from the catchments to reduce siltation of reservoirs;
- Prevention of soil erosion from downstream areas so as to reduce the siltation of streams, path roads and agricultural fields;
- People's involvement in the treatment and management of catchment, including payment for eco-services to the local communities;
- Upgradation of the skills in planning and execution of land development;
- Improvement of pasture land by introducing improved palatable grasses;
- Plantation of wild fruits species and creation of water resources for wildlife management; and
- Capacity building of the personnel of HPFD in handling the dynamic process involved vis-a-vis technology transfer and knowledge sharing.

### **Services Provided:**

The consultancy comprised of the following tasks:

- Preparation of baseline data for the Ravi river basin (from the source of the Ravi river upto upstream of Ranjit Sagar Dam and its catchment in HP) having approximately 5450 sq km catchment area with the primary objective of obtaining a realistic picture of the status of each micro-watershed in their catchments. For this, a holistic approach of using GIS based maps and satellite images as well as other land based information using primary and secondary sources was adopted. Moreover, GIS Base Maps were prepared



on micro-watershed basis with in-built capacities for updating continuously, with enough storage for historical trend data for each parameter for the River basin. The baseline would serve as a tool for assessment of the current situation, inventorisation, future planning of works in the catchment areas and their subsequent monitoring as well as an important benchmark for environmental impact assessment in future. The micro-watershed shall be the basic spatial unit of data collection and shall allow for flexibility to convert into distinct beat, range, division and district level data.

- Undertaking a detailed environmental and socio-economic baseline comprising of the following activities:
  - Preparation of Base Maps using GIS;
  - Collection of baseline data from the Forest Department;
  - Collection of other secondary data;
  - Collection of primary data;
  - Finalisation of GIS Overlays
- Collecting primary and secondary data in respect of the following:
  - Geographical features such as boundaries of watersheds, slope (contours, elevation), drainage and major landslides;
  - Hydrological, geo-hydrological and hydro-meteorological data, precipitation, run-off, water resources in the basin covering quality and quantity aspects of surface as well as ground water resources;
  - Land use and land classification;
  - Forests and vegetation (forest types; density; legal status including identification/demarcation of division, range and beat boundaries; pastures; plantations; area available for plantation; nallah treatment and other soil and water conservation works undertaken in the past five years; unculturable area; and protected areas);
  - Infrastructure (roads, highways, power projects, industries, trekking routes etc);
  - Towns, villages, settlements, demographic (human and livestock) and socio-economic data;
  - Soil and erosion intensity (gradation and/or prioritization of MWS into high, medium and low erosion intensity classes); and
  - All other features relevant to basin-wide planning.
- Analysis of the current situation based on the development trends in the State for categorization of micro-watersheds in the river basin on erosion intensity and their susceptibility to sediment loads and analyzing the micro-watershed level forest coverage and quality data and identify patterns that are responsible for higher sediment loads;
- Organising stakeholders meetings for each sub-watershed to seek feedback on the reasons for such patterns of sediment loads as well as the potential and possible methods and activities to reduce the sediment load;
- Identifying (i) in what type of context, what kind of treatment measures or combination of typical treatment measures will be required (ii) where treatment will give best results (benefit/cost ratio) (iii) the cost of these treatments in different physical contexts and (iv) the methods of monitoring and evaluation of success from each type of treatment in each physical context;
- Based on an analysis of development trends in the State, identifying whether degradation of forest areas, erosion (such as from road construction) and sediment load will be increased, and which micro-watersheds in the river basis are more susceptible to such increased





- sediment loads;
- Based on the above data, preparing an integrated Catchment Area Treatment Plan for the river basin, complete with micro-watershed treatment plans, implementation arrangements, cost estimates, monitoring and evaluation strategy etc;
  - All MWS specific action plans were prepared for a perspective period of 10 years (with a scenario of unconstrained resources) detailing a full menu of treatment actions required, based on the particular need (sediment load) of the micro-watershed;
  - For each MWS, estimating resources depending on the nature of work, site contexts, and for assured survival of plantation ( with estimate of capital costs and maintenance costs separately);
  - Suggesting, in discussion with all relevant stakeholders, the implementation arrangements for the basin-wide CAT plan including detailed prioritization of the areas and treatments;
  - Preparing model contract documents (for Panchayats, public or private agencies) to be entered with the responsible government agency;
  - Describing a system of community supervision including how any breach of forest rules and regulations will be monitored and prevented;
  - Preparing a financing plan based on an estimate of the trend of plan expenditure of the State Forest Department in last 10 years and suggest the financing mechanisms to implement the basin-wide CAT plan;
  - Preparing a model format for preparing an annual plan by every implementing agency together with the principles of evaluation their performances;
  - Making provision in the GIS Base Map for a number of overlays on financial management system including (i) fund requirement (ii) annual plan and fund release (iii) residual fund requirement and cumulative requirement (iv) all expenditures (from all sources) including current and cumulative expenditure, indicating instances of failure to implement or release funds on time;
  - Preparing an effective Monitoring Plan and Review and Evaluation Mechanism for implementing the basin-wide CAT plan that is linked to GIS Base Map for automatic updation for periodic monitoring, specifying the locations/streams to be monitored, the frequency, the methodology, and the responsibility for monitoring along with a detailed plan for community monitoring and an online community grievance reporting system and disclosure of Annual Plan to the public for each Forest Division or Panchayat; and
  - Preparing a Plan for prevention of further degradation of catchments, covering disposal of construction and excavated waste or muck in hill slopes, minimizing muck disposal and protection of dumping sites to acceptable standards for each road agency or road project, including rural roads.



**Location:** Himachal Pradesh  
**Client:** Himachal Pradesh  
**Funding Agency:** Government of Himachal Pradesh  
**Period:** 20<sup>th</sup> January, 2011 – 31<sup>st</sup> March, 2011  
**Associate Firm:** Nil

## Recasting Work/Action Plans of On-going Catchment Area Treatment Plans for Ravi River Basin in Himachal Pradesh

### Brief Description of Project:

The Forest (Conservation) Act, 1980 stipulates that all Proposals for diversion of forest land for hydro-electric projects of 10 MW capacity or above shall invariably be accompanied by detailed Catchment Area Treatment Plans (CAT Plans). Accordingly, in Himachal Pradesh, many CAT Plans have been approved by the Government of India. Many CAT Plans, though compiled in the late 1990s and early 2000, could not be implemented in a timely manner, as the funds for these were deposited in the Ad-hoc CAMPA, which was not operational. The funds are gradually being released to the State since 2009, enabling the implementation of these CAT Plans. This time gap in the preparation of the CAT Plans and their actual implementation has rendered the documents outdated and impractical to execute. Even for CAT Plans approved at a later date, many changes have taken place during the last few years because of altered ground realities, review of technical/administrative decisions and new advances/ techniques in the field of soil and water conservation, necessitating the recasting of these CAT plans.

The HP Forest Department proposed to undertake recasting of the annual actions plans of the ongoing CAT Plans, based on ground realities, incorporating recent learning in silt management and in consonance with the stipulations on the subject of Catchment Area Treatment, in all the river basins of the State. Recasting of the current CAT Plans has become necessary as the time gap in the preparation of the CAT Plans and their actual implementation has rendered the documents outdated and impractical to execute. The recast Action Plans would prioritise the more cost-effective vegetative measures & bio-engineering methodology over civil structures and target-oriented plantation to encourage soil moisture retentivity, reduce soil erodibility and improved soil & water conservation measures. The objective was to start implementation of the recast Action Plans from April, 2011, by getting the APOs for the year 2011 – 12 approved, as per these recast Action Plans.

The consultancy only involves recasting of the balance unspent amount of the particular CAT Plan, after detailed reconnaissance of the catchment area, in order to maximize the impact of the treatment measures aimed at long term stabilization of the catchments. It does not involve complete re-writing of the CAT Plan document. JPS was expected to draw up year-wise, component specific work program for biological and engineering measures, complete with detailed planning of all sub-elements (nursery, afforestation, enrichment and subsequent maintenance, bio-engineering measures, fencing options, especially live - hedges, water conservation/ moisture retention, reclamation of landslides/landslips, pasture improvement) along with specific methodology to be adopted, and also define clear-cut interventions while making provision for the mandatory stipulations like Payments for Environment Services (PES), Monitoring and Evaluation (M&E), Eco-tourism etc. as per GOHP notification dated 30.09.2009. Under the existing CAT Plans, many treatment measures which were prescribed have not had the desired impact and needed to be substituted with alternatives, emphasizing bio-engineering treatment over civil/masonry structures, moisture retention works and propagation of indigenous, multiple-use species that would incentivize local support for soil and water conservation endeavours. Each CAT Action Plan was to be recast for implementation over the next 10 years and the prescriptions so made to spread the treatment/ funds in a balanced way over all micro- watersheds.

**Services Provided:**

- Delineate the sub-watersheds/micro-watersheds falling in each CAT Plan. Also mark the drainage lines, villages, plantations (last 15 years), nurseries, fire-prone areas, roads, forest buildings, rest houses and treatments already done/ existing on the GIS map available;
- Realignment of Forest Beat boundaries with the nearest MWS boundaries;
- Field reconnaissance of all major works/ drainage lines mentioned in the existing CAT Plan:
  - a. If works already done & existing, the GPS coordinates/ photographs of the same to be mentioned as also the efficacy of works, scope for further improvement through bio-engineering techniques;
  - b. Prescription of new works and reconsidering addition/deletion of unexecuted works as per existing CAT Plan. These to be suitably spread spatially (MWS wise) and temporally (over the next 10 years). Greater emphasis to be on cost-effective bio-engineering methodology and less on civil/ stone structures (at least 50% of the soil conservation budget should be earmarked for bio-engineering and approximately 50% of this for raising bio-engineering species in nurseries in accordance with bio-engineering instructions issued by the HPFD;
- Emphasis on nursery management: A separate chapter on nurseries is to be prepared. This is to be based on visits to all nurseries in the catchments and suggestions for increasing area under nurseries and improvement of infrastructure – water storage, vermi-compositing etc. and future planning to be made; and
- As per the GoHP notification provision for the following should be made:
  - i. 10% of the balance remaining for PES: The recast Plan must clearly list out the works to be done sub-watershed wise against the provision. The PES input be concentrated in areas practicing agriculture/horticulture;
  - ii. 5% for Monitoring & Evaluation: The Plan to include a Monitoring Schedule (for Third Party Monitoring) for the period of the revised CAT Plan. The recast monitoring schedule to also prescribe on-going monitoring of silt, catchment wise along with the sites/agency responsible for this. The HEP concerned/BBMB, would be appropriate sources as they possess the requisite resources/data for the catchment and hence all silt monitoring sites are to be located near to these establishments. In case silt monitoring has to be done by Forest Department, the sites should be at such places where presence of H.P. Forest Department exists in the shape of Forests Guard Hut, Forests Rest House, Range Office or Nursery etc;
  - iii. Training & Capacity build-up of forest staff/ locals with specific relevance to the recast CAT Plan provisions.



**Location:** Una, Himachal Pradesh, India

**Client:** Government of Himachal Pradesh /Himachal Pradesh Forest Department

**Funding Agency:** JICA

**Period:** 1 April, 2014 - 31st March, 2016

**Associate Firm:** Nil

## **Management Consultancy for Swan River Integrated Watershed Management Project (SRIWMP) for Forest Department, Government of Himachal Pradesh, Phase - II**

### **Brief Description of Project:**

In India, damages to the agricultural production and human lives caused by soil erosion and floods are substantial enough to require adequate counter-measures for soil and water management in the affected areas. It is more important to protect small, but valuable cultivable land in the intermediate area between the mountainous regions and the flat plains. The captioned Project is envisaged as an integrated watershed management project containing such activities as afforestation, flood management, soil management and agricultural land protection in such low areas in India, with the experience envisaged to be expanded to other areas. Swan River Integrated Watershed Management Project is being implemented with financial assistance from Japan International Cooperation Agency over a project area of 61,900 hectares, covering 95 Gram Panchayats in Una district of Himachal Pradesh. The catchment area of Swan River in Una District is a typical low mountainous area and suffers from damages to agricultural fields/ lands caused by deforestation and consequential soil erosion and deteriorated flood damages, which are more serious than other districts. As such, Una district was selected as the target area for the model case to stabilize and develop the watershed area of Swan River catchment and to check the flood losses in Una District of Himachal Pradesh.

The Swan River Integrated Watershed Management Project envisages works like afforestation, soil conservation, institution building, livelihood improvement activities etc which would be carried out by involving community members and with active involvement of PRIs and other community based organizations such as Mahila Mandals, Yuvak Mandals, Self-Help Groups etc. The main objective of the Project is to work in an integrated manner, i.e. in collaboration with other departments such as Agriculture, Horticulture, Animal Husbandry & Irrigation and Public Health so as to achieve and stabilize and develop watershed area of Swan River catchments and to check the flood losses in Una district of Himachal Pradesh.

The objectives of the captioned consultancy services are to assist Project Implementation Unit (PIU) and other departments to implement the Swan River Integrated Watershed Management Project through (a) advisory services and (b) services by task concept mainly during the first half of the project period in close collaboration with the Forest Department and other line departments. The Project envisages interfacing with the Forest Department through the Office of Chief Conservator of Projects (Externally Aided Projects). JPS is accountable to the Project Director, the leader of PIU.

The broad scope of services are under the consultancy assignment are as follows:

- 1) Advisory Services: Preparation of operational and technical manuals, technical survey for selection of the target villages, assistance in review of planning, implementation, O&M of civil structures, synthesization of project experiences and lessons, and advice for overall project management; and
- 2) Services by Task Concept: Site selection, design, cost estimation and monitoring of major civil works for soil and river management.

### **Services Provided:**

Advisory services for project management and implementation, including the following:

- a) Assisting in the formulation of operational and technical manuals related to the project;
- b) Assisting in technical (geographical, topographical, soil, land use, etc)



- surveys for selection for the target villages;
- c) Assisting in detailed plan for soil protection and land reclamation and civil works for soil and river management;
  - d) Assisting in review of planning, implementation, O&M of civil structures;
  - e) Assisting in bidding (LCB) in compliance with the guidelines of JBIC;
  - f) Assisting in the supervision and evaluation of Project progress;
  - g) Assisting in annual planning and budgeting;
  - h) Assisting in the report preparation such as the progress reports;
  - i) Assisting in the development of a financial system, including reporting of accomplishments from the line offices and flow of funds to the front line offices;
  - j) Assisting in synthesization of project experiences and lessons replicable to other areas, and
  - k) Assisting in liaison with JBIC regarding Project implementation

#### Services by Task:

The consultants are envisaged to conduct site selection, detailed design, cost estimation and monitoring the following structures, which will be constructed by contractors;

- a) Silt detention dams (large scale check dams)
- b) Spurs and embankments
- c) Ground sills

JPS is envisaged to assist in the preparation of the following reports and documents:

- Inception Report including the organizational procedures/decision making procedure, time schedule, obligation of the client and consultant, etc;
- Report on priority area selection;
- Detailed plan for soil protection and land reclamation and civil works for soil and river management;
- Detailed design and tender documentation;
- Tender evaluation reports;
- Progress reports (monthly and quarterly);
- Necessary technical reports; and
- Other necessary reports and documents.

**Location:** Una, Himachal Pradesh, India

**Client:** Government of Himachal Pradesh /Himachal Pradesh Forest Department

**Funding Agency:** JICA

**Period:** April 2008 - 31st March, 2014

**Associate Firm:** Nil

#### Management Consultancy for Swan River Integrated Watershed Management Project (SRIWMP) for Forest Department, Government of Himachal Pradesh, Phase - I

#### Brief Description of Project:

In India, damages to the agricultural production and human lives caused by soil erosion and floods are substantial enough to require adequate counter-measures for soil and water management in the affected areas. It is more important to protect small, but valuable cultivable land in the intermediate area between the mountainous regions and the flat plains. The captioned Project is envisaged as an integrated watershed management project containing such activities as afforestation, flood management, soil management and agricultural land protection in such low areas in India, with the experience envisaged to be expanded to other areas. Swan River Integrated Watershed Management Project is being implemented with financial assistance from Japan International Cooperation Agency over a project area of 61,900 hectares, covering 95 Gram Panchayats in Una district of Himachal Pradesh. The catchment area of Swan River in Una District is a typical low mountainous area and suffers from damages to agricultural fields/ lands caused by deforestation and consequential soil erosion and deteriorated flood damages, which are more serious than other districts. As such, Una district was





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- 2) Services by Task Concept: Site selection, design, cost estimation and monitoring of major civil works for soil and river management.

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- d) Assisting in review of planning, implementation, O&M of civil structures;
- e) Assisting in bidding (LCB) in compliance with the guidelines of JBIC;
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- h) Assisting in the report preparation such as the progress reports;
- i) Assisting in the development of a financial system, including reporting of accomplishments from the line offices and flow of funds to the front line offices;
- j) Assisting in synthesization of project experiences and lessons replicable to other areas, and
- k) Assisting in liaison with JBIC regarding Project implementation

#### **Services by Task:**

The consultants are envisaged to conduct site selection, detailed design, cost estimation and monitoring the following structures, which will be constructed by



contractors;

- a) Silt detention dams (large scale check dams)
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- c) Ground sills

JPS is envisaged to assist in the preparation of the following reports and documents:

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- Detailed plan for soil protection and land reclamation and civil works for soil and river management;
- Detailed design and tender documentation;
- Tender evaluation reports;
- Progress reports (monthly and quarterly);
- Necessary technical reports; and
- Other necessary reports and documents.

**Location:** Arunachal Pradesh, India

**Client:** Water Resources Department, Government of Arunachal Pradesh

**Funding Agency:** ADB

**Period:** November 2007 - August 2008

**Associate Firm:** Kellong Brown & Root Pty Ltd. (KBR), Australia

### **TA 4814-IND Project Processing and Capacity Development-Package 10: Preparing the North Eastern Integrated Flood and River Bank Erosion Management Project for Water Resources Department, Government of Arunachal Pradesh**

#### **Brief Description of Project:**

The Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (AIFRERMIP) was aimed to enhance the effectiveness and reliability of flood and riverbank erosion risk management (FRERM) systems in three existing flood embankment systems (or subprojects) protecting urban, suburban, and other strategic areas of Assam. The Program also aimed to strengthen the policy, planning, and institutional bases to support better FRERM operations. Comprehensive and adaptive structural and non-structural FRERM measures were provided in the three subproject areas. The captioned technical assistance (TA) supported the preparation of the North Eastern Integrated Flood and Riverbank Erosion Management Project (NEIFREMP) for Arunachal Pradesh (AP), with four components:

- Sector review, strategy and action plan preparation for integrated flood and riverbank erosion management (FREM) at the state level;
- Sample subproject selection and feasibility studies;
- Institutional development and investment roadmap;
- Investment packaging;

#### **Services Provided:**

JPS supported the development of a comprehensive framework for FREM, adopting an integrated approach on the basis of river basins in Arunachal Pradesh, and incorporating regional perspectives. Investment programs were aimed at ensuring improvement in management systems from scheme identification to maintenance with beneficiary participation, with an emphasis on higher cost effectiveness, efficiency, transparency, and sustainability. This also was supported by appropriate non-structural programs along with strengthening of policy and institutional framework. Services provided included the following:

- Sector Review and Preparation of Strategy and Action Plan;
- Sample Subproject Selection and Feasibility Studies;
- Sample Subproject Selection and Exploration of Design Options;



- Beneficiary Participation and Social Assessments;
- FREM Technical Assessment and Design;
- Complementary Program Assessments;
- Safeguards Assessments;
- Feasibility Studies and Sub-Project Implementation Plan;
- Institutional Development Roadmap and Investment Programs;
- Integrated FREM and IWRM;
- Sustainable Maintenance Funding;
- Investment Programming and Roadmap
- Project Packaging; and
- Organisation of Workshops and Seminars.

**Location:** Ahmedabad, Gujarat

**Client:** Gujarat State Disaster Mitigation Authority (GSDMA), Govt. of Gujarat

**Funding Agency:** World Bank

**Period:** November, 2004 - February, 2005

**Associate Firm:** International Centre for Emergency Techniques (ICET) B.V., Netherlands

**Location:** Gujarat

**Client:** Government of Gujarat

**Funding Agency:** ADB

**Period:** 2001 - 2004

**Associate Firm:** Baktie India Limited

**Establishment of Gujarat Institute of Disaster Management (GIDM)**

**Brief Description of Project:**

This consultancy assignment is aimed at the establishment of the GIDM and its global recognition as a superior institute in the field of disaster management, training and education, as envisioned by the GSDMA. Besides providing education and training, the GIDM would function as nodal centre for effective disaster response in Gujarat as partner of GSDMA.

**Services Provided:**

- Develop financial plans (capital and operational budgets) and propose implementation arrangements for a sustainable operation of the Institute.

**TA 3664-IND: Capacity Building for Earthquake Rehabilitation and Reconstruction Project**

**Brief Description of Project:**

The objective of the TA is to support the Panchayat Rural Housing & Rural Development Department (PHRD) and Urban Development & Urban Housing Department (UDHD) in implementing Government of Gujarat's reconstruction programme for earthquake damaged housing.

**Services Provided:**

The TA has four parts:

- Introduction of seismic engineering and technologies in the reconstruction programme
- Training and capacity building of local competence
- Monitoring and quality assurance of the reconstructed / repaired / retrofitted constructions
- Development of information systems for long term monitoring of the inhabitants while supporting GOG towards e-governance.



**Location:** Andhra Pradesh

**Client:** World Bank

**Funding Agency:** World Bank

**Period:** June 2002 - 2002

**Associate Firm:**  
DHV Consultants  
MDP Consultants (P) Ltd.

### **Development of long term Hazard Planning Management and Vulnerability Reduction Action Plan in Respect of Earthquakes in Andhra Pradesh**

#### **Brief Description of Project:**

The objective of the Project is to:

- Plan to strengthen disaster mitigation and management capabilities at state level (and in particular focus on Andhra Pradesh) and
- Evolve an effective disaster management plan specific to the state of Andhra Pradesh for implementation.

#### **Services Provided:**

##### **Part I : Focus on Capacity Building:**

- Review of current arrangements for preparedness and mitigation for natural disasters, especially earthquakes in Andhra Pradesh
- Recommend measures to strengthen the organizational structure
- Formulate comprehensive plan for natural disaster mitigation and management on the basis of updated hazard maps

##### **Part II : Focus on mitigation efforts**

- Identify and classify key urban and rural building types in the states and undertaking delineation of hazard zones based on seismic intensity
- Prepare technical guidelines for post earthquake damage assessment
- Prepare Action Plans for retrofitting and seismic strengthening of existing housing facilities and infrastructure
- Undertake awareness and community participation activities focused on repair and reconstruction / relocation

**Location:** Gujarat

**Client:** Gujarat Urban Development Company Limited

**Funding Agency:** JICA

**Period:** 2001

**Associate Firm:**  
Environment Planning Collaborative (EPC) as Lead Consultants and Babbie India Limited

### **Town Planning Consultancy Services; Preparation of Draft Development Plan for Bhuj in Gujarat**

#### **Brief Description of Project:**

The main objective of the Project is to reconstruct and upgrade essential infrastructure damages in the State especially the Kachchh, Jamnagar, Surendranagar and Rajkot districts. The sectors identified for the project include housing, urban and rural infrastructure, power and livelihood rehabilitation. The project will also provide assistance for institutional support, as well as multi-hazard disaster-preparedness and mitigation.

#### **Services Provided:**

- Preparation of draft development plan and general development control regulation as prescribed under the Gujarat Town Planning and Urban Development Act 1976 and The Gujarat Town Planning and Urban Development Rules, 1979.
- Formulation of a strategy for cost recovery in the project
- Formulation of strategy for institutional strengthening in the project
- Environmental Impact Assessment of large scale re-building and development in earthquake affected areas



**Location:** Orissa

**Client:** The Royal Norwegian Embassy, New Delhi

**Funding Agency:** Norwegian Aid

**Period:** Jan 2000 – Jan 2000

**Associate Firm:** Nil

### **Assessment of damage caused by the cyclone and suggestions for possible rehabilitation of fishing community in coastal Orissa**

#### **Brief Description of Project:**

The project involved assessment of damages caused by the recent cyclone of Oct. 1999 on the coastal districts of Orissa, focusing on the fisheries community in particular. A study on the above was conducted for developing an assistance programme for NORAD

#### **Services Provided:**

- Sample survey in affected villages in the coastal districts of Orissa
- Interface with State Government Officials and international NGOs and local NGOs to assess their participation in the project
- Design of a possible assistance program
- A broad preview of the financial requirements for such a program and
- Suggestions regarding possible partners for implementation of such an assistance programme.
- Development of institutional models for delivery of NORAD assistance

**Location:** Andhra Pradesh

**Client:** Government of Andhra Pradesh

**Funding Agency:** World Bank

**Period:** 1999 - 2000

**Associate Firm:** Delft Hydraulics

### **Andhra Pradesh Hazard Mitigation Project**

#### **Brief Description of Project:**

The project intends to develop institutions, infrastructure and systems for strengthening the capacity of the Andhra Pradesh government to effectively tackle the recurrent cyclone disasters.

#### **Services Provided:**

- Social assessment of coastal communities
- Creation of a socio-economic database on coastal communities
- Linking of the database to a monitoring and decision support system
- Implementation support for developing disaster management plan
- Recommendations on institutional set-up for tackling cyclones
- Involvement of local communities in developing plans for disaster management
- Conduct of training programmes on new technologies being introduced under the project.

**Location:** Gujarat

**Client:** Government of Gujarat

**Funding Agency:** Preparing project document for availing International Funds

**Period:** 1999

**Associate Firm:** Nil

### **Gujarat Cyclone Project**

#### **Brief Description of Project:**

Preparation of a project document for availing international funds for the project in cyclone hit state of Gujarat for long-term disaster preparedness and hazard mitigation.

#### **Services Provided:**

- Assessment of the impact of cyclone with respect to social, economic, infrastructure and environmental aspects
- Preparation of a document with strategies for long-term disaster preparedness and hazard mitigation
- Development of strategies for Community participation in identifying effective





**Location:** Maharashtra

**Client:** World Bank

**Funding Agency:** World Bank

**Period:** 1994 - 1996

**Associate Firm:** DHV Consultants, The Netherlands

**Location:** States of West Bengal, Kerala, Tamil Nadu and Andhra Pradesh

**Client:** European Union

**Funding Agency:** European Union

**Period:** 1994

**Associate Firm:** Dan Group International, Denmark

- long-term disaster management strategies
- Recommendations on institutional framework for disaster management
- Budgeting for project activities
- Action plan for implementing project activities

### **Maharashtra Emergency Earthquake Rehabilitation Project (MEERP) – Planning, Coordination and Implementation Consultancy**

#### **Brief Description of Project:**

To provide management and technical support for project implementation.

#### **Services Provided:**

- Overall planning, coordination and management of the Project.
- Review and preparation of progress reports.
- Development of project management systems and accounting manual.
- Review existing MIS formats, effect and implement changes, if any.
- Training to project staff to enhance institutional learning.

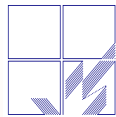
### **Cyclone Project in India**

#### **Brief Description of Project:**

- Evaluation of impact of anti disaster shelters on local communities.

#### **Services Provided:**

- Assessment of impact of cyclone shelters on local communities before, during and after a cyclone.
- Assessment of systems and procedures for warning and relief.



**Corporate Office:**

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